HK VENTURE, LLC
CALVERTON INDUSTRIAL PARK

4285 MIDDLE COUNTRY RD
CALVERTON NY, 11933

ISSUED FOR FEIS
APRIL 02, 2021

ARCHITECTURAL ABBREVIATIONS:

A	
ACT	ACOUSTICAL CEILING TILE
ADDL	ADDITIONAL
ADJ	ADJUST/ADJACENT
ADMIN	ADMINISTRATION
AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ALUM	ALUMINUM
AL	ALUMINUM
ANUN	ANNUNCIATOR
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
AUTO	AUTOMATIC
B	
BD	BOARD
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BO	BOTTOM OF
BOT	BOTTOM
BR	BRICK
BRG	BEARING
C	
CAB	CABINET
CANTL	CANTILEVER
CAP	CAPACITY
CEM	CEMENT
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONF	CONFERENCE
CONN	CONNECT-ED-ION
CONT	CONTINUOS
CONST	CONSTRUCTION
CONTR	CONTRACT
COORD	COORDINATE
CORR	CORRIDOR
CPT	CARPET
CT	CERAMIC TILE
CTR	CENTER
CUFT	CUBIC FEET
CUH	CABINET UNIT HEATER
CW	COLD WATER
D	
DEMO	DEMOLITION
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGONAL
DIFF	DIFFUSER
DIM	DIMENSION
DISP	DISPENSER
DIV	DIVISION
DN	DOWN
DWG	DRAWING
DWLS	DOWELS
E	
EA	EACH
EC	ELECTRIC CABINET
EF	EXHAUST FAN
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATION
ENTR	ENTRANCE
EQ	EQUAL
EQUIP	EQUIPMENT
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
EWC	ELECTRIC WATER COOLER
F	
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FIN	FINISH
FIXT	FIXTURE
FLASH	FLASHING
FLEX	FLEXIBLE
FLUOR	FLUORESCENT
FRMG	FRAMING
FT	FOOT / FEET
FTG	FOOTING
FURR	FURRING
FUT	FUTURE
G	
GA	GAUGE
GAL	GALLONS
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GL	GLASS
GR	GRADE
GYP. BD.	GYPSUM BOARD
GYP	GYPSUM
H	
H	HEIGHT
HD	HEAD
HDCP	HANDICAP
HDR	HEADER
HDW	HARDWARE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HT	HEIGHT
HTR	HEATER
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HW	HOT WATER
I	
ID	INSIDE DIAMETER
IN	INCH
INSUL	INSULATION
INT	INTERIOR
J	
JAN	JANITOR
JB	JUNCTION BOX
JST	JOIST
JT	JOINT
K	
KO	KNOCK OUT
L	
L	LENGTH
L/LAV	LAVATORY
LBS	POUND
LF	LINEAL FOOT
LIN	LINEAR
LKR	LOCKER
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATION
LOR	LOCATE
LT	LIGHT
LTG	LIGHTING
LVR	LOUVER
M	
MAN	MANUAL
MATL	MATERIAL
MAX	MAXIMUM
MC	MEDICINE CABINET
MCJ	MASONRY CONTROL JOINT
MD	METAL DECK
MECH	MECHANICAL
MEMB	MEMBRANE
MTL	METAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MONO	MONOLITHIC
MTD	MOUNTED
MULL	MULLION
N	
NA	NOT APPLICABLE
NE	NORTHEAST
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NRC	NOISE REDUCTION COEFFICIENT
NT	NOTE
NTS	NOT TO SCALE
NW	NORTHWEST
O	
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFF	OFFICE
OH	OVERHEAD
OPER	OPERATOR
OPNG	OPENING
OPP	OPPOSITE
P-Q	
PART	PARTITION
PED	PEDESTAL
PL	PLATE
PL	PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLBG	PLUMBING
PLYWD	PLYWOOD
PNL	PANEL
PR	PAIR
PRESS	PRESSURE
PRIM	PRIMARY
PROJ	PROJECTION
PTR	PRINTER
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PWR	POWER
R	
R	RISER / RADIUS
RA	RETURN AIR
RAD	RADIATION
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REC	RECESSED
RECEPT	RECEPTACLE
RECEPT	RECEPTION
REF	REFERENCE
REF	REFRIGERATOR
REINF	REINFORCE
REQD	REQUIRED
RES	RESISTANT
RET	RETAINING
REV	REVERSE / REVISE
RM	ROOM
RO	ROUGH OPENING
RS	ROUGH SLAB
RV	ROOF VENT
S	
S	SINK
SCH	SCHEDULE
SCWD	SOLID CORE WOOD
SD	SHOWER DRAIN
S/D	SMOKE DAMPER
SDISP	SOAP DISPENSER
SE	SOUTHEAST
SECT	SECTION
SECY	SECRETARY
SF	SQUARE FOOT
SH	SHOWER
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SURF. MTD.	SURFACE MOUNTED
SPEC	SPECIFICATIONS
SQ	SQUARE
SQ YD	SQUARE YARD
SS	STAINLESS STEEL
ST	STREET
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURAL
SUPV	SUPERVISOR
SUSP	SUSPENDED
S	SWITCH
SW	SOUTHWEST
SWD	SOFTWOOD
T	
TAN	TANGENT
TBD	TACKBOARD
TEL	TELEPHONE
TEMP	TEMPERATURE
T&G	TONGUE & GROOVE
THRES	THRESHOLD
TOIL	TOILET
T.O.	TOP OF
TOW	TOP OF WALL
TOS	TOP OF SLAB/STEEL
TRAN	TRANSFORMER
TV	TELEVISION
TYP	TYPICAL
U	
U	URINAL
UNO	UNLESS OTHERWISE NOTED
UTIL	UTILITY
VENT	VENTILATION
V	
VERT	VERTICAL
VEST	VESTIBULE
W-X-Y-Z	
W	WIDTH / WIDE
W	WIDE FLANGE
W/	WITH
WC	WATER CLOSET
WD	WOOD
WDW	WINDOW
WHTR	WATER HEATER
W/O	WITHOUT
WT	WEIGHT

MATERIAL LEGEND:

STONE	EARTH	SHIM
BATT INSULATION	CONCRETE	WOOD BLOCKING
RIGID INSULATION	STONE FILL	PLYWOOD
CARPET	GYP. BOARD	ALUMINUM
CONCRETE MASONRY BLOCK	WOOD FINISH	STEEL
BRICK		

SYMBOLS LEGEND:

SECTION NO. / X / X.XX / SHEET NO.	SECTION MARKER
ELEVATION NO. / X / X.XX / SHEET NO.	ELEVATION MARKER
DETAIL NO. / X / X.XX / SHEET NO.	DETAIL MARKER
RECEPTION 501	ROOM TAG
	CEILING MOUNTED EXIT SIGN
P1	PARTITION TAG
RECESSED F.E.C.	FIRE EXTINGUISHER CABINET
F.E.	FIRE EXTINGUISHER WALL MTD.
W1	WINDOW / STOREFRONT MARKER

DRAWING LIST:

ARCHITECTURAL

CVR.1	COVER SHEET & DRAWING LIST
A1.1	BUILDING FLOOR PLANS
A1.2	BUILDING FLOOR PLANS
A2.1	BUILDING ELEVATIONS
A2.2	BUILDING ELEVATIONS
A2.3	BUILDING ELEVATIONS

KEY MAP

HK VENTURES, LLC
CALVERTON
INDUSTRIAL PARK
4285 MIDDLE COUNTRY RD
CALVERTON NY, 11933

bld architecture, dpc
31 West Main Street, Suite 205
Patchogue, NY 11772
TEL: 631 580 2100
FAX: 631 580 9760
www.bldnow.com

ISSUED FOR FEIS REVIEW: 12-02-21
REVISION: DATE:

DRAWING TITLE:

COVER SHEET &
DRAWING LIST

SCALE: NTS

DRAWN BY: NB

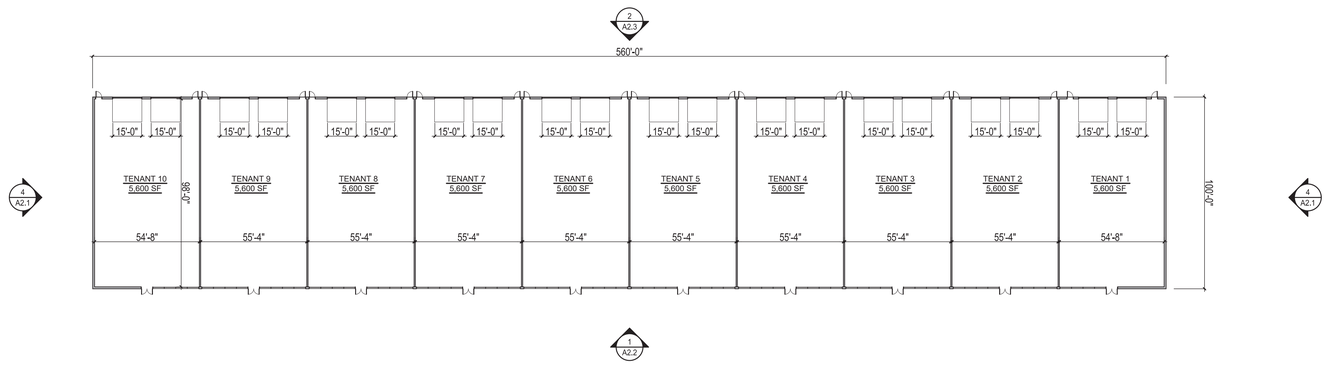
It is a violation of the Education Law of the State of New York for any person, unless he is acting under the direction of a licensed Architect to alter any item on this drawing and/or in this specification in any way. If any such item is altered, the altering Architect shall affix to the item his seal and the notation "altered by" followed by his signature and the date of such alteration together with a specific description of the alteration.

COPYRIGHT © 2016

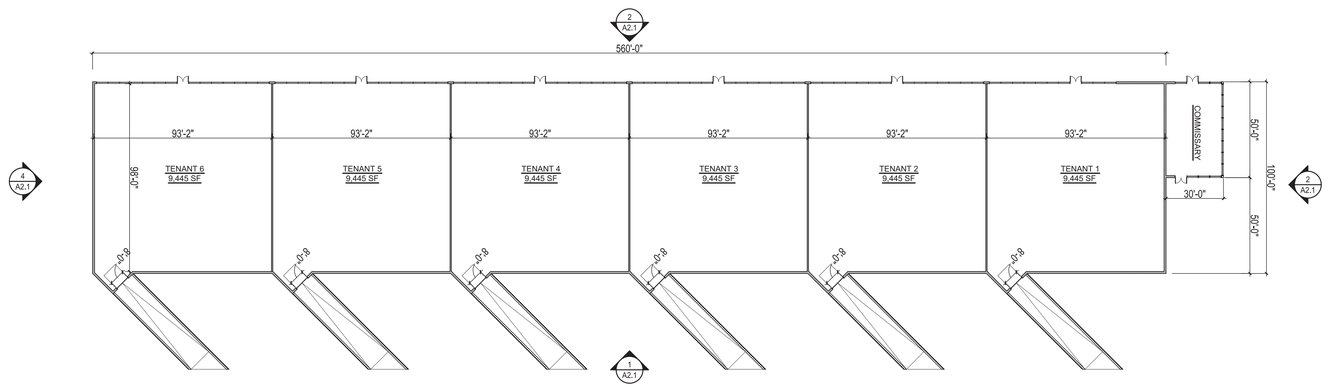
DWG. NO.

CVR.1

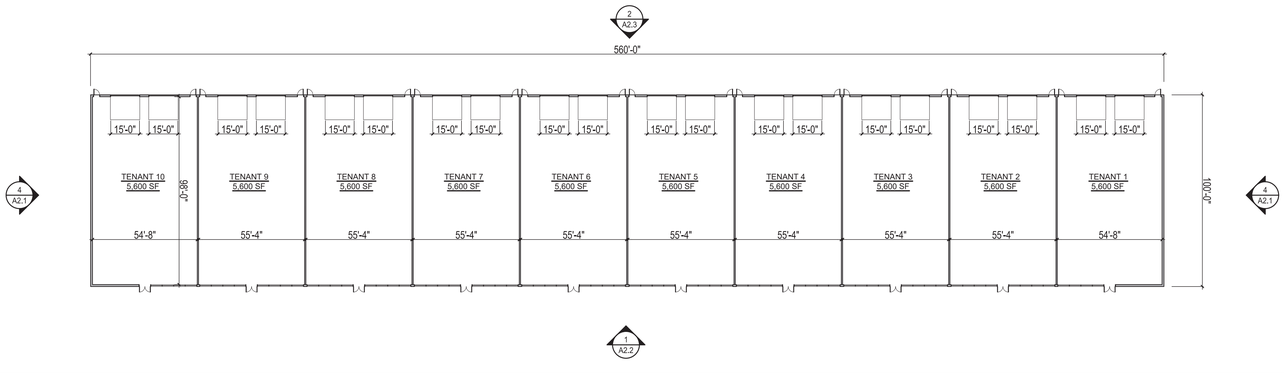
19-1035
HK VENTURES, LLC PROPOSED
INDUSTRIAL PARK
CALVERTON NY, 11933



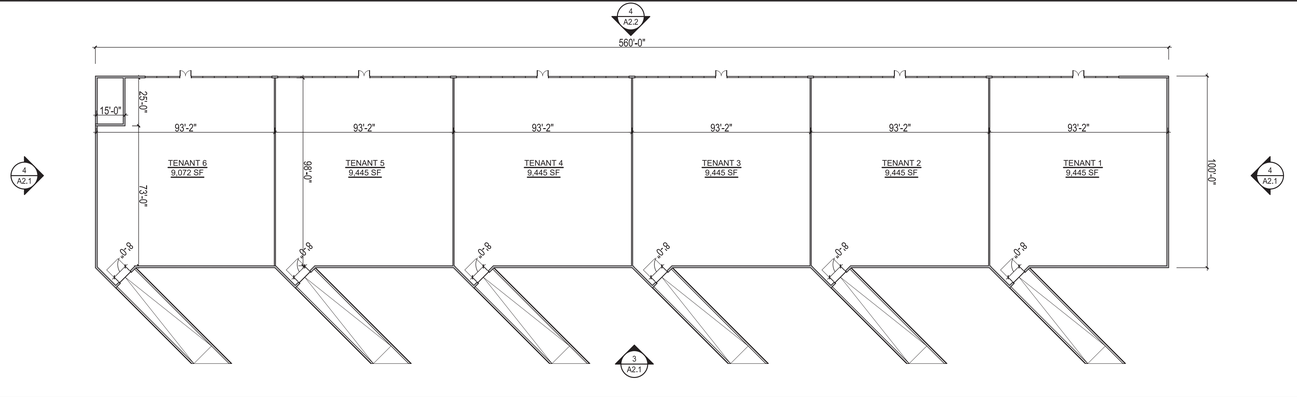
1 BUILDING 1 PLAN
SCALE: 1/32" = 1'-0"



2 BUILDING 2 PLAN
SCALE: 1/32" = 1'-0"



3 BUILDING 3 PLAN
SCALE: 1/32" = 1'-0"



4 BUILDING 4 PLAN
SCALE: 1/32" = 1'-0"

HK VENTURES, LLC
CALVERTON
INDUSTRIAL PARK

4285 MIDDLE COUNTRY RD
CALVERTON NY, 11933

bld architecture, dpc
31 West Main Street, Suite 205
Patchogue, NY 11772

TEL: 631 580 2100
FAX: 631 580 9760
www.bldnow.com

ISSUED FOR FEIS REVIEW: 12-02-21
REVISION: DATE:

DRAWING TITLE:
BUILDING PLANS

SCALE: 1/32" = 1'-0"
DRAWN BY: NB

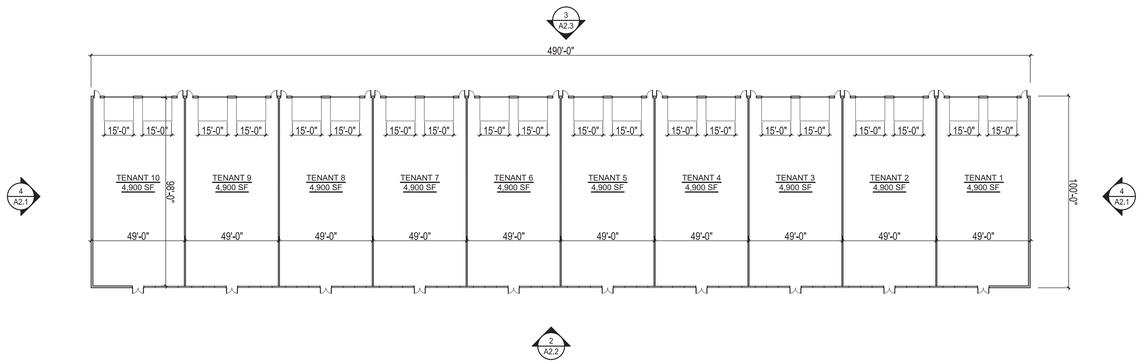
It is a violation of the Education Law of the State of New York for any person, unless he is acting under the direction of a licensed Architect to alter any item on this drawing and/or in this specification in any way. If any such item is altered, the altering Architect shall affix to the item his seal and the notation "altered by" followed by his signature and the date of such alteration together with a specific description of the alteration.

COPYRIGHT © 2016

DWG. NO.

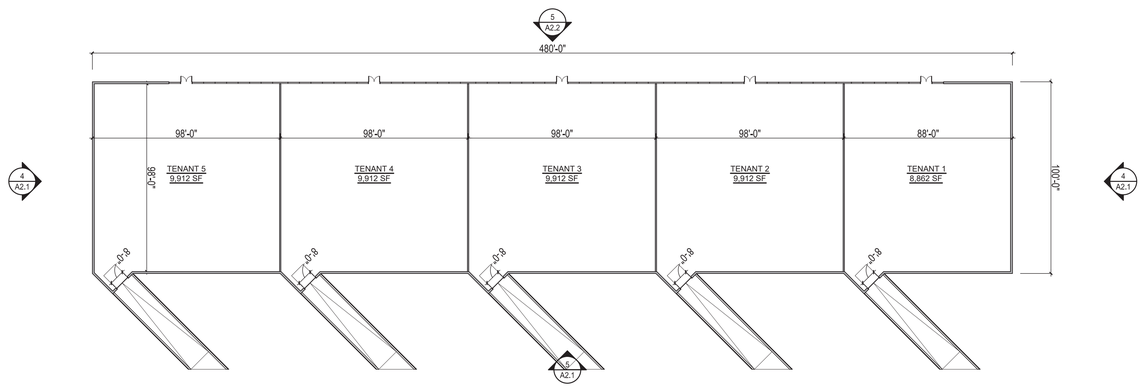
A1.1

19-1035
HK VENTURES, LLC PROPOSED
INDUSTRIAL PARK
CALVERTON NY, 11933



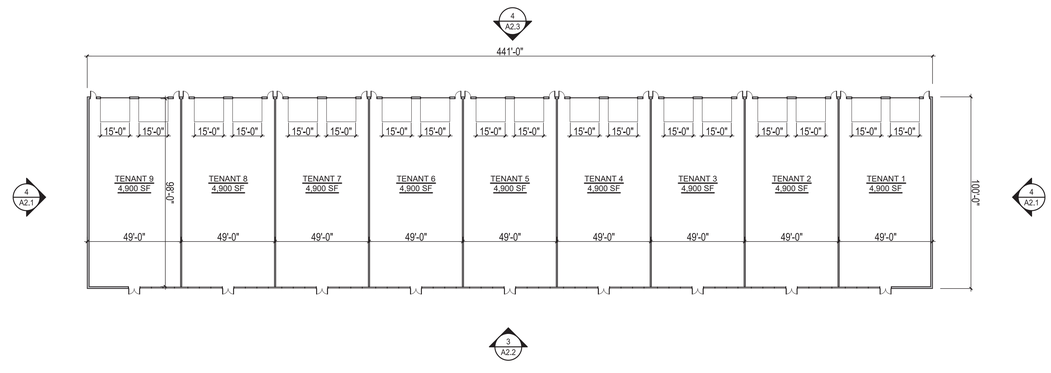
1 BUILDING 5 PLAN

SCALE: 1/32" = 1'-0"



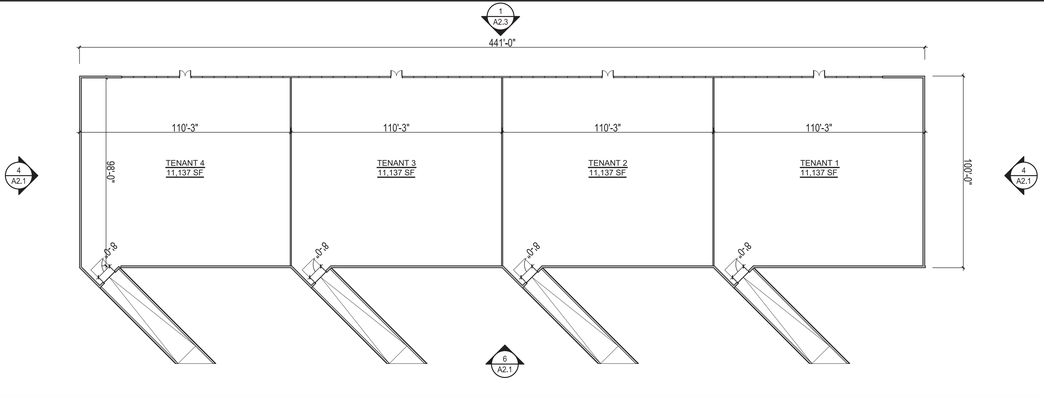
2 BUILDING 6 PLAN

SCALE: 1/32" = 1'-0"



3 BUILDING 7 PLAN

SCALE: 1/32" = 1'-0"



4 BUILDING 8 PLAN

SCALE: 1/32" = 1'-0"

HK VENTURES, LLC
CALVERTON
INDUSTRIAL PARK

4285 MIDDLE COUNTRY RD
CALVERTON NY, 11933

bld architecture, dpc

31 West Main Street, Suite 205
Patchogue, NY 11772

TEL: 631 580 2100
FAX: 631 580 9760
www.bldnow.com

ISSUED FOR FEIS REVIEW: 12-02-21
REVISION: DATE:

DRAWING TITLE:

BUILDING PLANS

SCALE: 1/32" = 1'-0"

DRAWN BY: NB

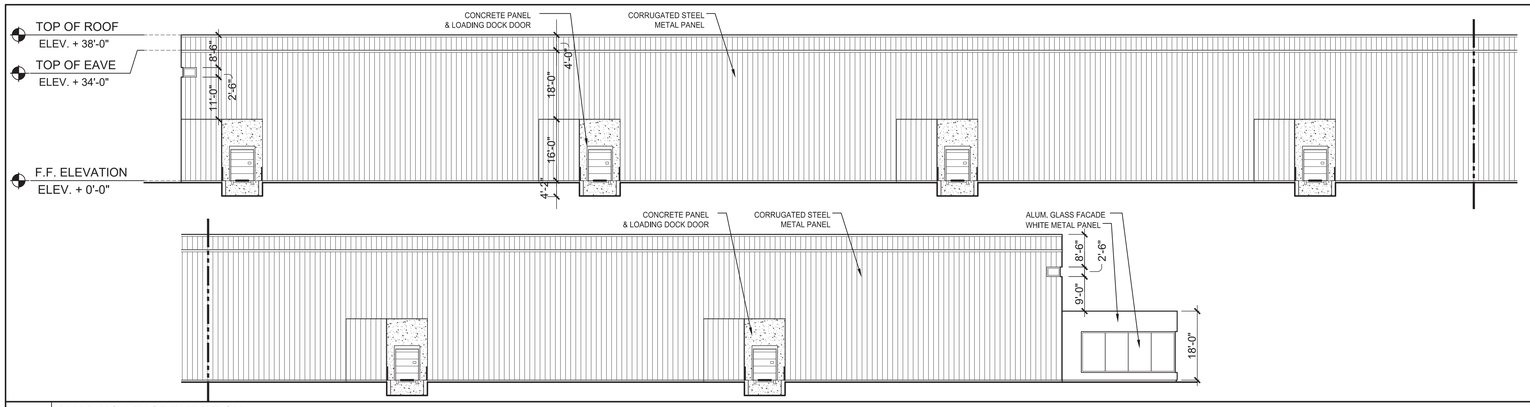
It is a violation of the Education Law of the State of New York for any person, unless he is acting under the direction of a licensed Architect to alter any item on this drawing and/or in this specification in any way. If any such item is altered, the altering Architect shall affix to the item his seal and the notation "altered by" followed by his signature and the date of such alteration together with a specific description of the alteration.

COPYRIGHT © 2016

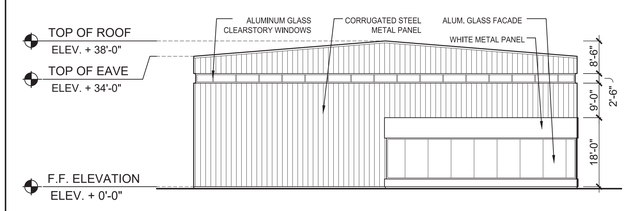
DWG. NO.

A1.2

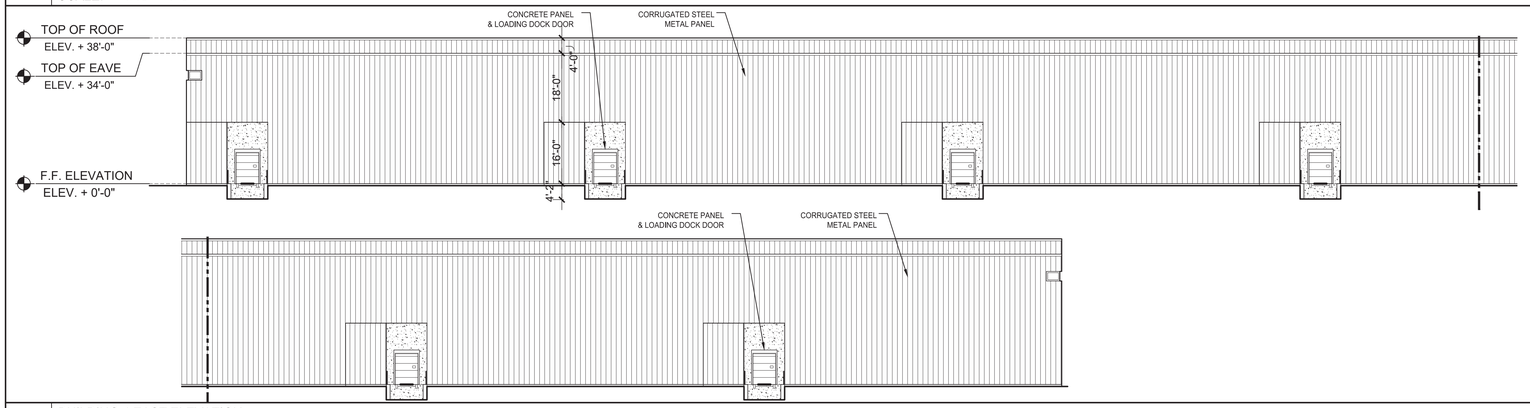
19-1035
HK VENTURES, LLC PROPOSED
INDUSTRIAL PARK
CALVERTON NY, 11933



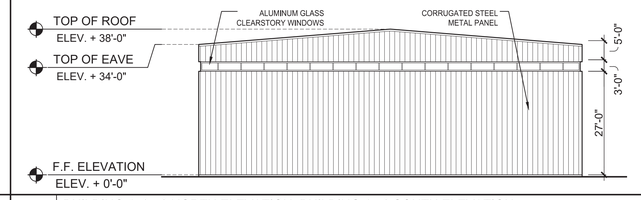
1 BUILDING 2 EAST ELEVATION
SCALE: 1/16" = 1'-0"



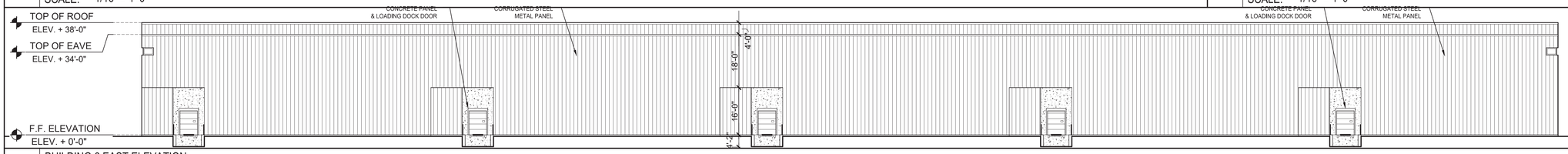
2 BUILDING 2 NORTH ELEVATION
SCALE: 1/16" = 1'-0"



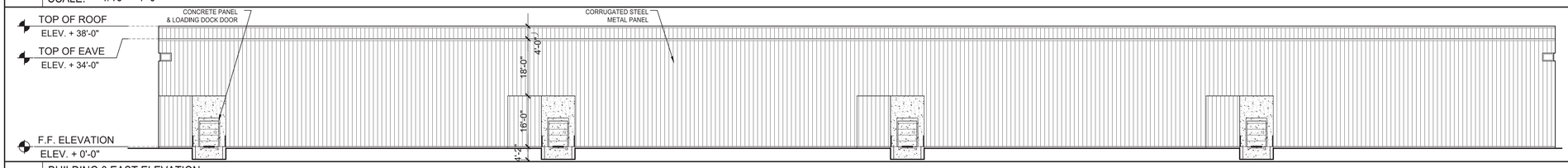
3 BUILDING 4 EAST ELEVATION
SCALE: 1/16" = 1'-0"



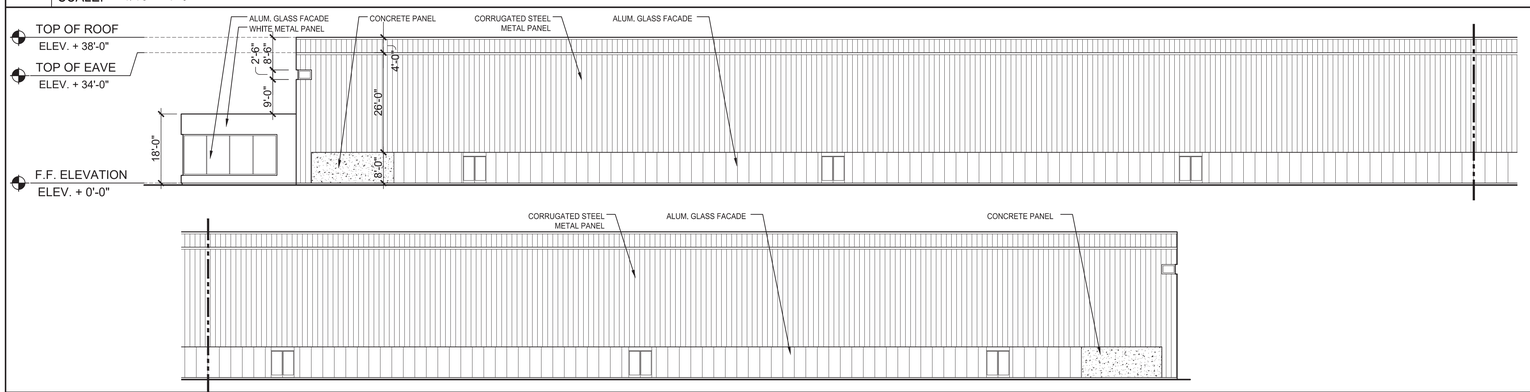
4 BUILDING 1, 3 - 8 NORTH ELEVATION, BUILDING 1 - 8 SOUTH ELEVATION
SCALE: 1/16" = 1'-0"



5 BUILDING 6 EAST ELEVATION
SCALE: 1/16" = 1'-0"



6 BUILDING 8 EAST ELEVATION
SCALE: 1/16" = 1'-0"



7 BUILDING 2 WEST ELEVATION
SCALE: 1/16" = 1'-0"

HK VENTURES, LLC
CALVERTON INDUSTRIAL PARK
4285 MIDDLE COUNTRY RD
CALVERTON NY, 11933

bld architecture, dpc
31 West Main Street, Suite 205
Patchogue, NY 11772
TEL: 631 580 2100
FAX: 631 580 9760
www.bldnow.com

ISSUED FOR FEIS REVIEW: 12-02-21
REVISION: DATE:

DRAWING TITLE:
BUILDING ELEVATIONS

SCALE: 1/16" = 1'-0"
DRAWN BY: NB

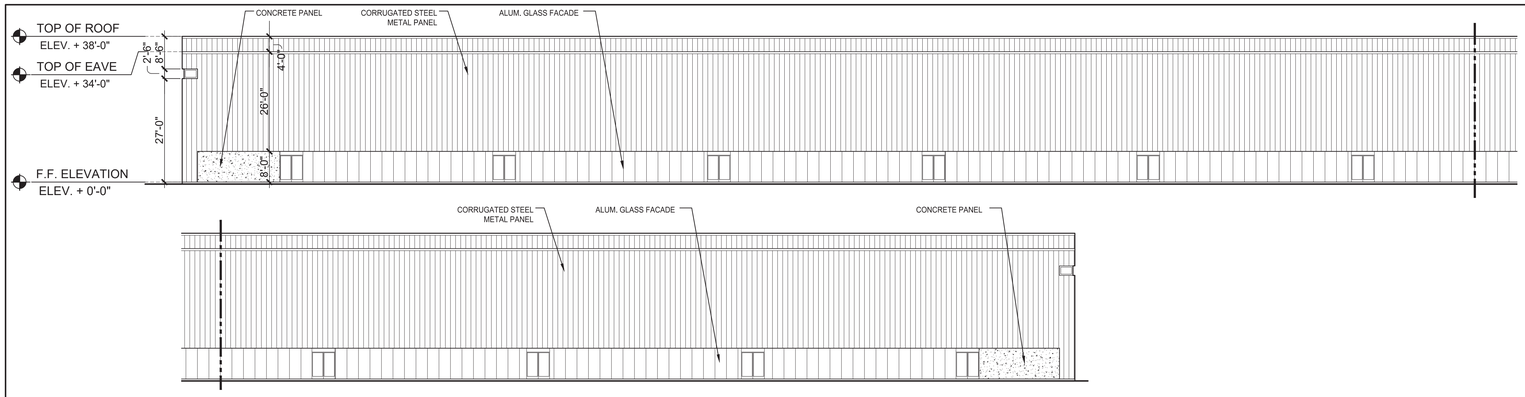
It is a violation of the Education Law of the State of New York for any person, unless he is acting under the direction of a licensed Architect to alter any item on this drawing and/or in this specification in any way. If any such item is altered, the altering Architect shall affix to the item his seal and the notation "altered by" followed by his signature and the date of such alteration together with a specific description of the alteration.

COPYRIGHT © 2016

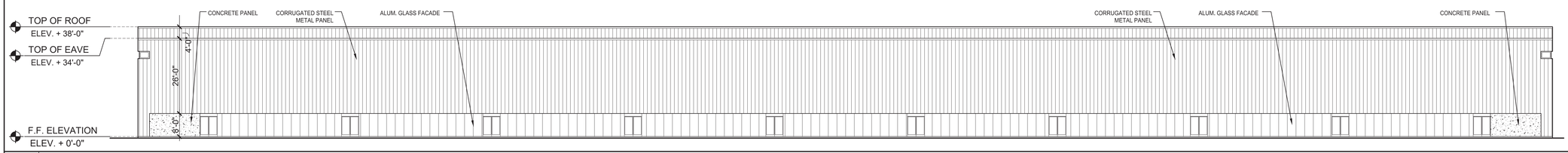
DWG. NO.

A2.1

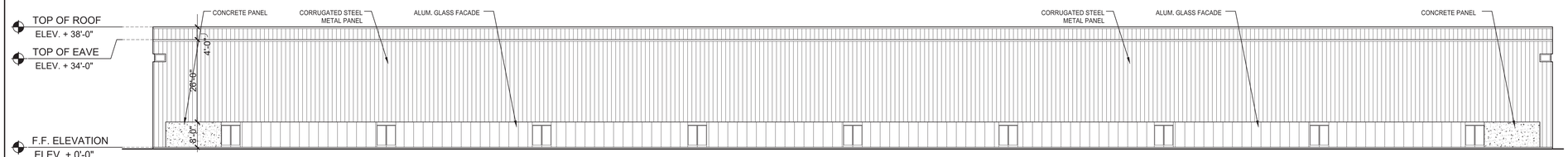
19-1035
HK VENTURES, LLC PROPOSED
INDUSTRIAL PARK
CALVERTON NY, 11933



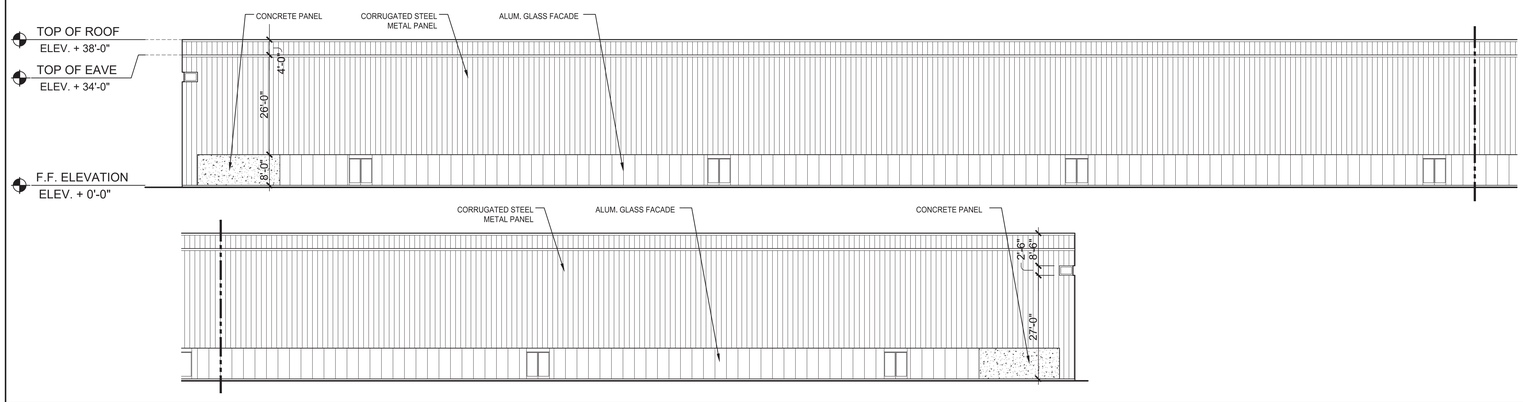
1 BUILDING 1, 3 EAST ELEVATION
SCALE: 1/16" = 1'-0"



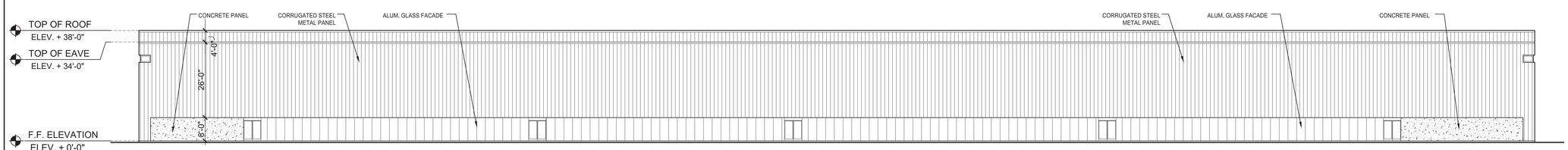
2 BUILDING 5 EAST ELEVATION
SCALE: 1/16" = 1'-0"



3 BUILDING 7 EAST ELEVATION
SCALE: 1/16" = 1'-0"



4 BUILDING 4 WEST ELEVATION
SCALE: 1/16" = 1'-0"



5 BUILDING 6 WEST ELEVATION
SCALE: 1/16" = 1'-0"

HK VENTURES, LLC
CALVERTON INDUSTRIAL PARK

4285 MIDDLE COUNTRY RD
CALVERTON NY, 11933

bld architecture, dpc

31 West Main Street, Suite 205
Patchogue, NY 11772

TEL: 631 580 2100
FAX: 631 580 9760
www.bldnow.com

ISSUED FOR FEIS REVIEW: 12-02-21
REVISION: DATE:

DRAWING TITLE:
BUILDING ELEVATIONS

SCALE: 1/16" = 1'-0"

DRAWN BY: NB

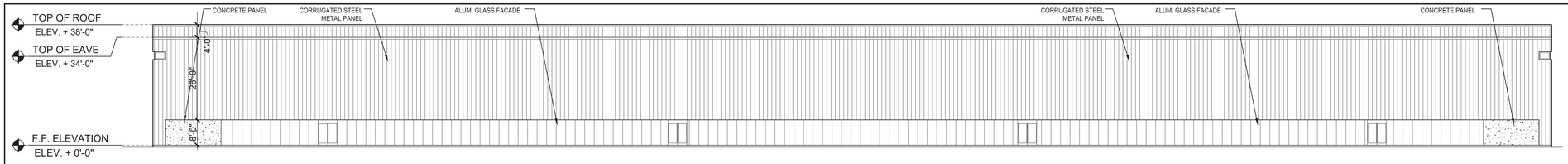
It is a violation of the Education Law of the State of New York for any person, unless he is acting under the direction of a licensed Architect to alter any item on this drawing and/or in this specification in any way. If any such item is altered, the altering Architect shall affix to the item his seal and the notation "altered by" followed by his signature and the date of such alteration together with a specific description of the alteration.

COPYRIGHT © 2016

DWG. NO.

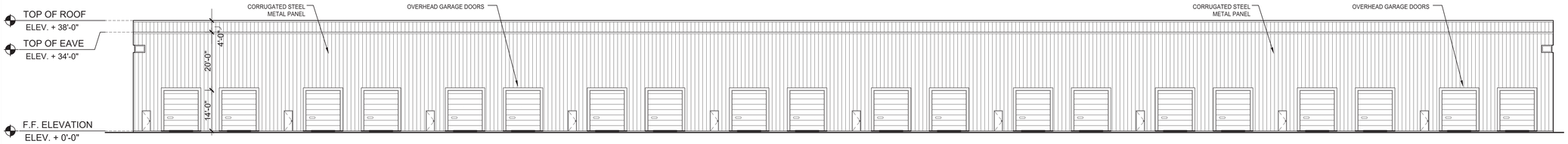
A2.2

19-1035
HK VENTURES, LLC PROPOSED
INDUSTRIAL PARK
CALVERTON NY, 11933

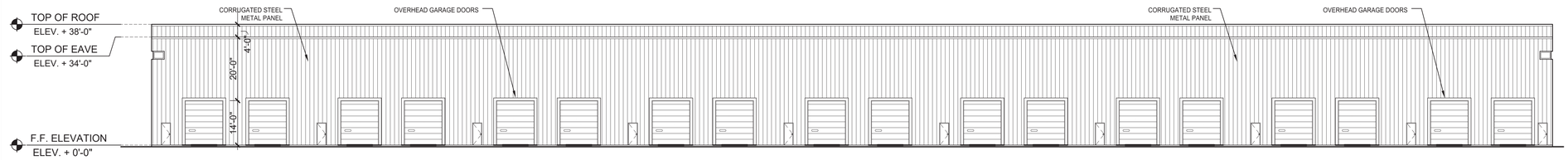


1 BUILDING 8 WEST ELEVATION
SCALE: 1/16" = 1'-0"

2 BUILDING 1 & 3 WEST ELEVATION
SCALE: 1/16" = 1'-0"



3 BUILDING 5 WEST ELEVATION
SCALE: 1/16" = 1'-0"



4 BUILDING 7 WEST ELEVATION
SCALE: 1/16" = 1'-0"

HK VENTURES, LLC
CALVERTON INDUSTRIAL PARK
4285 MIDDLE COUNTRY RD
CALVERTON NY, 11933

bld architecture, dpc
31 West Main Street, Suite 205
Patchogue, NY 11772
TEL: 631 580 2100
FAX: 631 580 9760
www.bldnow.com

ISSUED FOR FEIS REVIEW: 12-02-21
REVISION: DATE:

DRAWING TITLE:
BUILDING ELEVATIONS

SCALE: 1/16" = 1'-0"
DRAWN BY: NB

It is a violation of the Education Law of the State of New York for any person, unless he is acting under the direction of a licensed Architect to alter any item on this drawing and/or in this specification in any way. If any such item is altered, the altering Architect shall affix to the item his seal and the notation "altered by" followed by his signature and the date of such alteration together with a specific description of the alteration.

COPYRIGHT © 2016

DWG. NO.

A2.3

19-1035
HK VENTURES, LLC PROPOSED
INDUSTRIAL PARK
CALVERTON NY, 11933

CALVERTON INDUSRIAL PARK

December 02, 2021

bld architecture

SITE AERIAL

VIEW 1 - ENTRANCE

VIEW 2 - MIDDLE COUNTRY ROAD

VIEW 3 - BIKE PATH

VIEW 4 - NORTH AERIAL

VIEW 5 - SOUTH AERIAL

Final Environmental Impact Statement
HK Ventures, LLC – Proposed Industrial Park
4285 Middle Country Road, Calverton, Town of Riverhead, NY
May 2022

Area Variance Consistency Analysis

The proposed site plan has been slightly modified to improve on-site circulation and the proposed building heights have been increased to achieve a 30-foot interior ceiling height. As a result of the proposed site design changes, pervious pavers have been incorporated into the area between the loading docks on the east side of the proposed development which has resulted in a decrease of the total proposed impervious surface coverage from 71.07 percent of the site to 65.51 percent of the site. Accordingly, the proposed relief from the zoning regulation for maximum impervious surface coverage in the Ind C zoning district (60 percent) has been reduced from 11.07 percent to 5.51 percent.

The proposed building height has been increased from 29 feet to 34 feet at the eave to accommodate a 30-foot ceiling height to increase warehouse efficiency and to accommodate standard modern inventory shelving systems. The proposed buildings would have sloped roofs for an overall building height of 38 feet to the top elevation to allow for prefabricated steel supports. Accordingly, an area variance for maximum building height would be required from the Board of Zoning Appeals as 30 feet is maximum building height permitted in the Ind C zoning district.

Section 3.1.2 of the Draft Environmental Impact Statement (DEIS) evaluated the area variance criteria set forth in New York State Town Law Article 16, Section 267-B for exceedance of the maximum impervious surface area and found that the granting of the requested variance would not be a detriment to the health, safety and welfare of the community. The purpose of this analysis is to evaluate the same criteria as it relates to the proposed relief from the maximum permitted building height of 30 feet and the cumulative impacts of the granting of the two area variances.

As set forth in Section 267-B, the review and decision on an area variance application is required to undertake a balancing evaluation, which takes into "*consideration of the benefit to the applicant if the variance is granted, as weighed against the detriment to the health, safety, and welfare of the neighborhood or community by such grant*." Each of the five criteria and an analysis of the proposed action's consistency therewith, is presented below:

1. ***Whether an undesirable change will be produced in the character of the neighborhood or a detriment to nearby properties will be created by the granting of the area variance.***

   The proposed building height of 34 feet to the eave and 38 feet to the top elevation allows for an interior ceiling height of 30 feet to be provided, which is desired to provide for warehouse efficiency sought by tenants and to accommodate standard modern inventory shelving systems that require such height clearance.

   As illustrated on the renderings (see Appendix C of this FEIS) and the proposed site plan (see Appendix B of this FEIS), the proposed buildings would be set back a distance of 124.7 feet from Middle Country Road, 195.2 feet from the rear property line, and 121 feet and 100 feet from the eastern and western property lines, respectively. All of the setbacks exceed the minimum requirement for the Ind C zoning district (i.e., Required Front, Rear, and Side Yards: 30 Feet, 50 Feet, and 30 Ft/60 Feet Combined

respectively). The use of generous landscaped buffers and open space is intended to preserve the rural appearance and minimize views into the property from Middle Country Road and adjacent parcels. The size of the property at 1,317,884 SF, which is far greater than the minimum lot area of 80,000 SF, allows for the proposed development to be designed with greater setbacks in order to maintain views and not adversely impact surrounding properties.

The proposed site plan has been modified to reduce the maximum permitted impervious coverage from 11.07 percent to 5.51 percent. As indicated in Section 3.1.2 of the DEIS, the overall plan is below the maximum building coverage (Permitted: 40%; Proposed: 31.31%), exceeds the minimum landscape requirement (Required: 20% contiguous in front yard; Proposed: 23.15%), and, as noted above, provides for greater front, side and rear yard setbacks than what is required. As such, while impervious coverage is exceeded by less than six percent, the reduced building coverage and significant landscape with sufficient setbacks to the property lines minimize the visual impact of additional pavement.

The requested relief of 5.51 percent is to accommodate the perimeter driveways and loading areas for safe truck movements and activity. As noted in Section 3.2.1 of the DEIS, the proposed design seeks to separate passenger vehicles from truck activity with vehicular parking on both sides of the center drive aisle, and truck loading, unloading and access on the east and west sides of the buildings. The proposed plan achieves this design intent while also exceeding all required setbacks such that views of the subject property upon implementation of the proposed development would not be adversely impacted from the surrounding parcels or the Middle Country Road corridor. Finally, all stormwater generation from a nine-inch rain event would be contained and recharged on-site through a system of drainage infrastructure, inclusive of a recharge basin in the rear of the property.

Overall, based on the above, the proposed development would not result in an undesirable change to the character of the neighborhood, nor would there be any detriment to nearby properties with the granting of the requested variances.

2. Whether the benefit sought by the applicant can be achieved by some method, feasible for the applicant to pursue, other than an area variance.

The proposed building height has been increased from 29 feet to 34 feet at the eave and 38 feet at top elevation to increase warehouse efficiency and to accommodate standard modern inventory shelving systems that require an interior ceiling height of 30 feet. While the variance could be avoided with a decrease in building height, the proposed buildings would not be able to meet the existing demand for industrial warehouses with greater ceiling heights. The Fundamental Market Study included as Appendix D to the DEIS notes that ceilings of 30 feet are needed to support this demand and is the minimum ceiling height for modern warehousing (page 63). The proposed building height of 38 feet is needed for clear space, efficiency measures and structural building measures. As such, the lowest building height that can accommodate the proposed development with 30-foot clearance is 38 feet.

Additionally, the increased ceiling height has become industry standard for industrial development across the country as well as Long Island. As provided in Attachment 1 of this Area Variance Analysis, the issue of ceiling height and the gradual increase in heights seen in industrial development is well covered. As excerpted in an article entitled "*Increased demand for efficiency drives tenants to buildings with more clear height*" published at www.Rooflifters.com: "Over the last 30 years, the industrial real estate market has seen buildings grow taller to help high-volume tenants in their quest for increased warehouse efficiency. During the 1970s, most buildings were built with clear heights below 20 feet. As

modern warehousing practices spread throughout the country, many tenants demanded more and more "cubic" space in their facilities – and buildings grew to 24-, 28- and 32-foot clear. A building's clear height is defined as the usable height to which a tenant can store its product on racking. This figure is measured below any obstructions such as joists, lights or sprinklers. The latest evolution is a move "upward" to 36-foot clear buildings." (see Attachment 1). Across Long Island (see Attachment 2), sample real estate listings for industrial development in Suffolk County include clear heights of 25-to-30 feet in Southampton, NY, 38-feet in Bay Shore, NY, 40-feet in Melville, NY, and 36-feet in Medford, NY. Avoiding the variance by decreasing the building height would not be a feasible option for the Applicant because of the industry need for higher clearance.

Due to the type of development and the truck activity that is projected to occur on-site, the separation of truck activity and driveways from the passenger vehicles is preferred for safety purposes. The site geometry requires a rather linear and symmetrical development plan that impacts the flexibility of design options for an intended light industrial park. While the variance could be avoided with the elimination of buildings, the overall investment cost does not make this a feasible option for the Applicant.

3. Whether the requested area variance is substantial.

The subject property is situated within the Ind C zoning district and, as indicated in the DEIS, the intent of the project is to "meet the demands of smaller users (i.e., those seeking spaces approximately 5,000 SF-to-50,000 SF in area) with adequate loading space and docks, high ceilings (for warehousing and distribution), and larger drive-in doors" (page 11). The proposed 30-foot ceiling height and top elevation of 38 feet constitutes a 26.6 percent relief, but the additional height is to meet an industry expectation for industrial development. As a standard industry design trend for modern warehousing, the greater building heights are being developed elsewhere across Long Island (see Attachment 2) and the clearance height is becoming an industry expectation for industrial warehouse efficiency as well as to accommodate modern shelving systems (see Attachment 1). As such, the requested 38-foot building height to achieve the 30-foot interior clear height will result in a development that directly responds to the industry demand.

The proposed design exceeds the maximum permitted impervious coverage by 5.51 percent, but the property size is over 16 times greater than the minimum permitted (i.e., the subject property is 1,317,884 SF and the minimum lot area permitted is 80,000 SF). A variance of 5.51 percent on an 80,000 SF parcel would be considered substantial and likely prove difficult to meet all required setbacks and contiguous landscape. However, with a site area at over 1.3 million square feet, the requested variance is being sought but the proposed design exceeds all of the minimum setback and landscape requirements and complies with all of the supplementary design standards and guidelines for the Ind C development. As such, the requested variance related to impervious surface is not considered substantial.

4. Whether the proposed variance will have an adverse effect or impact on the physical or environmental conditions in the neighborhood or district.

The proposed building height has been increased from 29 feet to 34 feet at the eave and 38 feet at top elevation to increase warehouse efficiency and to accommodate standard modern inventory shelving systems that require an interior ceiling height of 30 feet. The increase in building height is to achieve more cubic volume for storage and would not intensify the land use such that there would be no change in the projected volume of water usage, sanitary discharge, or traffic generation that was evaluated in

the DEIS and FEIS. Regarding visual impacts, the increased setbacks in the front, side and rear yards combined with the reduced building coverage from that permitted, would reduce the massing and associated impact to the surrounding properties.

As noted above, the proposed design exceeds the maximum permitted impervious coverage by 5.51 percent in order to accommodate the perimeter driveways and loading areas for safe truck movements and activity. However, the proposed plan is below the maximum building coverage (Permitted: 40%; Proposed: 31.31%), exceeds the minimum landscape requirement (Required: 20% contiguous in front yard; Proposed: 23.15%), and provides for greater front, side and rear yard setbacks than what is required (Required Front, Side, and Rear Yards: 30 Feet, 60 Feet Combined, and 50 Feet, respectively; Proposed: 124.7 Feet, 221 Feet, and 195.2 Feet). The proposed buildings would be set back from the roadway and the use of generous landscaped buffers and open space is intended to preserve the rural appearance and minimize views into the property from Middle Country Road and adjacent parcels. All stormwater generation from a nine-inch rain event would be contained and recharged on-site through a system of drainage infrastructure, inclusive of a recharge basin in the rear of the property. Finally, the proposed development includes rooftop solar sized for a 3.245 MW solar array with an output of 2.4 MW to the community solar program.

Accordingly, the proposed variance would have no adverse impact on the physical or environmental conditions in this neighborhood or Ind C district.

5. ***Whether the alleged difficulty was self-created; which consideration shall be relevant to the decision of the board of appeals, but shall not necessarily preclude the granting of the area variance.***

As indicated in the DEIS, the Applicant's intent is an industrial warehouse development that responds to the industry demand for smaller and flexible spaces, loading space and docks, high ceilings, and larger drive-in doors. The proposed 30-foot ceiling height and top elevation of 38 feet constitutes a 26.6 percent relief, but the additional height is to meet an industry expectation for industrial development. The industry demand for greater interior clearance for warehouse storage and efficiency is well documented (see Attachment 1) and does not represent a building height that is not currently being developed across Long Island (see Attachment 2).

Regarding the impervious surface coverage, as noted in the DEIS, the site geometry requires a rather linear and symmetrical development plan that impacts the flexibility of design options for an intended light industrial park. Due to the type of development and the truck activity that would occur on-site, the separation of truck activity and driveways from the passenger vehicles is preferred for safety purposes. It is also noted that the Applicant has reduced the relief required from 11.07 percent to 5.51 percent.

While the variances are self-created, the resultant impacts are beneficial for attracting tenants for a viable development and on-site provides for safe movements through separation of trucks and vehicular traffic.

Overall, based on the above, the granting of the requested area variances would not be a detriment to the health, safety and welfare of the community.

Final Environmental Impact Statement
HK Ventures, LLC – Proposed Industrial Park
4285 Middle Country Road, Calverton, Town of Riverhead, NY

Area Variance Consistency Analysis

ATTACHMENT 1

Logistics MANAGEMENT

As e-commerce grows, so does the height of warehouses, says CBRE

In a client research brief, entitled: “Measuring Up: Why Cubic Feet Matter,” CBRE explained that large occupiers are more efficiently using warehouse and cubic space, which is resulting in increased building clearance heights, and has in turn, made measurement of cubic feet, or the “third dimension,” that much more important.

By Jeff Berman, Group News Editor · March 28, 2017

The phrase “things are looking up” may be an appropriate way to describe an ongoing shift towards the height and volume of warehouses and distribution centers, according to research released by commercial real estate firm CBRE.

In a client research brief, entitled: “Measuring Up: Why Cubic Feet Matter,” CBRE explained that large occupiers are more efficiently using warehouse and cubic space, which is resulting in increased building clearance heights, and has in turn, made measurement of cubic feet, or the “third dimension,” that much more important.

CBRE explained in the brief that taller warehouses exponentially increase the total volume of inventory available to occupiers, citing how:

since 2010, more than 8.8 billion cubic feet was added to the warehouse inventory of the top 10 markets;
the average height of warehouses built in the U.S. has gone up from around 24 feet in the 1960s to 32.4 feet this decade (33 feet in 2016); and
13.7 billion cubic square feet of warehouse space was built in the U.S. from 2010-2016, with 65 percent of that total coming in the ten largest markets, paced by the Inland Empire in California, Dallas/Fort Worth, and Chicago, whereas newly-built warehouses by ground-level floor area yields 422.5 million square feet
A major benefit of additional vertical warehouse space, according to CBRE, is that e-commerce providers have leveraged that space by installing mezzanine levels that allow these companies to bring on additional human inventory pickers in each location.

But it added that comes with the caveat that these mezzanine levels are not usually included in the measurements of a property’s or market’s industrial square footage, making measuring cubic feet likely the more efficient way of gauging the full extent of warehouse and DC space.

Blaine Kelley, Senior Vice President of Industrial & Logistics for CBRE, explained that the move towards taller warehouses and DCs has really accelerated since 2010, when the industry really began to show signs of recovery.

“Another aspect is that on a ‘big picture’ level we have been supply constrained since 2010, as essentially speculative warehouse construction came to a dead stop in 2007,” he said. “Since the recovery, we have had anywhere from a 1.5-to-2 times the amount of demand to supply.”

CBRE research showed that the average clearance for all warehouse properties CBRE has built has seen steady gains, rising from 30.19 feet in 2010 to 32.95 feet in 2016.

When asked about the increase the installation of mezzanine levels by e-commerce companies that enabled them to add more pickers, Kelley said that the point of demarcation for that goes back to around 2010.

“It really directly parallels the proliferation of e-commerce warehouses being constructed around the country,” he said.

As for the future, in terms of potential continued growth of warehouses and DCs, Kelley estimated that the “magic number” for height would be 40 feet for clearance height. Anything above that number, though, he said, can lead to possible architectural or structural issues, coupled with fire protection issues as well.

“Anything above that (40-foot) number is a totally different category, which is probably cost-prohibitive today with the average warehouse operator,” he said. “And the equipment used in these facilities like lift trucks and other materials handling equipment is very expensive and can be cost-prohibitive in a larger facility.”

On an industry level, Kelley said that one complaint he often hears is that the market is very supply-constrained, along with difficulties finding sites to densely populated areas, which is leading to buildings getting bigger and taller.

“This is to meet the needs of same-day and next-day online orders,” he said. “You need to have a much deeper warehouse inventory to meet that demand.”

CBRE Director of Research and Analysis Colin Yasukochi said the industry is now also seeing the beginning of multi-story warehouse development, which he said is very common in Asia, but not as much in the U.S., although they are starting to crop up in more dense and urban areas.

Kelley said that there are currently some urban redevelopment projects along those lines taking place in Seattle and parts of New Jersey, which are constrained space-wise but are very populated areas.

About the Author

Jeff Berman, Group News Editor

Jeff Berman is Group News Editor for *Logistics Management*, *Modern Materials Handling*, and *Supply Chain Management Review*. Jeff works and lives in Cape Elizabeth, Maine, where he covers all aspects of the supply chain, logistics, freight transportation, and materials handling sectors on a daily basis. Contact Jeff Berman (mailto:jberman@peerlessmedia.com)

Article Topics

CBRE (/topic/tag/CBRE) · E-commerce (/topic/tag/E-commerce) · Industrial Real Estate (/topic/tag/Industrial_Real_Estate) · All Topics (/topic/all)

Making the Case for a Cloud-based Transportation Management System (https://www.supplychain247.com/mtc/company/kuebix)

In this webcast, you'll learn how a combination of collaboration, visibility and capacity can position your company for success. Is you supply chain prepared for what happens next?

Learn more (https://www.supplychain247.com/mtc/company/kuebix)

Making the Case for Mobile Barcoding as a Data Collection Best Practice (https://www.supplychain247.com/mtc/company/rfgen)

In this webcast, you'll learn how mobile barcoding technology integrates data collection best practices and real-time automation for ERP inventory workflows.

Learn more (https://www.supplychain247.com/mtc/company/rfgen)

Making the Case for the Next-Generation of Global Supply Chain Leadership (https://www.supplychain247.com/mtc/company/caltech)

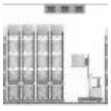
In this webcast, you'll learn how Caltech CTME's signature programs in growing the next-generation of talent can help global organization be resilient and ready.

Learn more (https://www.supplychain247.com/mtc/company/caltech)

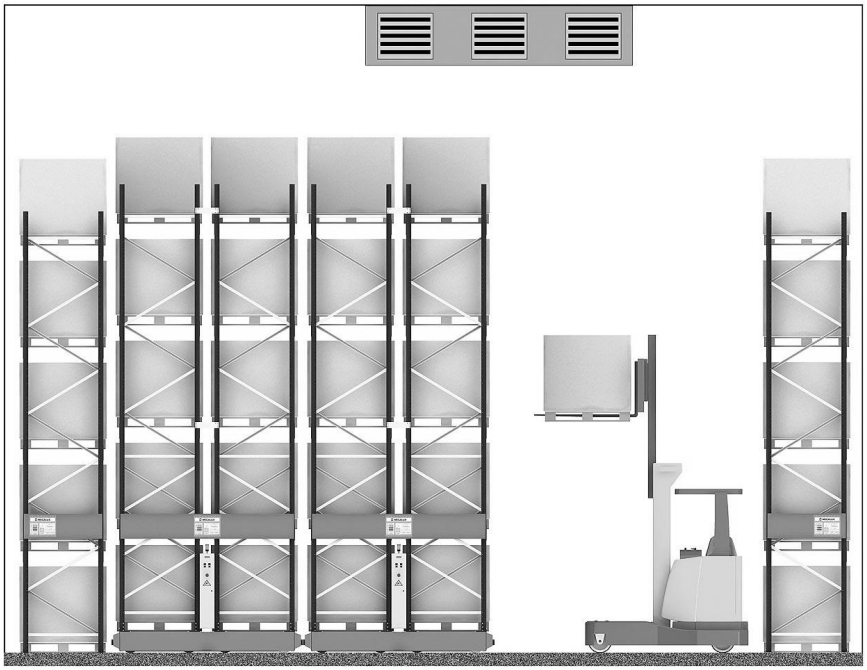
Moving to new heights? Understanding 36-foot clear height

Search...

Popular Recent



Moving to new heights? Understa 36-foot clear height



Increased demand for efficiency drives tenants to buildings with more clear height.

Source: Midwest Real Estate News, by Richard Prokup, Sr. VP, First Industrial Realty Trust

Over the last 30 years, the industrial real estate market has seen buildings grow taller to help high-volume tenants in their quest for increased warehouse efficiency. During the 1970s, most buildings were built with clear heights below 20 feet. As modern warehousing practices spread throughout the country, many tenants demanded more and more “cubic” space in their facilities – and buildings grew to 24-, 28- and 32-foot clear.

September 17th, 2018

Giving Old Buildings New Life By Increasin Clear Height

October 11th, 2018

Raise the Roof, Boost The Value

June 10th, 2021

Categories

- Buildings
- Construction
- e-commerce
- Logistics
- News
- Real Estate
- Roof Lifting

A building's clear height is defined as the usable height to which a tenant can store its product on racking. This figure is measured below any obstructions such as joists, lights or sprinklers. **The latest evolution is a move "upward" to 36-foot clear buildings,** particularly in high throughput distribution markets such as Southern California and Indianapolis.

Here we'll explore the efficiencies of a higher clear height, the costs and the potential tenant demand. The push to higher clear heights is based on the efficiencies of utilizing more cubic space. While the height of a pallet of goods varies, most logistics operators plan for pallet heights of 56, 64 or 72 inches. Since some airspace is required between the product and the next rack, this results in spacing between the racks of 64, 72 and 80 inches, respectively. By far, the most common pallet size is 64 inches, estimated to be used approximately 50 percent of the time. That means 32-foot clear facilities can rack between four and six pallets. In a building with 36-foot clear, a user will usually be able to rack one pallet position higher. Fifty-six inch pallets require 37 feet clear before they can gain another pallet position, but since industrial buildings are built with a sloping roof, even they will get an extra position under the portion of the roof that is elevated to allow for drainage.

Overall, users can increase capacity by 10 to 25 percent by going to 36-foot clear over the same footprint – resulting in a smaller floor area and lower overall rent. The cost of developing a building to the 36-foot height is more than just the cost of additional steel and higher tilt-up panels. A developer must upgrade the sprinkler

Recent Works

Tags

adaptive reuse
clear height
commercial real estate
cubic feet
e-commerce
e-commerce distribution center
food distribution
industrial
JLL
new jersey
New York
prologis
redevelopment
retail
roof lifting
roof raising
self storage
warehouses

system and floor thickness. Typically, in a 28- to 32-foot clear building, a developer would use a six-inch floor slab. To accommodate the additional weight of the racking and product associated with the extra clear height, eight inches of slab is recommended for 36 clear or above. A standard ESFR sprinkler system is sufficient for most products in the taller buildings, but the sprinkler heads must be upgraded to allow more water flow.

In addition, the column spacing must be increased in order to accommodate the slightly larger forklift trucks that are required to reach the higher pallet positions. Column spacing of 56 x 50 feet is typical for 36-foot clear. The increase in construction costs for 36-foot clear varies from market to market and building to building, but in rough terms, for a building 300,000 square feet and larger, the higher end of the range is approximately $1.25 per square foot. That breaks out as about 35 cents for structural, 45 cents for the slab and 45 cents for moving to a higher flow ESFR sprinkler head.

The more challenging question to answer is whether demand exists that justifies the additional costs associated with the higher clear, as the vast majority of industrial users do not require it. The answer at this point appears to be market-dependent. In Indianapolis, for example, several institutional investors have been using 36 feet as their standard. More than a dozen such buildings currently exist. The Indianapolis market has seen these assets get absorbed faster and at rents at the higher end of the market, compensating the developers for the additional investment.

In Los Angeles, a number of build-to-suit developments have been completed incorporating 36-foot clear and speculative

development has just begun. First industrial recently broke ground on the 555,670 square-foot First 36 Logistics Center @ Moreno Valley in Southern California's Inland Empire. First Industrial's decision to use the higher clear was based on demand in the market from prospective tenants specifically looking for that feature. Atlanta and Baltimore have seen a few speculative buildings at 36 clear, with mixed results on leasing success thus far. Demand for higher clear heights comes primarily from consumer products, retail users and especially e-commerce tenants. These types of users carefully research efficiencies in logistics and have grown to appreciate the savings associated with the additional cubic space. This is especially true of areas such as the Inland Empire in California, where average net rents trend well above national averages. Regardless, delivering an acceptable return to a developer on the additional $1.25 per square foot investment is certainly more cost effective to the tenant than increasing the size of its space by 10 to 25 percent.

As an added incentive for the developer, the types of tenants attracted to these buildings tend to be larger, more sophisticated tenants that can offer better financial strength and increased certainty of performance during the lease. Looking ahead, higher clear buildings may make sense in markets where users distribute over a larger geographic area, but, again, most industrial requirements don't call for the expanded height.

In Houston, where First Industrial is planning to break ground on a speculative development next year, the company is planning a 32-

foot clear building since growth in demand is being driven by smaller tenants serving that market.

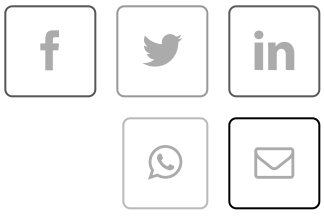
In Chicago, many tenants are delivering their product nationally or throughout the Midwest and buildings larger than 300,000 square feet are typical in many of the submarkets.

Therefore, given the efficiencies provided by 36-foot clear for a relatively small increase in construction costs, prudent developers will consider the alternative. As the Chicago market continues to tighten and speculative development becomes more prevalent, we will likely see the development of higher clear buildings that will keep the city on the cutting edge of warehousing and logistics.

Richard Prokup is Senior Vice President of Operations for First Industrial Realty Trust's Central Region, where he oversees asset management and operations for a 35 million-square-foot portfolio. Prokup has more than 25 years of commercial real estate experience.

September 17th, 2018 | Buildings, Construction, News, Real Estate, Roof Lifting

Share This Post With Others!



Related Posts

Raise the Roof, Boost The Value

June 10th, 2021 | 0 Comments

W

Apr

Specialists in providing clear height expansion solutions. We pride ourselves on delivering outstanding quality and design for leading clients across North America.

LEARN MORE

LATEST INSTAGRAM POSTS

rooflifters_official

Load More...

Follow on Instagram

LATEST TWEETS

ROOFLIFTERS
@rooflifters

Wishing you a holiday f
with joy and celebration

Jul 1

CONTACT US TODAY

1-866-331-6150

info@rooflifters.com

Monday - Friday: 8:00 AM - 6:00 PM EST

FOLLOW US

COPYRIGHT 2005 - 2018 | ROOFLIFTERS USA, LLC & ROOFLIFTERS CANADA, LTD | ALL RIGHTS RESERVED | PRIVACY POLICY

TRY OUR CORPORATE SOLUTION FOR FREE! (212) 419-8294 vianny.gutierrez-cruz@statista.com

Source: https://www.statista.com/statistics/947267/logistics-distribution-center-network-average-height-united-states/

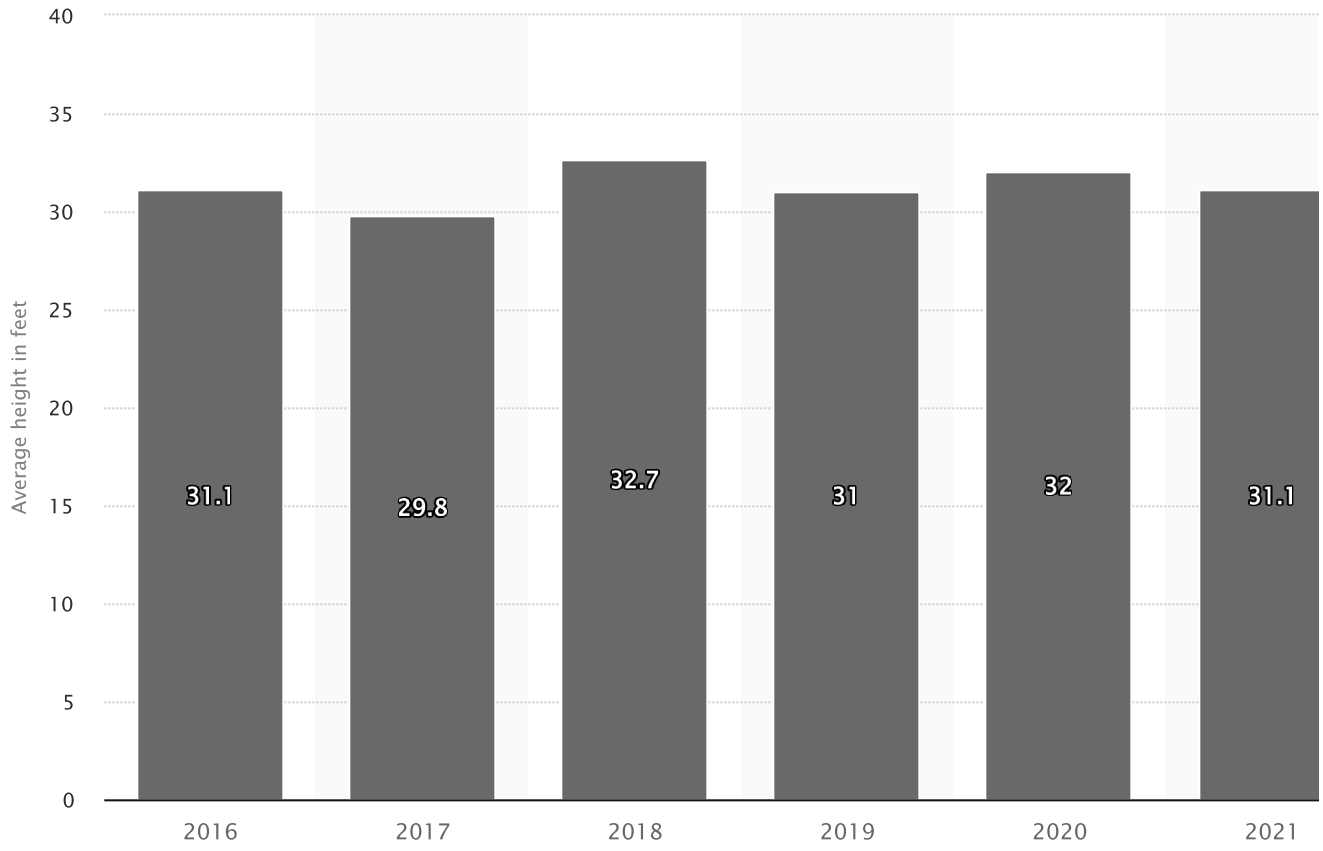
Average building height of distribution center networks in the U.S. 2016-2021

Published by E. Mazareanu , Nov 3, 2021

This statistic depicts the average clear height of buildings in distribution center networks of warehousing and logistics providers in the United States between 2016 and 2021. During the 2021 survey, the average building height was 31.1 feet.

Average height of buildings in distribution center networks of logistics and warehouse providers in the United States from 2016 to 2021

(in feet)



Additional Information

© Statista 2021

Show source

Sources

- → Show sources information
- → Show publisher information
- → Use Ask Statista Research Service

Release date

November 2021

Region

United States

Survey time period

2016 to 2021

Number of respondents

144 respondents

Special properties

professionals in logistics and warehouse operations management across multiple industries.

Supplementary notes

Method of survey not stated by the source.
Values prior to 2019 were taken from previous editions.
2016 baseline not provided by the source.
2017 baseline: 300
2018 baseline: 138
2019 baseline: 146
2020 baseline: 122

Final Environmental Impact Statement
HK Ventures, LLC – Proposed Industrial Park
4285 Middle Country Road, Calverton, Town of Riverhead, NY

Area Variance Consistency Analysis

ATTACHMENT 2

Hal Zwick
(631) 678-2460

Lee Minetree
(516) 729-7963

COMPASS

Building 1 | 1 Leecon Ct

2,500 SF of Industrial Space Available in Southampton, NY

FEATURES

Clear Height	**25' - 30'**	Standard Parking Spaces	**24**
Drive-In Bays	**12**		

ALL AVAILABLE SPACE(1)

SPACE	SIZE	TERM	RATE	SPACE USE	CONDITION	AVAILABLE
1st Floor	2,500 SF	Negotiable	$30.00 /SF/YR	Industrial	-	Now

PROPERTY OVERVIEW

2500 square foot C/I units for lease. 30' ceilings, garage door & regular entrances. Perfect condition. Great for contractors, storage, office, etc.
Convenient Southampton location - 1/3 mile off of County Road 39 / Route 27.

WAREHOUSE FACILITY FACTS

Building Size	**15,000 SF**	Year Built	**2009**
Lot Size	**2.80 AC**	Construction	**Metal**
Power Supply	**Amps: 200 Phase: 3**		
Zoning	**Light Industrial**		

TRANSPORTATION

COMMUTER RAIL

Southampton Station Commuter Rail (Montauk Branch) Long Island Rail Road	5 min drive	2.4 mi
Hampton Bays Station Commuter Rail (Montauk Branch) Long Island Rail Road	11 min drive	6.7 mi

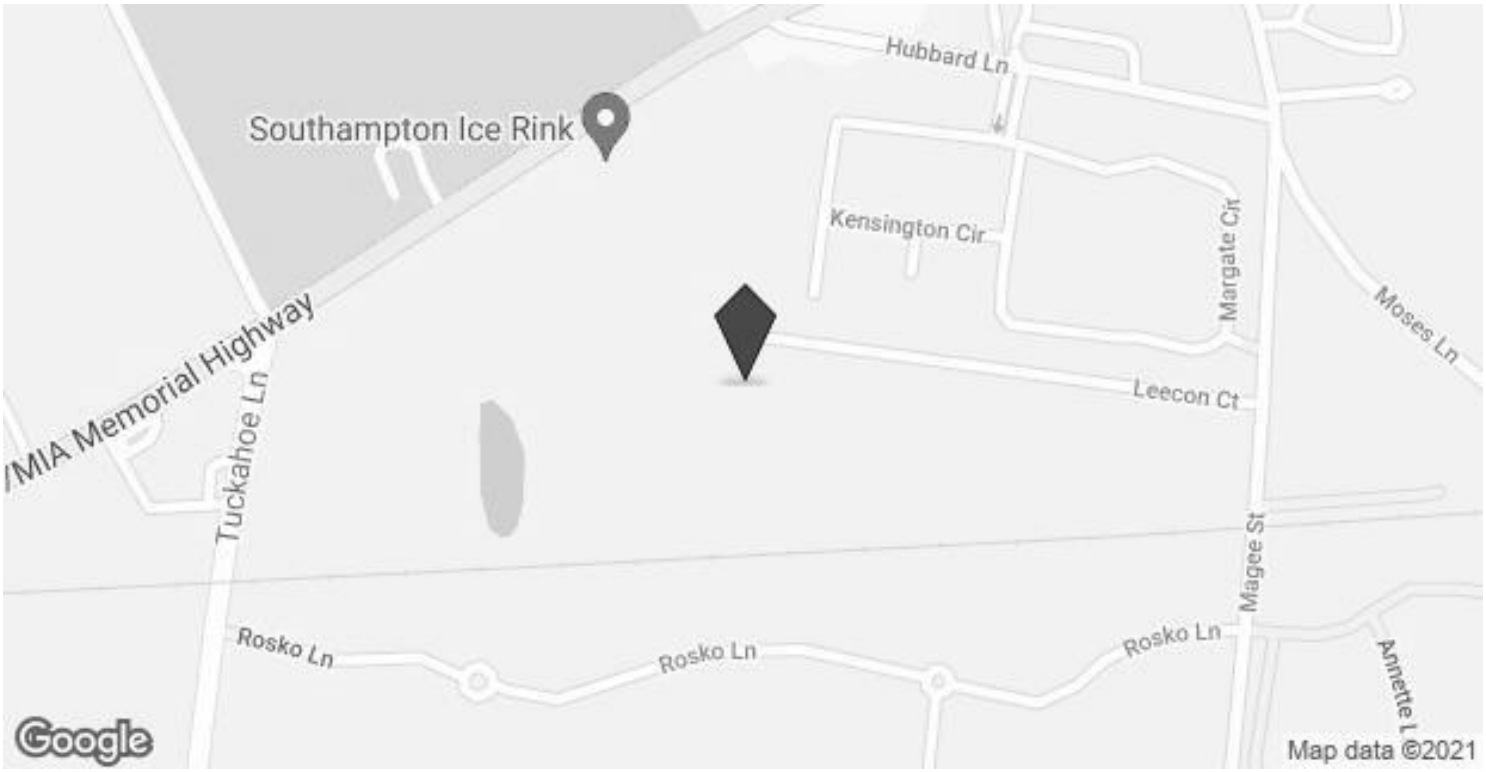
FREIGHT PORT

Port of Davisville, RI	222 min drive	112.3 mi

RAILROAD

TRANSFLO-NORTH HAVEN-CT	203 min drive	154.7 mi

MAP OF 1 LEECON CT SOUTHAMPTON, NY 11968



ADDITIONAL PHOTOS

Building Photo

Building Photo

Building Photo

Building Photo

Building Photo

Building Photo

Listing ID: 9356823 **Date Created:** 9/28/2017 **Last Updated:** 12/6/2021

Address: 1 Leecon Ct, Southampton, NY

The LoopNet service and information provided therein, while believed to be accurate, are provided "as is". LoopNet disclaims any and all representations, warranties, or guarantees of any kind.

158 CANDLEWOOD RD - INDUSTRIAL FOR RENT

Bay Shore, NY 11706 - North Bay Shore | 247,473 SF

631-962-2899

REQUEST INFO

1/2

VIEW MAP GET DIRECTIONS

Jan '22

RENTAL DETAILS

SPACE AVAILABLE	247,473 SF	**LEASE TYPE**	Negotiable
# OF SPACES	1	**LEASE LENGTH**	Negotiable
RENT RATE (MO)	Request Info for Rent	**AVAILABLE**	Jan 01, 2022
RENT RATE (YR)	Request Info for Rent		

BUILDING DETAILS

PROPERTY TYPE	Industrial	**CLEAR CEILING HT**	38 Ft
PROPERTY SUBTYPE	Warehouse	**DOCKS**	30
TOTAL BUILDING SIZE	247,473 SF	**DRIVE INS**	3
YEAR BUILT	2013	**PARKING SPACES**	96
UTILITIES	-		

LAND DETAILS

LAND ACRES	13.15 AC	**ZONING**	I-1
LAND SF	572,814 SF		

Copyright © 1997-2021 CoStar Realty Information, Inc.

195 SPAGNOLI RD - INDUSTRIAL FOR RENT

Melville, NY 11747 | 399,696 SF

844-364-4962

REQUEST INFO

1/5

VIEW MAP GET DIRECTIONS

Oct '22

HIGHLIGHTS

- Find two points of two-way ingress/egress, direct access to Route 110, and reach I-495 connectivity within a five-minute drive from the property.
- Property features include 66-loading docks with a unique cross-dock layout, 699 surface-level parking spaces, and nearly 14,000-SF of office space.

VIEW MORE

RENTAL DETAILS

SPACE AVAILABLE	399,696 SF	**LEASE TYPE**	Negotiable
# OF SPACES	1	**LEASE LENGTH**	Negotiable
RENT RATE (MO)	Request Info for Rent	**AVAILABLE**	Oct 01, 2022
RENT RATE (YR)	Request Info for Rent		

BUILDING DETAILS

STATUS	Under Construction	**CLEAR CEILING HT**	40 Ft
PROPERTY TYPE	Industrial	**DOCKS**	66
TOTAL BUILDING SIZE	399,696 SF	**DRIVE INS**	2
YEAR BUILT	2022	**PARKING SPACES**	741
UTILITIES	Sewer		

LAND DETAILS

LAND ACRES	31.68 AC	**LAND SF**	1,379,981 SF

ZONING	L1

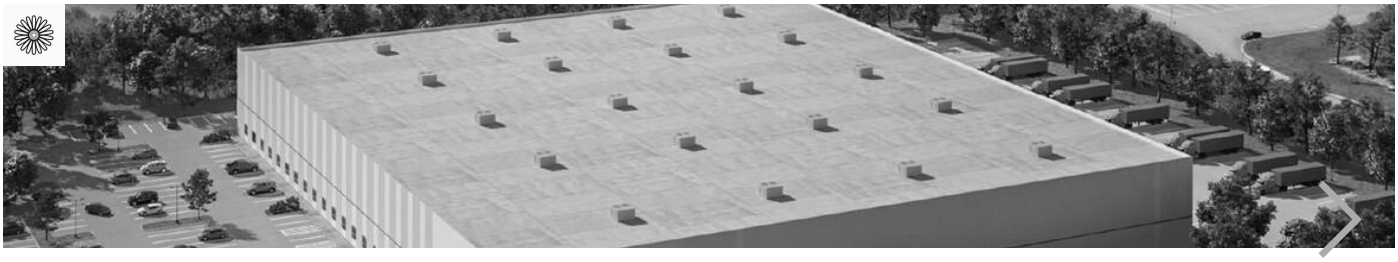
Copyright © 1997-2021 CoStar Realty Information, Inc.

645 NATIONAL BLVD - INDUSTRIAL FOR RENT

Medford, NY 11763 | 65,000-129,242 SF

844-568-0446

REQUEST INFO



1/1

VIEW MAP GET DIRECTIONS Jan '23

HIGHLIGHTS

- This proposed single-story warehouse building sits off a signalized intersection and features a logistics-oriented layout on a 10-acre site.
- Medford Logistics Center will offer Electric Vehicle Charging stations, provisions for future solar arrays, and high-efficiency MEP designs.
- Features will include 36' clear heights, 800 PSF floor loads, ESFR Sprinkler System, multiple drive-in bays, and a logistics-oriented site plan.
- In addition to the amenity-rich proposed facility, businesses may qualify for anticipated tax benefits from the Town of Brookhaven IDA.

VIEW MORE

RENTAL DETAILS

SPACE AVAILABLE	65,000-129,242 SF	**RENT RATE (YR)**	$20.00/SF/yr
# OF SPACES	1	**LEASE TYPE**	Triple Net
RENT/MONTH	$108,334+/mo	**LEASE LENGTH**	10 Years
RENT RATE (MO)	$1.67/SF/mo	**AVAILABLE**	Jan 01, 2023

BUILDING DETAILS

STATUS	Proposed	**UTILITIES**	-
PROPERTY TYPE	Industrial	**CLEAR CEILING HT**	36 Ft
PROPERTY SUBTYPE	Distribution	**DOCKS**	24
TOTAL BUILDING SIZE	129,242 SF	**DRIVE INS**	4
YEAR BUILT	2023	**PARKING SPACES**	222

LAND DETAILS

LAND ACRES	10 AC	**LAND SF**	435,600 SF

ZONING	Industrial

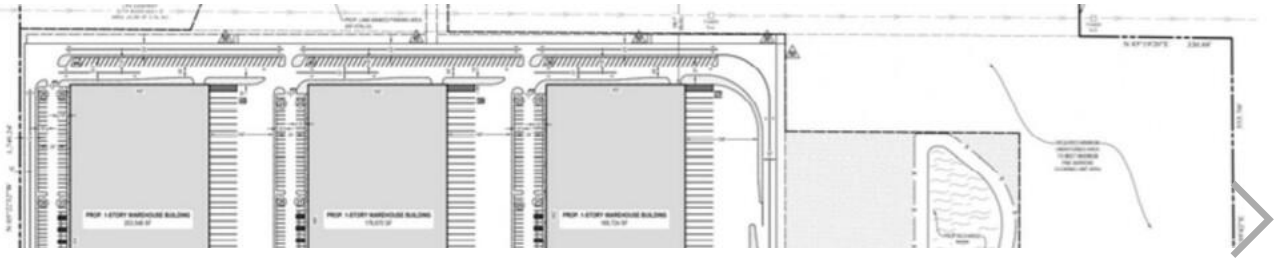
Copyright © 1997-2021 CoStar Realty Information, Inc.

LONG ISLAND EXPY @ SILLS RD - INDUSTRIAL FOR RENT

Medford, NY 11763 | 75,000-555,000 SF

844-566-2483

REQUEST INFO



1/3

VIEW MAP GET DIRECTIONS

Jan '23

HIGHLIGHTS

- Multiple configurations are possible based on business needs, ranging from a single 550k-square-foot building to multiple smaller warehouses.
- The center will include Electric Vehicle Charging stations, provisions for future solar arrays, and high-efficiency MEP designs.
- This proposed state-of-the-art development will feature 36’ clear heights, 800 PSF floor loads, ESFR sprinklers, and multiple drive-in bays.

VIEW MORE

RENTAL DETAILS

SPACE AVAILABLE	75,000-555,000 SF	**RENT RATE (YR)**	$20.00/SF/yr
# OF SPACES	1	**LEASE TYPE**	Triple Net
RENT/MONTH	$125,000+/mo	**LEASE LENGTH**	10 Years
RENT RATE (MO)	$1.67/SF/mo	**AVAILABLE**	Jan 01, 2023

BUILDING DETAILS

STATUS	Proposed	**UTILITIES**	-
PROPERTY TYPE	Industrial	**CLEAR CEILING HT**	36 Ft
PROPERTY SUBTYPE	Distribution	**DOCKS**	104
TOTAL BUILDING SIZE	555,000 SF	**DRIVE INS**	-
YEAR BUILT	2024	**PARKING SPACES**	1375

LAND DETAILS

LAND ACRES	71.41001 AC	**LAND SF**	3,110,620 SF

ZONING	Industrial

Copyright © 1997-2021 CoStar Realty Information, Inc.

N SERVICE RD - INDUSTRIAL FOR RENT

Medford, NY 11763 | 98,000-195,000 SF

631-962-2899

REQUEST INFO

1/2

VIEW MAP GET DIRECTIONS

RENTAL DETAILS

SPACE AVAILABLE	98,000-195,000 SF	**LEASE TYPE**	Negotiable
# OF SPACES	1	**LEASE LENGTH**	Negotiable
RENT RATE (MO)	Request Info for Rent	**AVAILABLE**	-
RENT RATE (YR)	Request Info for Rent		

BUILDING DETAILS

STATUS	Proposed	**UTILITIES**	-
PROPERTY TYPE	Industrial	**CLEAR CEILING HT**	36 Ft
PROPERTY SUBTYPE	Manufacturing	**DOCKS**	30
TOTAL BUILDING SIZE	195,000 SF	**DRIVE INS**	2
YEAR BUILT	2023	**PARKING SPACES**	-

LAND DETAILS

LAND ACRES	15.68999 AC	**ZONING**	-
LAND SF	683,456 SF		

Copyright © 1997-2021 CoStar Realty Information, Inc.

H2M architects + engineers
538 Broad Hollow Road, 4th Floor East
Melville, NY 11747 | tel 631.756.8000

July 29, 2021

Lawrence Crehan Jr.
Key Civil Engineering, P.C.
664 Blue Point Road, Unit B
Holtsville, NY 11742

Re: Riverhead Water District
Map and Plan for Water Extension No. 93 – HK Ventures, LLC
H2M Project No.: RDWD2051

Dear Mr. Crehan:

Attached please find the map and plan necessary to extend and provide water to meet the demand calculations prepared by the applicants engineering consultant.

If you have any questions regarding the enclosed, please feel free to contact our office.

Very truly yours,

H2M architects + engineers

John R. Collins, P.E.

JRC:neb

Enclosure

cc: Frank Mancini, P.G., MBA (RDWD)
Robin Halpin (RDWD)
Jaclyn Peranteau (Key Civil Engineering)

\\h2m.com\shares\Projects\RDWD (Riverhead Water District) - 10810\RDWD2051 - Ext No 93 - 4285 Middle Country Rd\00-Correspondence\Map and Plan Letterhead.docx

MAP & PLAN REPORT for

PROPOSED WATER DISTRICT
EXTENSION No. 93 – HK VENTURES LLC

4285 MIDDLE COUNTRY ROAD
CALVERTON, NEW YORK

Riverhead Water District
Town of Riverhead
Suffolk County, New York

H2M Project No.
RDWD2051

JULY 2021

Prepared for:

Town of Riverhead
200 Howell Avenue
Riverhead, New York 11901

Prepared by:

H2M architects + engineers
538 Broad Hollow Road, 4th Floor East
Melville, New York 11747

737 Roanoke Avenue
Riverhead, New York 11901

H 2 M architects + engineers

RIVERHEAD WATER DISTRICT

PROPOSED BOUNDARY & WATER MAIN EXTENSION No. 93

4285 MIDDLE COUNTRY ROAD, CALVERTON

TABLE OF CONTENTS

		PAGE NO.
0.0	EXECUTIVE SUMMARY	1
1.0	INTRODUCTION	1
2.0	PROPOSED DEVELOPMENT & EXTENSION AREA	
2.1	DESCRIPTION OF PROPOSED DEVELOPMENT	2
2.2	WATER USAGE OF DEVELOPMENT	3
2.3	HYDRAULIC EVALUATION	3
2.4	FACILITIES REQUIRED FOR DEVELOPMENT	7
3.0	WATER SYSTEM DESCRIPTION	
3.1	WELL FACILITIES	8
3.2	STORAGE FACILITIES	10
3.3	PRESSURE ZONES & BOOSTER FACILITIES	10
3.4	DISTRIBUTION SYSTEM	11
3.5	INTERCONNECTIONS	11
3.6	DISTRICT WATER QUALITY	12
3.7	PUMPAGE	14
3.8	ANALYSIS OF NEED	13
4.0	EVALUATION OF ALTERNATIVES	16
5.0	PROJECT JUSTIFICATION	17
6.0	PROJECT COSTS	19
7.0	STATE ENVIRONMENTAL QUALITY REVIEW	21
8.0	CONCLUSIONS & RECOMMENDATIONS	22

LIST OF EXHIBITS

EXHIBIT A KEY MAP – RIVERHEAD WATER DISTRICT

RIVERHEAD WATER DISTRICT

PROPOSED BOUNDARY & WATER MAIN EXTENSION No. 93

4285 MIDDLE COUNTRY ROAD, CALVERTON

TABLE OF CONTENTS

EXHIBIT B	PROPOSED EXTENSION AREA
EXHIBIT C	DESCRIPTION OF EXTENSION

APPENDIX

APPENDIX N.Y.S.D.E.C. APPLICATION

- USACE – JOINT APPLICATION
- NYSDEC – WATER WIHDRAWAL APPLICATION WW-1
- NYSDEC FULL EAF, PART 1
- 2020 NYSDEC MONTHLY REPORTING FORM

RIVERHEAD WATER DISTRICT
MAP & PLAN FOR PROPOSED EXTENSION NO. 93
4285 MIDDLE COUNTRY ROAD, CALVERTON
HK VENTURES LLC INDUSTRIAL PARK

JULY 2021

0.0 EXECUTIVE SUMMARY

The purpose of this plan is to gain approval of the Town Board, as governing body of the Riverhead Water District, hereinafter referred to as (Town) to extend the boundaries of the Riverhead Water District (District) to serve a parcel that exists entirely within the boundaries of the Town, but a portion lies outside the current boundaries of the District. The extension of the boundaries shall be at no cost to the Town or District and upon inclusion the property shall be assessed the appropriate District water tax. It has been determined that the most feasible and economical means of providing water to the development is through the District; however, the Town and District must continue to work towards strengthening the resiliency of and redundancy within its water system by adding new source and/or storage facilities to meet the demands and maintenance of capacity and infrastructure to meet existing demands of this development as well as other proposed development across the Town. To provide public water to this extension, the owners of the HK Ventures LLC industrial development will be subject to the fees outlined herein including capital improvements, Key Money Fees, and an increased tax rate on the property. The extension of the boundaries, subject to the mapping and implementation of the planning herein, shall nave no negative environmental impacts. Notwithstanding the aforesaid, the construction of the overall development shall be subject to the appropriate environmental review.

Agreement of the property Owner / Developer of the terms outlined here-in shall warrant issuance of water availability dependent on receipt of approval of all applicable regulatory agency reviews. This Map & Plan is based on Overall and Partial Sanitary & Utility Plan SSP2-C-13 through 17 prepared by Key Civil Engineering, P.C. and last dated June 3, 2020, and Engineers Report for On-Site Water Supply – HK Ventures LLC Industrial Park prepared by Key Civil Engineering, P.C. and dated July 2020. The District reserves the right to rescind this Map & Plan in the event of any changes to the layout of the development and/or the anticipated water demand.

1.0 INTRODUCTION

This report shall evaluate the proposal of extending the boundaries of the Riverhead Water District to permit public water to be provided to the proposed HK Ventures LLC Industrial Park, located on the south side of Middle Country Road (NYS Route 25) in Calverton. The developer of this property has petitioned the Town Board to allow the property to be served by the District. The property is partially located within the existing boundaries of the District, with approximately six acres fronting Middle Country Road and extending five hundred feet into the property located within the current boundaries of the District and currently being assessed a water tax, with the remaining twenty-four acres of the property,

located outside the current District boundaries. To provide water service to the unincorporated area of the property, a formal extension of the boundaries is required.

This boundary extension shall be presented to the Town for their consideration and upon formal approval, the balance of the subject property can be added and included to the boundaries of the District such that water may be extended to the property subject to appropriate adjustment of tax roll. Under New York State Department of Environmental Conservation (NYSDEC) under 6 NYCRR Part 601, certain extensions of public water supply systems require approval of the NYSDEC. This extension shall be submitted to the NYSDEC to mimic past practices, although it should be noted that:

1. The District does not propose to increase its overall approved source capacity of existing wells, nor does it propose to construct additional wells under this extension.
2. The proposed water usage associated with the boundary extension accounts for less than 100,000 gallons per day (gpd).

2.0 PROPOSED DEVELOPMENT & EXTENSION AREA

2.1 DESCRIPTION OF PROPOSED DEVELOPMENT

Proposed Extension No. 93 – 4285 Middle Country Road is located along the south side of Middle Country Road (NYS Route 25), approximately 200 feet east of its intersection with Fresh Pond Road. The property borders the former US Navy / Grumman NWIRP to the south, retail and mining operation to the west and agricultural land to the east. The property is designated as District 0600, Section 161, Block 1, Lot 2 on the Suffolk County Tax Map. The 30.28-acre property consists of open grass and wooded areas and is proposed to be developed into an industrial park containing eight buildings encompassing 422,464 square feet (sf) of warehouse / industrial space with a 1,500 sf commissary. The total extension area measures approximately twenty-four acres.

A location map of the subject property within the District is presented in Exhibit ‘A’ and ‘B’. A description of the proposed extension is presented in Exhibit ‘C’.

2.2 WATER USAGE OF DEVELOPMENT

Based on information provided by the owner, the proposed water usage of the facility is 20,873 gallons per day, (gpd) broken down as follows:

Use	Area (sf)	Occupants/ Seats	Consumption Rate	Water Use (gpd)
Industrial Space	422,464	----	0.04 gpd/sf (1)	16,899 (1)
Commissary	1,500	40 seats	0.04 gpd/sf + 2.5 gpd/seat	160
Irrigation	42,800	-----	1" / week	3,811
Total				20,870

(1) – Does not include process water

The water consumption rates presented above are based on Suffolk County Department of Health Services (SCDH) standards for minimum design sewage flow rates. Over the past ten years the annual average day pumpage has been 7.21 million gallons per day (MGD). Over the same period, the average maximum daily demand has been 19.68 MGD. This equates to an maximum day to average day ratio of 2.74. Using this factor, the anticipated peak domestic demand of the proposed development is 57,184 GPD. The calculated peak hour domestic demand is 306 GPM as per information provided by Owner in the aforementioned Water Supply Report. The development also requires an available fire sprinkler demand of 375 gallons per minute (GPM) for each building and a hydrant fire flow demand of 1,500 GPM with a 20 psi system residual.

In addition to the domestic and fire flow demands, the development will also require irrigation for the common areas. As per information provided by the Owners representative, the anticipated daily irrigation demand is 1,907 gpd at ½" of water coverage per week. This equates to an area of approximately 42,000 sf. In estimating irrigation demand, the District adheres to estimates from Cornell Cooperative Extension which estimates a 1" per week irrigation rate for Long Island communities. Therefore, the estimate daily water demand is 3,811 gallons per day. Assuming a 4-hour daily irrigation period, this equates to 16 gpm.

Therefore, the total peak water supply demand is 2,197 GPM (306 GPM + 375 GPM + 1,500 GPM + 16 GPM).

2.3 HYDRAULIC EVALUATION

To ascertain the effect the proposed development will have upon the District's existing distribution system, an analysis utilizing a computerized hydraulic model of the District was utilized. The hydraulic model was created with the intent to form an accurate representation of the District's water supply and distribution system. The model can be used to simulate various conditions and modifications to a water

supply and distribution system. The results of the simulations can then be used to evaluate the impact added demands have upon the system or the effectiveness of implementing modifications without actually constructing the modifications. For this evaluation, the model was used to simulate the effect proposed demands (domestic and fire) associated with the development will have upon the system and to predict pressures and operating conditions, and the corresponding impacts of the various modifications.

The evaluation consisted of analyzing the existing District in the vicinity of the subject development, under the following conditions:

- historical peak demand conditions applied across District,
- only a single well at Plant No. 11 available for use as per NYSDEC regulations,
- the largest facility (Well No. 16 – Edwards Ave.) out of service as per AWWA standards,
- no consideration of emergency interconnect support,
- to mimic the layout of the development, a Development Node was created within the model connecting to the existing distribution mains of the District via two 8-inch water lines. The effects of meters and backflow on flow were not considered.

The first step in the analysis was to create a baseline for which to compare projected analysis to. Under the baseline scenario, the existing distribution model was reviewed without any demand from the proposed development applied. This provides a baseline to compare the effects the HK Ventures Development will have upon the current distribution system. Under peak day demands, key points in the high zone and the area surrounding the community were reviewed to assess the potential affect the development will have under peak demand.

The results predicted for the baseline scenario from the model are as follows:

Baseline Simulation:

Point	Address	Baseline Pressure at peak demand period (psi)
1	Route 25 Frontage of Site	72
2	Timber Drive (west on 25)	72
3	Edwards Ave. (east on 25)	83
4	Sound Ave. (north)	62

(Well No. 11-2, 16-1 not in service)

The baseline scenario shows the anticipated static working pressure in the vicinity of the proposed development is approximately 72 psi. As distribution systems are dynamic, the expected working pressure may vary dependent on storage tank levels, pump operations or demand patterns.

The next step in the analysis to gauge the effects the proposed development will have upon the existing distribution system under Peak demand and fire flow scenarios. To gauge the effect of these scenarios within the model a Development Node was created. To measure the impact of the peak

domestic demand, the Development Node was assigned a demand of 322 gpm. This represents the anticipated peak domestic and irrigation demand of the industrial development upon full build out. The model was then run and the pressure at the same points within distribution were reviewed to assess the affect the development will have under peak demand conditions. The results predicted from the model are as follows:

Peak Demand Simulation:

Point	Address	Pressure at Peak Demand period (psi)	Δ (psi)
1	Route 25 Frontage of Site	68	4
2	Timber Drive (west on 25)	68	4
3	Edwards Ave. (east on 25)	80	3
4	Sound Ave. (north)	60	2

(Well No. 11-2, 16-1, and Dogwood Dr. out of service)

The hydraulic model predicts the added domestic demand of the subject development alone will have a slight impact (static pressure drops of 2 – 4 psi) on the existing distribution system under peak demand conditions.

The next analysis was a fire demand analysis. This analysis was performed to ascertain if the existing distribution system could handle an 1,875 gpm three-hour fire flow demand. The fire flow demand was assigned to the Development Node. Note, domestic and irrigation demand was assumed to be negligible under a three-hour fire demand. The model was then re-run to assess the effects of a fireflow demand on the system under peak demand conditions. The results predicted from the model are as follows:

Fireflow Simulation (largest facility out of service):

Point	Address	Pressure at peak demand period (psi)	Δ (psi)
1	Route 25 Frontage of Site	**16**	52
2	Timber Drive	**18**	50
3	Edwards Avenue	35	45
4	Sound Avenue	27	33

(Well No. 11-2 and 16-1 out of service)

The hydraulic model predicts, residual pressures in the vicinity of the development will drop considerably under the predicted fireflow demand with pressures within the system falling below 20-psi. It should be noted that the Development Node with the assigned fireflow demand showed a negative pressure, indicating that an 1,875 gpm fire flow is not attainable under the model conditions. Note TSSWW (Section 8.2.1) requires that a distribution system maintain a 20-psi residual at all points of the system under all flow conditions.

When a new high pressure zone well was added to the simulation, results of the fire demand analysis were as follows:

Fireflow Simulation (additional high well):

Point	Address	Pressure at peak demand period (psi)	Δ (psi)
1	Route 25 Frontage of Site	36	32
2	Timber Drive	41	27
3	Edwards Avenue	58	22
4	Sound Avenue	47	13

With the availability of an additional well facility the impact of a fireflow on the remainder of the system is improved with a 20-psi residual maintained throughout the distribution system and the system is more capable of producing an 1,875 gpm fire flow under the remaining model conditions. Conversely, in lieu of new source supply, a boosted storage tank would provide the same effects on the fireflow simulation.

As per the regulations that govern water suppliers, the District must consider the impact that any increased water demand would have upon the existing distribution system with its largest facility out of service. This secondary Fireflow Simulation shows that with its largest facility out of service a prolonged fireflow event will have a negative impact on the existing distribution facility. To alleviate this negative impact and provide service to the proposed development, a new supply well or storage facility will need to be constructed. The supply well shall be a minimum of 1,000 gallons per minute to supplement existing supply. The storage tank shall be a minimum of 400,000 gallons to account for the projected fireflow over a three-hour duration as well as assume an 80% useable capacity.

The peak day, fire sprinkler and hydrant demand were provided by the developer as outlined in the Engineers Report for On-site Water Supply, prepared by Key Civil Engineering and dated July 2020. For the purpose of any analysis performed within this report, a needed fire flow of 1,875 gpm (1,500 gpm hydrant + 375 gpm sprinkler) was used.

The proposed HK Ventures, LLC Industrial Park will require approximately 9,074 gallons per day (gpd) for phase 1 and an additional 7,886 gpd for phase 2; in total the development will require 20,873 gpd for domestic and irrigation usage upon full build out.

While the District is actively pursuing potential supply well sites with the high-pressure zone, this potential well would serve to meet the existing demands of the District and not the future demands represented by this extension.

2.4 FACILITIES REQUIRED FOR DEVELOPMENT

The proposed HK Ventures Industrial Park property is situated adjacent to the District's high-pressure zone. Under average day demands, the District maintains a static working pressure of approximately 90 psi along Middle Country Road in the vicinity of the proposed development. Based on the elevations across the site, the pressure gradient of the high-pressure zone and the proximity of the site to high zone facilities, we estimate the water pressure in the development to vary between 80 psi and 90 psi during average demand periods and as shown in previous section during peak demand and fireflow conditions.

As shown, the current water system will be stressed to provide adequate fire protection to the site under peak demand periods. To enable the District to meet these fireflow demands, the District can either 1) develop additional source in the form of a new well or 2) construct additional storage to satisfy the fire flow demand. For this project, due to the fact that the District is only in the preliminary stages of their well site investigation, the uncertainty of locating a second site and the duration required to go from site selection to completed works for a new well, the most feasible option is to construct additional storage. as it is quicker to implement; and a boosted storage tank helps the instantaneous demand of a fire flow event as opposed to a new source well which would better serve a continuous demand such as domestic, process or irrigation. The developer shall provide the Town / District shall help fund the development of new storage facilities to meet the demands of this development.

In addition, the developer proposes to service the eight buildings through a private water main loop encompassing approximately 5,500 feet of water main and hydrants. Each building will be provided fire and domestic service from this private loop. To serve the private water main loop, the development will require two 8-inch metered connections with backflow prevention devices located with vaults at the property line near Middle Country Road. These 8-inch services will connect to an existing 12-inch high zone District water main located within the Middle Country Road right-of-way with appropriate valving. All water main and hydrants within the proposed development will be installed, owned and maintained by the developer.

3.0 WATER SYSTEM DESCRIPTION

The District is located on the eastern end of Long Island, Suffolk County, New York. The District is bounded on the north by the Long Island Sound, on the east by the Town of Southold, on the south by the Peconic River, Flanders Bay and the Towns of Southampton and Brookhaven, and on the west by the Town of Brookhaven. Exhibit 'A' indicates the District service area within the Town of Riverhead.

The District supplies potable water to a population of approximately 35,000 through 12,328 residential and commercial services in the Riverhead, Aquebogue, Jamesport, Baiting Hollow, Calverton, Northville, Wading River, and portions of Manorville areas throughout the Town of Riverhead. The District also supplies wholesale water service to the SCWA along Peconic Bay Boulevard to provide

service to homes in the Town of Southold. Although the District lies in the Town of Riverhead, the entirety of the Town is not within the Water District boundaries. Portions of the Town consisting mainly of farmland and the remote areas of Manorville, are not included within the District boundaries, and therefore are not assessed an annual water tax. These properties do not receive potable water service from the District.

The District covers an area of approximately 44.3 square miles. The topography of the District can generally be classified as flat with some hills. Elevations in the area average in the range from 20 feet above mean sea level (AMSL) at Plant Nos. 1, 2, and 5, to 125 feet AMSL in the area of the shoreline bluffs in the northern parts of the District. The extreme elevations are 5 feet AMSL at the shores to 263 feet AMSL at the highest point in Wading River.

3.1 WELL FACILITIES

Water supply for the District is currently obtained from sixteen active groundwater wells located at nine plant sites scattered throughout the service area. The sixteen active wells have a combined NYSDEC approved pumping capacity of 17,220 GPM, or 24.88 MGD, however the combined actual capacity available to the District is only 13,930 GPM or 20.06 MGD due the following limitations:

- Well Nos. 11-1 and 11-2 have a shared capacity of 1,380 GPM as regulated by the NYSDEC. The capacities of the wells are limited due to NYSDEC concerns of negative impacts on the groundwater table and nearby waterbodies. It is the intent of the District to have these restrictions lifted, however until the restrictions are lifted, The District is required to operate in accordance with the permit requirement. There is no timeframe on the relaxing of these NYSDEC stipulations. Even when stipulations are lifted, the District still requires an additional well to meet is peak demand periods.
- Well No. 12-1 is kept in compliance with regulatory monitoring requirements, however, is not permitted to be pumped to system by the NYSDEC due to environmental concerns. The well was last utilized to supplement system in July of 2012. There is no timeframe on its return to service.
- Well No. 16 is restricted by capacity of the perchlorate treatment system. Although the well is permitted for 2,380 GPM, the perchlorate filter is sized to treat 1,600 GPM.
- Well No. 17 is voluntarily restricted by the presence of chlorides in the well product due to suspected lateral saltwater intrusion. The NYSDEC has set a maximum chloride level of 65 ppm on Well No. 17. The District has reduced production from this well to 500 GPM to meet NYSDEC guidelines.
- The District has received approval to increase the capacity and deepen Well No. 2, however this work is not expected to commence until Fall of 2021. Due to the

deteriorating condition of the existing screen, the actual pumpage capacity of the current well is limited to below 900 GPM.

The location and description of the existing wells are summarized on the following table:

WELL NO.	LOCATION	ZONE	AUTHORIZED CAPACITY (MGD)	ACTUAL CAPACITY (MGD)
1A	Pulaski St	Low	1.44	1.44
2	Pulaski St	Low	1.72	1.29
3A	Pulaski St	Low	1.44	1.44
4-1	Osborne Ave	Low	1.44	1.44
4-2	Osborne Ave	Low	1.73	1.73
5-1	Middle Rd	Low	1.73	1.73
5-2(A)	Middle Rd	Low	1.44	1.44
7-2	Fresh Pond Ave	High	1.73	1.73
7-3	Fresh Pond Ave	High	1.73	1.73
11-1	Route 25	High	1.99	1.99
11-2	Route 25	High	1.99	
12-1	Grumman Blvd	High	0.00	0.00
15-1	Tuthill's Ln	Low	0.36	0.36
15-2	Tuthill's Ln	Low	0.36	0.36
15-3	Tuthill's Ln	Low	0.36	0.36
16	Edwards Ave	High	3.43	2.30
17	Northville Tpke	Low	1.99	0.72
Total			24.88	20.06

3.2 STORAGE FACILITIES

The District maintains and operates two elevated steel storage tanks, two ground storage tank, and two standpipes. The total storage capacity of all tanks is 6.24 million gallons with 4.41 million gallons in the low-pressure zone and 1.83 million gallons in the high-pressure zone. The Plant No. 10 tank has the ability to float on the low-pressure zone while maintaining ability to pump to the high-pressure zone. These District storage tanks are described on the following table:

TANK NO.	LOCATION	STYLE	CAPACITY (MG)	ZONE SERVED
1	Pulaski Street	Elevated	0.16	Low
3	Route 58	Elevated	0.75	Low
8	Baiting Hollow	Standpipe	1.00	High
9	Wading River	Standpipe	0.83	High
10	Sound Shore Road	Ground	1.50	Low
15	Tuthill Rd	Ground	2.00	Low
	Total Capacity		6.24	

3.3 PRESSURE ZONES & BOOSTER FACILITIES

Due to the extreme changes in gradient across the service area, the District operates within two separate pressure zones. The lower gradient zone is in the central and southeasterly portion of the District and includes the Riverhead Business District, the Middle Road area, Aquebogue, and Jamesport. The higher gradient zone consists of the areas located in Wading River, Calverton, Baiting Hollow, and areas north of Sound Avenue. There is also a third, separate small service area of regulated pressure in the higher elevations of Wading River and an additional seasonal regulated pressure area is created in higher elevations within Roanoke Hills. Both areas are fed from the higher gradient zone.

The low zone is supplied water from a total of eleven (11) supply wells:1A, 2, 3A, 4-1, 4-2, 5-1, 5-2A, 15-1, 15-2, 15-3 and 17. The low zone also contains four storage tanks; Route 58, Pulaski Street, Plant No. 10 and Plant No. 15. Due to its elevation, the storage tank at Plant No. 10 can act as an elevated storage tank and serve the low zone by floating on system pressure. This tank can also service the high zone by way of booster pumps. The high zone is supplied water from five (5) supply wells: 7-2, 7-3, 11-1, 11-2, and 16. The low zone supply capacity is 12.31 MGD with a storage capacity of 4.40 MG. The high zone supply capacity is 7.75 MGD with a storage capacity of 1.83 MG.

The District also maintains booster stations at Plants 6, 8, 9, 10, 13, 14, 15 and 18 to help transmit water throughout the District, including transmitting water from low to high pressure zone and aid in maintaining adequate pressure during periods of high demand. The District also maintains hydraulic

control valves at Edwards Avenue, Deep Hole Road, Reeves Avenue and Pier Avenue to dump water from the high to low pressure zones.

3.4 DISTRIBUTION SYSTEM

The water distribution system consists of water main sized from 2-inches to 24-inches in diameter and is constructed of mostly cast iron and ductile iron pipe. Since 1965, all iron mains that have been installed are cement lined cast iron or cement lined ductile iron. PVC mains make up a portion of the District distribution system as well. These were mainly installed in the 1980s in the Reeves Park area. The District currently maintains approximately 236 miles of water main within the distribution system.

3.5 INTERCONNECTIONS

The Riverhead Water District currently maintains four interconnections with the Suffolk County Water Authority (SCWA). Two interconnections allow water to be received from SCWA, and two allow water to be supplied to SCWA. All have checks, which allows flow to move in only one direction through each interconnection. All four interconnections are metered.

The size and location of each interconnection is shown on following table:

SUPPLIER	LOCATION	CAPACITY (MGD)	ZONE SERVED
SCWA to Riverhead WD	Dogwood Drive	1.15	High
	Meroke Trail	0.72	High
Riverhead WD to SCWA	West Main Street	0.72	Low
	Peconic Bay Blvd.	1.08	Low

The District receives water from SCWA through their Dogwood Drive interconnection which is routinely used to aid in meeting peak demand as well as supply the standpipe at Plant No. 9. Both interconnections are located at the Town line between Riverhead and Brookhaven. The District supplies water to the SCWA through the Peconic Bay Boulevard interconnection located at the town line with Southold. The SCWA boosts water from this interconnection to supplement its demand needs in the Town of Southold. The West Main Street interconnection supplies the Riverside Water District (operated by the SCWA), however is seldom utilized.

In periods of peak demand, the District utilizes the Dogwood Drive and Meroke Trail interconnection with SCWA to supplement its capacity. The Dogwood Drive pump station has the capacity to provide an additional 800 GPM (1.15 MGD) to the District's high zone. The Meroke Trail interconnect has the capacity to provide an additional 500 GPM (0.72 MGD) to the District's high zone. The total interconnect capacity available to the District is 1.87 MGD. The District provides up to 750 GPM (1.0 MGD) to the SCWA at the Southold Town line.

3.6 DISTRICT WATER QUALITY

In general water quality found beneath the Town is exceptionally good with a few exceptions. These exceptions are the results of the historical application of fertilizers, the application of increasing amounts of pesticides and herbicides, septic system and naturally occurring elements. In addition, there has been a dramatic improvement in the ability to test for even more minute concentrations of pollutants. The continuing improvement of analytical equipment combined with ongoing research of hazardous drinking water contaminants has resulted in the incorporation of organic compounds, inorganic compounds, radioactive compounds, perfluorinated compounds, and various other compounds into current drinking water standards.

Based on routine sampling data the raw water from the active District supply wells can be generally characterized as:

1) Corrosive with a relatively low pH in the range of 5.8 to 7.1. The District presently uses lime for pH adjustment with a resulting target pH of 7.5.

2) Manganese levels ranged from non-detect to 0.32 mg/L in 2020. One well, (Well No. 5-1) has historically exceeded the MCL of 0.3 mg/L for manganese. Manganese is naturally occurring in the aquifer.

3) Arsenic levels ranged from non-detect to 5.7 µg/l in 2020. The MCL for arsenic is 10.0 µg/l. Well Nos. 1A, 2 and 3A have the highest levels of arsenic within the District. Arsenic is naturally occurring in the aquifer but is also linked to the application of fertilizers.

4) Iron levels ranged from non-detect to 0.99 mg/L in 2020. Two supply wells, Well Nos. 2 and 4-2, exceeded the MCL of 0.3 mg/L for dissolved iron. The District presently uses a blended polyphosphate for sequestration at all wells. Iron is naturally occurring in the aquifer.

5) Variable in hardness, ranging from 9.2 mg/L to 77 mg/L in 2020. Hardness levels ranging from 0 mg/L to 60 mg/L characterizes the water as “soft” while the levels from 61 mg/L to 120 mg/L characterizes the water as “moderately hard.”

6) Nitrate concentrations within the District are considered low to moderate with a District average of 2.3 mg/L. Only two wells are at or slightly above 5.0 mg/L, including Well Nos. 5-1 and 16. Historically, wastes generated by over-fertilization and septic systems have resulted in nitrate and other contaminants being released directly into the aquifer system.

7) Perchlorate concentrations have been non-detect in all but two of the District’s wells. The maximum perchlorate concentration in the raw water at Well No. 16 was 10.8 µg/l in 2020. The maximum perchlorate concentration in the raw water at Well No. 17 was 2.8 µg/l. Perchlorate contamination is suspected to be residual from years of fertilizer application.

8) Historically the District has had no detections of VOCs, with the exception of Well No. 16 which has periodically had detections of 1,2,3-trichloropropane, a known soil fumigant. Maximum detection levels were 1.3 µg/l in 2020.

9) Chloride levels in the District range from 4.7 mg/L to 45.4 mg/L in 2020. In May of 2015, the chloride level in Well No. 17-1 had a maximum detection of 279 mg/L. The chloride levels in this well have been reduced through controlled pumping of the well. In 2020, the maximum chloride level in Well No. 17 was 28.7 mg/l.

10) The District has been testing for 1,4 dioxane from all wells on an annual basis. Detections have occurred at Well No. 5-1 (0.094 µg/l), 5-2A (0.073 µg/l) and Well No. 12-1 (0.027 µg/l). All other wells were non-detect. New York State has adopted an MCL for 1,4 dioxane at 1.0 µg/l.

11) The District has also been testing for six (6) perfluorinated compounds including PFOS and PFOA. Detections of PFOS and PFOA occurred at both Well No. 5-1 (15.9 & 8.4 ng/l, respectively) and 5-2A (3.3 & 2.6 ng/l respectively). Trace levels of three other perfluorinated compounds were also detected. New York State has adopted an MCL for PFOS and PFOA of 10 ng/l individually. This MCL of 10 ng/l has placed Well No. 5-1 in jeopardy and will require future treatment. All other wells were non-detect.

3.7 PUMPAGE

The following table shows that the District has an average annual production of 2,640.5 million gallons from 2010 through 2020, with a maximum peak demand over the ten-year period of 22.53 MG occurring in 2010. Over the selected period, production has generally remained steady. It is expected that annual production will remain steady over next few years. Although the Town continues to see an increase in commercial and residential development across the District, the District has realized effects of recent water conservation initiatives, such as meter replacements, rate increases, and community reach out.

YEAR	TOTAL ANNUAL PUMPAGE (MG)	AVERAGE DAY (MGD)	MAXIMUM DAY (MGD)
2010	2,834.0	7.76	**22.53**
2012	2,424.9	6.64	22.20
2012	2,604.5	7.14	19.67
2013	2,635.1	7.22	20.52
2014	2,645.9	7.25	17.50
2015	3,037.4	**8.32**	19.70

2016	2,876.8	7.88	20.36
2017	2,380.3	6.52	16.33
2018	2,437.4	6.68	18.69
2019	2,494.1	6.83	18.91
2020	2,674.8	7.33	20.11

The per capita consumption rates for average day based on 2020 data is 209 gallons per day per capita. The per capita consumption rates for peak day based on 2020 data is 575 gallons per day per capita.

The Town of Riverhead has experienced a steady increase in development over the past decade, particularly along the Route 58 corridor. Based on pending water availability requests, key money assessments and site plan application provided to the District, the trend of commercial development will continue to grow, not only along Route 58 but within downtown Riverhead and Calverton. In addition, residential development is expected to increase, however with fewer single-family residences in favor of clustered living in the form of apartments and townhomes. Based on current applications to the Town and requests for water availability received by the District, the estimated average day demand of future projects is estimated to be 245,000 gallons per day (GPD) (0.245 MGD). Using a max-day to average-day ratio of 2.74, the projected peak day demand associated with these developments is approximately 671,000 gpd (0.68 MGD).

3.8 ANALYSIS OF NEED

It is important to plan based on estimates of overall water supply that will be consistently available. To determine the base water supply availability for the District, a combination of accepted guidelines is used. One of these guidelines is the Recommended Standards for Water Works of the Great Lakes Upper Mississippi River Board of State Public Health & Environmental Managers, which is most often referred to as the Ten States Standards. The District must comply with the Ten States Standards for Water Works (TSSWW) since they are included as part of the New York State Sanitary Code Part 5, Drinking Water Standards. A second guide used is American Water Works Association (AWWA) Manual M31, Distribution Requirements for Fire Protection.

Regulatory standards state that the District should maintain enough system capacity to meet or exceed the maximum day demand with the largest producing well out of service (Section 3.2.1.1 of the TSSWW). The largest producing facility is Plant No. 16 with a current capacity of 2.3 MGD. From Section 3.1, the available capacity from all District wells is 20.06 MGD, thus the total available capacity with the largest storage well out of service is 17.76 MGD (20.06 MGD – 2.3 MGD).

Using these standards, the ability of the District to meet the current and future demands can be analyzed including:

a) Average day - Average daily demand represents the total yearly pumpage uniformly distributed or averaged over the entire calendar year. This statistic provides a basis of forecasting estimated revenues for budgetary purposes and is utilized in long-range water resources planning with respect to safe yield.

b) Maximum day - Maximum day pumpage statistics are reviewed to evaluate available supply well capacity with one major well out of service. Maximum day statistics include water supplied to other purveyors and water storage tank recovery.

c) Maximum day plus fire flow - Maximum day plus fire flow demand is used to analyze combined supply well and storage facility capacity requirements. Maximum day plus fire flow assumes an 1,875 gallons per minute (GPM) fire flow for a duration of three hours.

d) Maximum day plus future demand - Maximum Day plus future demand statistics are reviewed to evaluate available supply well capacity with one major well out of service for future planning. In this case, future demand is assumed to equal the potential overall demand of this extension assuming full build out and does not account for future supply or storage facilities.

The results of the analyses are depicted below. Note, available capacity from neighboring suppliers is not included in this analysis, although water sold to neighboring suppliers is accounted for. The analysis can be summarized as follows:

Average Daily Demand (ADD):

- A maximum daily demand of 8.32 MGD occurred in 2015 and represents the highest ADD since 2000.
- With its current source capacity and under 2015 ADD, a source surplus of 9.44 MGD is realized.
- The District maintains 17.90 MGD available with back-up power.
- The District can adequately meet the ADD of the proposed HK Ventures Development.

Maximum Day Demand (MDD):

- A maximum peak daily demand of 22.53 MGD occurred in 2010 and represents the highest MDD since 2000.
- With its current source capacity and under 2010 MDD and its largest facility out of service, the District would realize a source deficit of 4.77 MGD. This deficit may be overcome if storage is accounted for.

Maximum Day + Fireflow (MDFF):

- A MDFF of 22.87 MGD is used representing maximum day demand from 2010 plus a fire flow of 1,875 GPM for a three-hour duration (0.34 million gallons).
- The District will continue to operate in a supply deficit under a fireflow demand during peak demand periods. To meet this demand, the District must rely on storage, however with a total available storage capacity of 6.24 million gallons and assuming a useable tank capacity of 80%, the District would realize a deficit even when considering storage

Maximum Day + Future Demand (MDFD):

- As stated, the projected future domestic and irrigation demand of the HK Ventures Development is estimated at 57,184 GPD.
- A MDFD demand of 23.10 MGD is utilized representing maximum day demand from 2010 plus the current estimated future maximum daily demand.
- With its current source capacity, its largest facility out of service and under 2010 maximum day demands, a source deficit of 5.35 MGD is realized. To meet this demand, the District must rely on storage, however with a total available storage capacity of 6.24 million gallons and assuming a useable tank capacity of 80%, the District would realize a deficit even when considering storage.

The demand analysis shows:

- The District operates with a surplus during ADD situations without reliance on storage and can adequately meet the projected the demands of Extension No. 93.
- The District operates within a source deficit during historical MDD when without their largest well, however this deficit can be overcome by relying on storage facilities.
- The District operates under a deficit during MDFF and MDFD situations without its largest well. Storage will help to reduce these deficits but not completely overcome them. To fully overcome the projected deficits, additional supply or storage is needed.

4.0 EVALUATION OF ALTERNATIVES

The proposed action consists of the extension of the existing District boundaries to include the subject property. Approval of the extension will allow the Town of Riverhead to assess Water District taxes on the property and provide service to the proposed development. Alternatives to the proposed action are as follows:

- Denial the boundary extension and access to public water, thereby forcing the Town and County to deny approval of the development.

- Denial the boundary extension and access to public water, opening up the potential of the creation of a Non-Transient, Non-Community water suppler with private wells.
- Provide water service from alternate water supplier.

5.0 PROJECT JUSTIFICATION

In accordance with NYSDEC 6 NYCRR 601.10(k):

1) Why the proposed project was selected from the evaluated alternatives;

- If serviced by the District, the property should be assessed all applicable taxes in order that the property can share in current and future bond expenses that may be required to fund capital projects.
- The establishment of a non-transient, non-community water system would be discouraged by both NYSDEC and Suffolk County Department of Health due to stricter regulations and increasing susceptibility of wells to contamination. Reliance on a public water supply with trained operators will ensure a safe and reliable source of water.
- The most feasible source of providing public water and fire protection to this development is the Riverhead Water District with the closest facilities of alternates suppliers being located approximately four miles from the site.

2) Why increased water conservation or efficiency measures cannot negate or reduce the need for the proposed water withdrawals;

- Under this extension the District does not propose to increase their existing permitted withdrawal from existing wells. The District has implemented many actions under the umbrella of Water Conservation and the proposed withdrawal associated with supplying water to this development will have a smaller impact as compared to the impact it would have had 5 or 10 years ago. Measures include but are not limited to:

  i. Implementation of a meter replacement program. Since 2015 all large meters including those of its top water users have been replaced. The District typically replaces approximately one thousand residential meters a year, however this number was reduced during 2020 as the District focuses on installing updated meter reading software which will allow for easier account audits.

  ii. Completed ultrasonic leak detection on the entirety of the District service area and addressed all leaks.

  iii. Replaced older in-plant flow meters or installed new measuring gauges.

  iv. Continue to stress Water Conservation in newsletters.

v. Raised water rates in 2016 and again in 2020.

vi. Working with other Town departments to implement smart controller requirements on all automatic irrigation systems.

vii. For the proposed HK ventures development, the District will work with other Town Departments and the Owner to ensure water conservation criteria are evaluated including the use of water saving / low flow fixtures, periodic leak detection surveys on private water main, and installation of smart controller on irrigation take-offs.

3) *Why the proposed water withdrawal quantity is reasonable for the proposed use;*

- Water usage estimates for the development are based off the Suffolk County Department of Health Standards and in accordance with engineering estimates. The District does not propose increasing the approved capacity of existing wells to meet these predicted demands.

4) *Why the proposed water conservation measures are environmentally sound and economically feasible:*

- There are no proposed added water conservation measures associated with this extension application. Properties hooking up to the District will be subject to the current District rate structure for water used. The District will continue to stress Conservation efforts to its consumers as well as institute Water Conservation measures including continued annual water meter replacements.

- To reduce the impact of the development on the District facilities, the District could require the irrigated areas to be fed through a private well. Based on the predicted irrigation demand, the District is not requiring this option.

5) *Whether the proposed water supply is adequate;*

- As shown in Section 3.8, the District will experience deficits in its supply during Maximum Day periods when considering the future or fire flow demands of the proposed development with its largest facility out of service. In order to provide service, additional supply in the form of new well or new storage will need to be constructed. In addition, the Diostrict will work to strengthen its system by other means such as continuing to investigate permit modifications at Plant No. 11 and development of Well No. 2A.

6) *Whether the proposed project is just and equitable to other municipalities and their inhabitants in regards to present and future needs for sources of potable water;*

- The extension of District boundaries and the potential supply of potable water to the proposed development will have no effect on the sources of water for other municipalities or their inhabitants.

7) *Whether the proposed withdrawal will result in no significant individual or cumulative adverse environmental impact;*

- See Section 7.0. The proposed withdrawal will result in no significant individual or cumulative adverse impacts. The extension of the boundaries is performed in order to bring the current lots within the taxable District boundaries and requires no adverse construction or implementation effects on surrounding areas or the quality of water. The actual construction of the development will be subject to review to ascertain the impacts on the environment if any.

8) *Whether the proposed withdrawal will be consistent with all applicable municipal, State and Federal laws as well as regional and interstate and international agreements.*

- To the best of our knowledge, the proposed withdrawal will be consistent with all applicable municipal State and Federal laws as well as regional and international agreements.

6.0 PROJECT COSTS

The total cost of this extension is to be borne by the developer with no costs associated with installation of water facilities to provide service to Extension No. 93 borne by the Town or District. Applicable costs shall include the following:

1. Construction of a new 0.4 million gallon storage facility
2. Extension of water service lines from existing distribution main to property.
3. Key Money Fees applicable to all developments

As shown, to meet the projected demands of this development, the District must fortify its existing system with a new boosted storage tank. As the main concern in the demand analysis is providing adequate fireflow, the appropriate installation is a ground storage tank supporting a three-hour fire flow of 1,875 gpm. The estimated cost to install a 400,000-gallon prestressed concrete ground storage tank with a dual booster pump system located in a small masonry building including piping, electric, site preparation, engineering, permitting, legal and contingencies is $2,600,000. The facility will require the dedication of a minimum two-acre parcel. This land shall be dedicated within Phase 1 of the development with access to District facilities of Route 25. The District will also consider construction of the facility on Town owned property at an alternate location within the high-pressure zone, but near to the development as possible if land is not available within the development. The facility will be owned, constructed, and operated by the District.

An estimated cost of a 0.4 MG storage tank is summarized below:

ITEM	ESTIMATED COST
0.4 Million Gallon Concrete Tank	$ 1,100,000
Booster Pump System, Piping and Valves	$ 150,000
Masonry Pump House & Foundation (approx. 30' x 20')	$ 250,000
Site Work (Drainage, Fencing, Paving & Landscape)	$ 100,000
Electrical Work incl. new service	$ 400,000
Construction Subtotal:	**$ 2,000,000**
Engineering Services (15%)	$ 300,000
Legal & Administrative (7%)	$ 140,000
Contingencies (8% of construction cost)	$ 160,000
Estimated Project Cost:	**$ 2,600,000**

To provide service to the proposed private main within the development, two 8-inch service connections with meters located in below grade vaults will be required. The estimated cost to install two new 8-inch service stubs under the District's current maintenance contract is $111,000 including meter in pit, connection to existing main, restoration and contingencies. The facilities within the development, including hydrants and backflow are proposed to be private. Note, the installation of water facilities within the public right-of-way will be performed by a District employed contractor.

ITEM	ESTIMATED COST
8" service connection Stub w/ Meter & Vault (2 units @ $36,000/connection)	$ 72,000
Additional 12" Valves at Connection (4 units @ $1,000/valve)	$ 4,000
NYS Composite Road Restoration (50 SY @ $ 400/sy)	$ 16,000
Additional MPT Requirements – Attenuator Truck (3 days @ $1,500/day)	$ 4,500
Construction Subtotal:	**$ 96,500**
Legal & Administrative (7%)	$ 6,800
Contingencies (8% of construction cost)	$ 7,700
Estimated Project Cost:	**$ 111,000**

In addition to the costs of the water main installation as described, the property will also be subject to Key Money Fees. The Key Money Fee is a Town policy established in 1986 (Section 199 of the Town Code) whereas all developments are assessed based on their projected water and sewerage usage. The purpose is to cover the cost of increasing the system capacity. System capacity includes

transmission, new wells, pumps, treatment and storage. The fee is applied to all new development and where a change in use is proposed.

From Section 2.1, the total projected daily water demand of Extension No. 93 is 20,870 GPD. Using the Riverhead Water District Key Money Assessment Method, this development shall be assessed a Key Money Fee of $9.10 per gallon. Therefore, the total Key Money Fees for the proposed development is $189,917 (20,870 GPD x $9.10 / gallon). It should be noted that the water usage associated with the industrial space is for density loading only. It does not consider the potential for kitchen, gray or process loading. If in the future specific tenants require water for these uses, the space will be subject to additional Key Money Fees. The District will re-assess these incidences on a case-by-case basis and reassess accordingly.

Section 2.3 shows that under historical peak day demands, the existing water system is insufficient to meet the requested development fire flow demand of 1,875 gpm, when considering their largest source facility out of service, without causing pressure within the system to fall below a 20 psi residual. As regulation forces the District to consider their needs analysis with their largest facility out of service and maintain a working pressure of 20 psi at all times, the District must develop new sources to support the fire flow of this development. As such, the District will require the developer of HK Ventures to fund a new storage tank in the high gradient zone which would have direct influence over this extension.

Once annexed into the Water District boundaries, the property will be assessed annual District taxes based on the standard District tax rate.

7.0 STATE ENVIRONMENTAL QUALITY REVIEW (SEQR)

In New York State, most projects or activities proposed by a state agency or unit of local government require an environmental impact assessment as prescribed by 6 NYCRR Part 617 State Environmental Quality Review (SEQR). This project, the extension of the boundaries of a Special District to encompass a disenfranchised area, is considered an Unlisted Action and is therefore not subject to further review as the extension of a district boundary is one that is not included in statewide or individual agency lists of Type I or Type II actions. Furthermore, in accordance with Section 617.5.c.13, the physical extension of utility distribution facilities, including water connections to render service in approved subdivisions; is considered a Type II action and not subject to further review.

8.0 CONCLUSIONS & RECOMMENDATIONS

After reviewing the information presented, the following conclusions can be drawn:

A. The Riverhead Water District has been requested to provide domestic water and fire protection to a proposed eight building industrial development located on Middle Country Road in Calverton. A portion of this property is located outside of the boundaries of current Water District.

B. The proposed development will require an estimated total of 20,870 gallons per day for average day domestic, an estimated 58,000 for peak day usage and a required fire flow of 1,875 gallons per minute.

C. The hydraulic analysis shows:

- In review of the projected average day domestic demands of this extension, only a minimal impact on pressure will be seen within the existing distribution system.
- The District cannot meet the projected peak day demands of this extension while relying on well capacity alone and must rely on storage, existing and new to meet these demands.
- Under a three-hour fireflow, the District will not be capable of meeting the projected fire flow demands of the extension with its largest facility out of service and under historical peak demand.
- These deficiencies in meeting the fire flow demand can be rectified with the availability of additional storage facilities.

D. The demand analysis shows:

- The District can meet the average daily demands of this development,
- Under maximum daily demands plus the projected demands of this development, the District must rely on storage in addition to its sources. This is true for when the Districts largest facility is not available.
- Under peak daily demands plus fire flow, the District would realize a supply deficit even when considering storage.
- Under maximum daily demands plus estimated future demands, the District would realize a supply deficit even when considering storage.
- The District does not have the facilities in place to meet the requested demands of this development.

E. The most feasible, safe, and economical way to provide water service and fire protection to this extension is through the Riverhead Water District.

F. The property owner will be responsible for all costs associated with the construction of a 0.4 MG concrete ground storage tank at an estimated cost of $2,600,000.

G. The property owner will be responsible for all costs associated with the installation of all water facilities to and within the development. It is estimated that the cost to bring two 8-inch metered water services to the property line of the development is $111,000.

H. The development will be subject to Key Money Fees of $189,917 for the proposed industrial space, commissary and irrigation needs.

I. Upon approval of the Town Board, the property will be incorporated into the boundaries of the Water District and assessed appropriately.

J. The proposed extension of the District boundaries will not have a significant adverse impact on the environment and is considered an Unlisted Action requiring no further review.

After reviewing the facts presented above, it is recommended that the Town Board accept this Map and Plan report for Extension No. 93 and proceed with scheduling a Public Hearing. Once approved by the Town Board, the properties can be added to the appropriate tax rolls and the properties provided service upon and water will be available to the HK Ventures Development upon agreement to the stipulations presented here-in and upon acceptance of this application by the NYSDEC.

EXHIBITS

A - KEY MAP - RIVERHEAD WATER DISTRICT

B - PROPOSED EXTENSION AREA

C - DESCRIPTION OF EXTENSION

N

W E

S

1 inch = 2,700 feet

Proposed Extension Area No. 93

Exhibit A: Riverhead Water District with Proposed Extension

Legend

- Extension Boundary Proposal No. 93
- Town Boundary
- Riverhead Water District Boundary
- Parcels

Fresh Pond Avenue

Middle Country Road

Middle Country Road

Point of Beginning

Proposed HK Ventures, LLC
Idustrial Park
11600
0100
002000

Peconic Avenue

Suffolk County

09700 0100 020000
09700 0100 007000
09700 0100 008000
09700 0100 019000
09700 0100 009000
09700 0100 018000
09700 0100 010000
09700 0100 011000
09700 0100 016000
09700 0100 015000
09700 0100 012000
09700 0100 014000
09700 0100 013000
09700 0200 011000
09700 0200 012000
09700 0200 013000
09700 0200 014000
09700 0200 015000
09700 0200 016002
09700 0200 016001
09700 0200 017000
09700 0200 018000
09700 0200 019000
09700 0200 020000
09700 0200 027000
09700 0200 028000
09700 0200 029000
09700 0200 030000
09700 0200 031000
09700 0200 032000
09700 0200 033000
09700 0200 034000
09700 0200 035000
09700 0200 036000
09700 0200 037000
09800 0100 026000
09800 0100 025000
09800 0100 001001
09800 0100 003003
09800 0100 003002
09800 0100 022000
09800 0100 004000
09800 0100 005000
09800 0100 006000
09800 0100 024000
09800 0100 007000
09800 0100 008000
09800 0100 010000
09800 0100 011000
09800 0100 020000
09800 0100 023000
09800 0100 016005
09800 0100 014000
09800 0100 016003
09800 0100 019000
09800 0100 013000
09800 0100 012000
09800 0100 015000
09800 0100 016002
11600 0100 002000
11600 0100 003001
11600 0100 007004
11600 0100 001001
11600 0100 007005
13500 0100 007004
13500 0100 007033
Proposed Calverton Industrial Subdivision
(Town of Riverhead Owned)

N
W
E
S

1 inch = 200 feet

Legend

- Proposed Valves
- Proposed 8" Mains
- Existing Fire Hydrants

Existing Water Mains

- 4"
- 6"
- 8"
- 10"
- 12" / 14"
- 16" / 18"
- Parcels
- Extension Boundary Proposal No. 93
- Riverhead Water District Boundary
- High Zone 1
- High Zone 2
- Low Zone
- Seasonal High Zone
- Riverhead Town Boundary

Exhibit B: Extension Area

EXHIBIT 'C'

RIVERHEAD WATER DISTRICT

PROPOSED BOUNDARY & WATER MAIN EXTENSION No. 93

4285 MIDDLE COUNTRY ROAD, CALVERTON

DESCRIPTION OF EXTENSION

APRIL 2021

Parcel A, comprised of this certain lot, parcel of land, said property being known as District 0600, Section 116, Block 01, Lot 2.0 situated and lying and being at Calverton, Town of Riverhead, County of Suffolk, and State of New York, bounded and described as follows:

BEGINNING at a point 500 feet south of the southerly right-of-way line of Middle Country Road on the westerly property line of District 0600, Section 116, Block 01, Lot 2.0. Said point being the **POINT OF BEGINNING**.

From said **POINT OF BEGINNING**, running south along the westerly property line of District 0600, Section 116, Block 01, Lot 2.0, a distance of 2,110 feet to the southwesterly corner of the aforementioned property.

THENCE, running east along the southerly property line of District 0600, Section 116, Block 01, Lot 2.0, a distance of approximately 515 feet to the southeasterly corner of the aforementioned property.

THENCE, running north along the easterly property line of District 0600, Section 116, Block 01, Lot 2.0, a distance of approximately 2,003 feet to a point 500 south of the southerly right-of-way line of Middle Country Road.

THENCE, running west through the lands of District 0600, Section 116, Block 01, Lot 2.0, along a line 500 feet south of and parallel to the southerly right-of-way line of Middle Country Road, a distance of approximately 515 feet, to a point on the westerly property line of the aforementioned property. Said point being the aforementioned **POINT OF BEGINNING.**

END OF DESCRIPTION

APPENDIX

NEW YORK STATE DEPT. OF ENVIRONMENTAL CONSERVATION APPLICATION

- **USACE JOINT APPLICATION FORM**
- **NYSDEC WATER WITHDRAWAL APPLICATION**
- **NYSDEC FULL EAF, PART 1**
- **2020 DEC MONTHLY PUMPAGE REPORTING FORM**

NEW YORK STATE | Department of Environmental Conservation | Office of General Services | Department of State

US Army Corps of Engineers

JOINT APPLICATION FORM

For Permits for activities activities affecting streams, waterways, waterbodies, wetlands, coastal areas, sources of water, and endangered and threatened species.

You must separately apply for and obtain Permits from each involved agency before starting work. Please read all instructions.

1. **Applications To:**

>NYS Department of Environmental Conservation ☑ Check here to confirm you sent this form to NYSDEC.

Check all permits that apply:

- ☐ Stream Disturbance
- ☐ Excavation and Fill in Navigable Waters
- ☐ Docks, Moorings or Platforms
- ☐ Dams and Impoundment Structures
- ☐ 401 Water Quality Certification
- ☐ Freshwater Wetlands
- ☐ Tidal Wetlands
- ☐ Wild, Scenic and Recreational Rivers
- ☐ Coastal Erosion Management
- ☑ Water Withdrawal
- ☐ Long Island Well
- ☐ Incidental Take of Endangered / Threatened Species

>US Army Corps of Engineers ☐ Check here to confirm you sent this form to USACE.

Check all permits that apply: ☐ Section 404 Clean Water Act ☐ Section 10 Rivers and Harbors Act

Is the project Federally funded? ☐ Yes ☑ No

If yes, name of Federal Agency:

General Permit Type(s), if known:

Preconstruction Notification: ☐ Yes ☑ No

>NYS Office of General Services ☐ Check here to confirm you sent this form to NYSOGS.

Check all permits that apply:

- ☐ State Owned Lands Under Water
- ☐ Utility Easement (pipelines, conduits, cables, etc.)
- ☐ Docks, Moorings or Platforms

>NYS Department of State ☐ Check here to confirm you sent this form to NYSDOS.

Check if this applies: ☐ Coastal Consistency Concurrence

2. **Name of Applicant**

Riverhead Water District

Taxpayer ID (if applicant is NOT an individual): 11-6001935

Mailing Address: 1035 Pulaski Street

Post Office / City: Riverhead

State: NY

Zip: 11901

Telephone: 631-727-3205

Email: fmancini@townofriverheadny.gov

Applicant Must be (check all that apply): ☑ Owner ☐ Operator ☐ Lessee

3. **Name of Property Owner (if different than Applicant)**

HK Ventures, LLC

Mailing Address: 6500 Rock Spring Drive, Suite 5

Post Office / City: Bethesda

State: MD

Zip: 20817

Telephone: 301-493-9236

Email:

For Agency Use Only	Agency Application Number:

4. **Name of Contact / Agent**

John R. Collins, P.E.

Mailing Address	Post Office / City	State	Zip
538 Broad Hollow Road, 4th Floor East	Melville	NY	11747

Telephone 634-756-8000 x 1357 Email jcollins@h2m.com

5. **Project / Facility Name**

Extension No. 93

Property Tax Map Section / Block / Lot Number: Section 116, Block 1, Lot 2.0

Project Street Address, if applicable	Post Office / City	State	Zip
4285 Middle Country Road	Calverton	NY	11933

Provide directions and distances to roads, intersections, bridges and bodies of water

Approximately 5,000 linear feet east of intersection with County Route 25A

☑ Town ☐ Village ☐ City

County	Stream/Waterbody Name
Suffolk	n/a

Riverhead

Project Location Coordinates: Enter Latitude and Longitude in degrees, minutes, seconds:

Latitude: 40 ° 55 ' 41 " Longitude: 72 ° 46 ' 19.4 "

6. **Project Description:** Provide the following information about your project. Continue each response and provide any additional information on other pages. **Attach plans on separate pages.**

a. Purpose of the proposed project:

Extend the boundaries of the Riverhead Water District to include SCTM District 600, Section 166, Block 1, Lot 2.0 . The Water District does not propose to increase the permitted well capacity / withdrawal of the District wells.

b. Description of current site conditions:

Rural with residential and commercial structures and/or wooded or partially wooded

c. Proposed site changes:

none

d. Type of structures and fill materials to be installed, and quantity of materials to be used (e.g., square feet of coverage, cubic yards of fill material, structures below ordinary/mean high water, etc.):

No fill will be imported. Spoils from pie trench will be utilized to backfill trench.

e. Area of excavation or dredging, volume of material to be removed, location of dredged material placement:

none

f. Is tree cutting or clearing proposed? ☐ Yes If Yes, explain below. ☑ No

Timing of the proposed cutting or clearing (month/year):

Number of trees to be cut: Acreage of trees to be cleared:

g. Work methods and type of equipment to be used:

Trenching utilizing excavators

h. Describe the planned sequence of activities:

Approval by Town Board & NYSDEC, Town Assessor adds to tax rolls, project funded, and installed. Private property owner to hire plumber to perform water service connection on private property at their leisure.

i. Pollution control methods and other actions proposed to mitigate environmental impacts:

Silt fence along road edge in susceptible areas. No open trench excavations overnight.

j. Erosion and silt control methods that will be used to prevent water quality impacts:

See above

k. Alternatives considered to avoid regulated areas. If no feasible alternatives exist, explain how the project will minimize impacts:

Where wetlands or bog material encountered, piping proposed to be installed with trenchless construction

l. Proposed use: ☐ Private ☑ Public ☐ Commercial

m. Proposed Start Date: TBD Estimated Completion Date: TBD

n. Has work begun on project? ☐ Yes If Yes, explain below. ☑ No

o. Will project occupy Federal, State, or Municipal Land? ☐ Yes If Yes, explain below. ☑ No

p. List any previous DEC, USACE, OGS or DOS Permit / Application numbers for activities at this location:

n/a

q. Will this project require additional Federal, State, or Local authorizations, including zoning changes?

☐ Yes If Yes, list below. ☑ No

7. **Signatures.**
Applicant and Owner (If different) must sign the application.
Append additional pages of this Signature section if there are multiple Applicants, Owners or Contact/Agents.

I hereby affirm that information provided on this form and all attachments submitted herewith is true to the best of my knowledge and belief.

Permission to Inspect - I hereby consent to Agency inspection of the project site and adjacent property areas. Agency staff may enter the property without notice between 7:00 am and 7:00 pm, Monday - Friday. Inspection may occur without the owner, applicant or agent present. If the property is posted with "keep out" signs or fenced with an unlocked gate, Agency staff may still enter the property. Agency staff may take measurements, analyze site physical characteristics, take soil and vegetation samples, sketch and photograph the site. I understand that failure to give this consent may result in denial of the permit(s) sought by this application.

False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the NYS Penal Law. Further, the applicant accepts full responsibility for all damage, direct or indirect, of whatever nature, and by whomever suffered, arising out of the project described herein and agrees to indemnify and save harmless the State from suits, actions, damages and costs of every name and description resulting from said project. In addition, Federal Law, 18 U.S.C., Section 1001 provides for a fine of not more than $10,000 or imprisonment for not more than 5 years, or both where an applicant knowingly and willingly falsifies, conceals, or covers up a material fact; or knowingly makes or uses a false, fictitious or fraudulent statement.

Signature of Applicant | Date

Applicant Must be (check all that apply): ☑ Owner ☐ Operator ☐ Lessee

Printed Name: Frank Mancini | Title: Superintendent of Water

Signature of Owner (if different than Applicant) | Date

Printed Name: Frank Mancini | Title: Superintendent of Water

Signature of Contact / Agent | Date

Printed Name: John Collins, P.E. | Title: Asst Vice President

For Agency Use Only **DETERMINATION OF NO PERMIT REQUIRED**

Agency Application Number

(Agency Name) has determined that No Permit is required from this Agency for the project described in this application.

Agency Representative:

Printed Name | Title

Signature | Date

New York State Department of Environmental Conservation

Water Withdrawal Application Supplement WW-1

Pursuant to 6 NYCRR Part 601: http://www.dec.ny.gov/regs/4445.html

READ THE INSTRUCTIONS ON PAGE 2 BEFORE COMPLETING THIS FORM

May 2013

FOR DEPARTMENT USE ONLY

Application No.

WWA Number

1. APPLICANT NAME Riverhead Water District

2. FACILITY NAME Extension No. 93 - 4285 Middle Country Road

3. PROJECT TYPE

- ☐ Water Withdrawal
- ☑ New Public Water Supply Service Area or Extension
- ☐ Land Acquisition for Public Water Supply
- ☐ Change in Use of Existing Water Withdrawal

4. WATER USE TYPE

- ☑ Public Water Supply
- ☐ Bottled/Bulk Water
- ☐ Commercial
- ☐ Cooling
- ☐ Industrial
- ☐ Institutional
- ☐ Mine Dewatering
- ☐ Oil/Gas Production
- ☐ Power Production
- ☐ Recreational
- ☐ Other:

5. WITHDRAWAL TYPE ☑ Existing ☐ New

If this is an existing public water supply, provide the most recent WSA or WWA Number:

If other than public water supply, list other existiing or pending related DEC permits (e.g., SPDES, Mining, Dam):

6. WATER WITHDRAWAL SOURCE

- ☐ Surface Water — Water Body Name(s): Magothy Aquifer
- ☑ Groundwater — Nearest Surface Water Body: Long Island Sound — Distance From Well (in feet): 10,500

7. WATER SUPPLY TO OTHER STATES Does this project involve the transport of any fresh water of NYS through pipes, conduits, ditches or canals to any other state?

☑ No ☐ Yes, describe:

8. TRANSPORTATION OF WATER BY VESSEL Does this project involve the transport by vessel of more than 10,000 gallons per day of surface water? (Excludes ballast water necessary for normal vessel activity. A vessel is defined as any floating craft propelled by mechanical power.) ☐ Yes ☑ No

9. WATER WITHDRAWAL AMOUNTS This project involves the withdrawal of up to: 24,400 gallons per day Source Name: Magothy Aquifer

Does the project include a MAJOR DRAINAGE BASIN TRANSFER of water? See map at http://www.dec.ny.gov/lands/56800.html ☑ No ☐ Yes

If yes, ☐ Existing ☐ New From Basin: To Basin:

10. *REQUIRED EXHIBITS (6 NYCRR Part 601.10)* *Provide the names of the required exhibits applicable to this withdrawal:*

601.10(a) *PROJECT AUTHORIZATION FOR PUBLIC WATER SUPPLY SYSTEMS (e.g. Resolutions, Ordinances)*	attached	***601.10(h)*** *ACQUISITION MAPS (Map of any lands to be acquired as part of project)*	n/a
601.10(b) *GENERAL MAP (e.g. Project Location, For Public Water Supplies - water service area boundary)*	Engineering Report	***601.10(i)*** *WATER ANALYSES (Public Water Supplies should submit chemical & bacterial analysis directly to NYSDOH)*	n/a
601.10(c) *WATERSHED MAPS (Topographic map with location of withdrawal and any return flow or interbasin diversions).*	n/a	***601.10(j)*** *TREATMENT METHODS (Public Water Supplies - proposed methods to meet NYSDOH standards)*	n/a
601.10(d) *CONTRACT PLANS (Public Water Supplies should submit directly to NYSDOH for review and approval)*	n/a	***601.10(k)*** *PROJECT JUSTIFICATION (Provide summary statement of answers to the eight justification questions)*	Engineering Report
601.10(e) *ENGINEER'S REPORT (Signed by NYS PE, includes project description, water source yields and demands, etc.)*	Engineering Report	***601.10(l)*** *CANAL WITHDRAWAL APPROVALS (If applicable, provide adequate proof of approval from Canal Authority)*	n/a
601.10(f) *WATER CONSERVATION PROGRAM (Completed Water Conservation Program Form)*	attached	***601.10(m)*** *TRANSMITTAL LETTER (Include all contact information for applicant, attorney, engineer, etc.)*	Transmittal Letter
601.10(g) *ANNUAL REPORTING FORM FOR EXISTING WITHDRAWALS (Most recent submitted annual report)*	attached	***601.10(n)*** *GREAT LAKES-ST. LAWRENCE RIVER WATER RESOURCES COMPACT PROCESS REQUIREMENTS (Only applicable to Public Water Supply diversions from Great Lakes Basin - no other diversion types are allowed).*	n/a

Clear Form

Applicant Signature:

Name: Frank Mancini

Date:

Title: Superintendent

INSTRUCTIONS

Water Withdrawal Application Supplement Form (WW-1)

1. Before completing this form, please carefully review the Water Withdrawal Permit Program page located on the Department's website at http://www.dec.ny.gov/lands/55509.html (non-agricultural facilities) and http://www.dec.ny.gov/lands/86747.html (agricultural facilities). Note that applications by existing systems for an Initial Permit shall be submitted in accordance with the schedule established in NYCRR Part 601.7(b)2 as shown in Table 1 at http://www.dec.ny.gov/lands/86935.html.

2. This form is to accompany the Joint Application Form. The Joint Application Form, Supplement WW-1 and their instructions are available on the Department's website at http://www.dec.ny.gov/permits/6222.html.

3. NYSDEC strongly encourages electronic submission of supporting documents. Submit 3 completed copies of the Joint Application Form, Supplement WW-1 and all attachments to the NYSDEC Regional Permit Administrator (refer to the Joint Application Instructions).

4. Applicant Name - Applications must be in the name of the owner of the water withdrawal system involved. For acquisitions of existing systems, the applicant should be the prospective owner.

5. All Water Withdrawal Applications must include a completed Water Conservation Program Form demonstrating that the applicant has developed and implemented a Water Conservation Program that incorporates environmentally sound and economically feasible water conservation measures. Information is available on the Department's website at http://www.dec.ny.gov/lands/86945.html.

6. Locate and describe all facilities and service areas on appropriate maps and plans to be submitted with this form. Choose a scale for this location map that allows you to accurately define all groundwater wellhead and surface water intake positions, and the overall project area within the county or town. Include coordinates for all wellheads and intakes on the Joint Application Form, Item 8, and on additional sheets if needed.

7. Water Withdrawal Amounts (Item 9) - Convert to gallons per day (GPD). In order to convert from gallons per minute (GPM) to GPD, multiply GPM x 1440.

8. All facts and opinions expressed in the application must be documented in appropriate legal, engineering, or other papers attached as exhibits and noted in Item 10 of this form.

9. If more room is needed to complete any item, provide the information as attachments.

10. All Water Withdrawal Applications must include the following items in a separate exhibit:
    a) Names, titles, mailing addresses, and phone numbers of the Applicant's Attorney; Engineer; and other consultants (planners, geologists, etc.) serving the applicant.
    b) A list of all maps and exhibits accompanying the application.

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification.

Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Riverhead Water District - Extension No. 93		
Project Location (describe, and attach a general location map): 4285 Middle Country Road, Calverton NY 11933		
Brief Description of Proposed Action (include purpose or need): Extension of Riverhead Water District boundary to supply water to the existing property currently outside of the District boundary.		
Name of Applicant/Sponsor: Riverhead Water District	Telephone: (631) 727-3205 E-Mail: cconlin@townofriverheadny.gov	
Address: 1035 Pulaski Street		
City/PO: Riverhead	State: NY	Zip Code: 11901
Project Contact (if not same as sponsor; give name and title/role): John R. Collins, P.E.	Telephone: (631) 756-8000 E-Mail: jcollins@h2m.com	
Address: 358 Broad Hollow Road. 4th Floor East		
City/PO: Melville	State: NY	Zip Code: 11747
Property Owner (if not same as sponsor): HK Ventures, LLC	Telephone: (301) 493-9236 E-Mail:	
Address: 6500 Rock Spring Drive, Suite 5		
City/PO: Bethesda	State: MD	Zip Code: 20817

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☑Yes ☐No	Town of Riverhead Town Board; Anything Financial	TBD
b. City, Town or Village Planning Board or Commission ☐Yes ☑No		
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☐Yes ☑No		
e. County agencies ☑Yes ☐No	SCDHS - 348 Application for Water Supply Improvements	
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYSDEC	
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☐Yes ☑No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes ☐No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☑Yes ☐No

If Yes, identify the plan(s):

Remediaton Sites:152136, NYS Heritage Areas:LI North Shore Heritage Area

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☐ Yes ☑ No
If Yes, what is the zoning classification(s) including any applicable overlay district?

b. Is the use permitted or allowed by a special or conditional use permit? ☐ Yes ☑ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? Riverhead CSD

b. What police or other public protection forces serve the project site?
Town of Riverhead Police

c. Which fire protection and emergency medical services serve the project site?
Riverhead Fire Department / Riverhead Community Ambulance

d. What parks serve the project site?
Suffolk County

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)? Extension of the Riverhead Water District to provide potable water and fire protection to subject property.

b. a. Total acreage of the site of the proposed action? 30.28 acres
b. Total acreage to be physically disturbed? 0.5 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 0 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)

ii. Is a cluster/conservation layout proposed? ☐ Yes ☑ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: _____ months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☐Yes ☑No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase	_____	_____	_____	_____
At completion of all phases	_____	_____	_____	_____

g. Does the proposed action include new non-residential construction (including expansions)? ☐Yes ☑No

If Yes,

i. Total number of structures _____

ii. Dimensions (in feet) of largest proposed structure: _____height; _____width; and _____ length

iii. Approximate extent of building space to be heated or cooled: _____ square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐Yes ☑No

If Yes,

i. Purpose of the impoundment: _____

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐Other specify:

_____

iii. If other than water, identify the type of impounded/contained liquids and their source.

_____

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres

v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

_____

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? (Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite) ☐Yes ☑No

If Yes:

i .What is the purpose of the excavation or dredging? _____

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

_____

_____

iv. Will there be onsite dewatering or processing of excavated materials? ☐Yes ☑No

If yes, describe. _____

_____

v. What is the total area to be dredged or excavated? _____acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐Yes ☑No

ix. Summarize site reclamation goals and plan: _____

_____

_____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐Yes ☑No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

_____

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

_____

_____

_____

_____

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐ Yes ☑ No

If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐ Yes ☑ No

If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____

_____

- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

_____

c. Will the proposed action use, or create a new demand for water? ☑ Yes ☐ No

If Yes:

i. Total anticipated water usage/demand per day: 24,400 gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☑ Yes ☐ No

If Yes:

- Name of district or service area: Riverhead Water District
- Does the existing public water supply have capacity to serve the proposal? ☑ Yes ☐ No
- Is the project site in the existing district? ☐ Yes ☑ No
- Is expansion of the district needed? ☑ Yes ☐ No
- Do existing lines serve the project site? ☐ Yes ☑ No

iii. Will line extension within an existing district be necessary to supply the project? ☑ Yes ☐ No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: Installation of 2 service stubs for future fire and domestic water connection
- Source(s) of supply for the district: Magothy Aquifer

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐ Yes ☑ No

If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

_____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☐ Yes ☑ No

If Yes:

i. Total anticipated liquid waste generation per day: _____ gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

_____

_____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐ Yes ☐ No

If Yes:

- Name of wastewater treatment plant to be used: _____
- Name of district: _____
- Does the existing wastewater treatment plant have capacity to serve the project? ☐ Yes ☐ No
- Is the project site in the existing district? ☐ Yes ☐ No
- Is expansion of the district needed? ☐ Yes ☐ No

- Do existing sewer lines serve the project site? ☐Yes ☐No
- Will a line extension within an existing district be necessary to serve the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

_____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☐No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

_____

_____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☐Yes ☑No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or _____ acres (impervious surface)

_____ Square feet or _____ acres (parcel size)

ii. Describe types of new point sources. _____

_____

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

_____

_____

- If to surface waters, identify receiving water bodies or wetlands: _____

_____

_____

- Will stormwater runoff flow to adjacent properties? ☐Yes ☐No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐Yes ☑No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

_____

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

_____

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

_____

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

_____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

_____

_____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend ☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

_____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

_____

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☐Yes ☑No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

_____

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

_____

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☐No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 8:00 A.M. - 4:00 A.M.
- Saturday: No Work
- Sunday: No Work
- Holidays: No Work

ii. During Operations:

- Monday - Friday: _____
- Saturday: _____
- Sunday: _____
- Holidays: _____

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☐ Yes ☑ No

If yes:

i. Provide details including sources, time of day and duration:

_____

_____

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☐ No

Describe: _____

_____

n. Will the proposed action have outdoor lighting? ☐ Yes ☑ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

_____

_____

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☐ No

Describe: _____

_____

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

_____

_____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities:_____

_____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

_____

_____

_____

_____

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☐ Yes ☑ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: _____ tons per _____ (unit of time)
- Operation : _____ tons per _____ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: _____

  _____
- Operation: _____

  _____

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: _____

  _____
- Operation: _____

  _____

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

_____

_____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

_____

_____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

_____

_____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

_____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

_____

_____

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☐ Commercial ☐ Residential (suburban) ☑ Rural (non-farm)
☑ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

_____

_____

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces			
• Forested			
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)			
• Agricultural (includes active orchards, field, greenhouse etc.)			
• Surface water features (lakes, ponds, streams, rivers, etc.)			
• Wetlands (freshwater or tidal)			
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: _____ _____			

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☐ Yes ☑ No

If Yes,

i. Identify Facilities:

_____

_____

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

_____

_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Has the facility been formally closed? ☐ Yes ☐ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

_____

_____

iii. Describe any development constraints due to the prior solid waste activities: _____

_____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

_____

_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☑ Yes ☐ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☑ Yes ☐ No

☐ Yes – Spills Incidents database Provide DEC ID number(s): _____

☑ Yes – Environmental Site Remediation database Provide DEC ID number(s): 152136

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures: _____

_____

_____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☑ Yes ☐ No

If yes, provide DEC ID number(s): 152136

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

_____

_____

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☑ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? 1000 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____%

c. Predominant soil type(s) present on project site: Sandy / Silt / Loam 100 %
_____ _____%
_____ _____%

d. What is the average depth to the water table on the project site? Average: 25 feet

e. Drainage status of project site soils:
☑ Well Drained: 100 % of site
☐ Moderately Well Drained: _____% of site
☐ Poorly Drained _____% of site

f. Approximate proportion of proposed action site with slopes:
☐ 0-10%: _____% of site
☐ 10-15%: _____% of site
☐ 15% or greater: _____% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☐ Yes ☑ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☐ Yes ☑ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☐ Yes ☑ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name _____ Approximate Size _____
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? ☐ Yes ☑ No

k. Is the project site in the 500-year Floodplain? ☐ Yes ☑ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☑ Yes ☐ No

If Yes:

i. Name of aquifer: Sole Source Aquifer Names:Nassau-Suffolk SSA

m. Identify the predominant wildlife species that occupy or use the project site: _____

_____ _____ _____

_____ _____ _____

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No

If Yes:

i. Describe the habitat/community (composition, function, and basis for designation): _____

ii. Source(s) of description or evaluation: _____

iii. Extent of community/habitat:

- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☑ Yes ☐ No

If Yes:

i. Species and listing (endangered or threatened): Short-eared Owl, Tiger Salamander

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

If Yes:

i. Species and listing: _____

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No

If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No

If Yes, provide county plus district name/number: _____

b. Are agricultural lands consisting of highly productive soils present? ☐ Yes ☑ No

i. If Yes: acreage(s) on project site? _____

ii. Source(s) of soil rating(s): _____

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No

If Yes:

i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature

ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☑ Yes ☐ No

If Yes:

i. CEA name: SGPA, Central Suffolk Pine Barrens

ii. Basis for designation: Protect groundwater, Benefit to human health & protect drinking water

iii. Designating agency and date: Agency:Long Island Regional Planning, Agency:Suffolk County, Date:3-19-93, Date:2-10-88

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☐ Yes ☑ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☐ Yes ☑ No

If Yes:

i. Identify resource: _____

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____

iii. Distance between project and resource: _____ miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

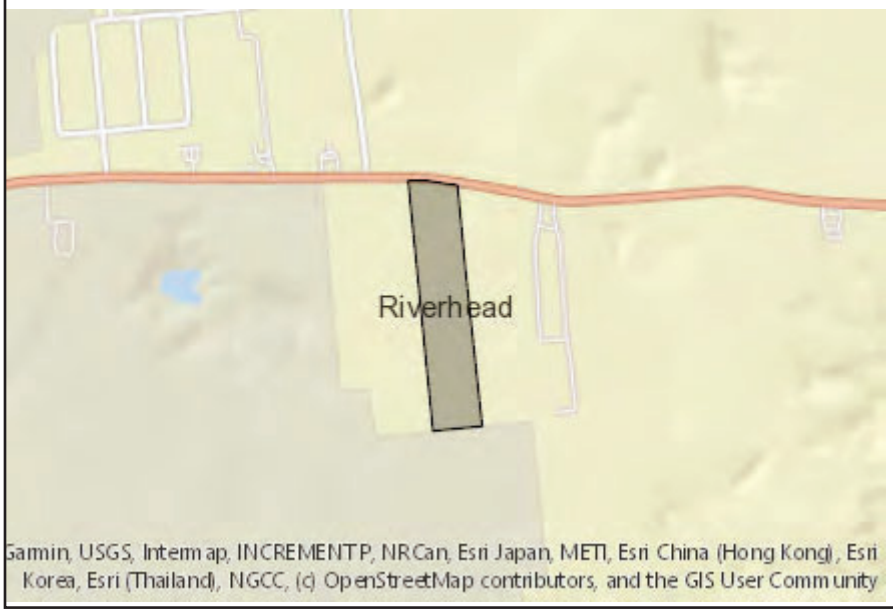
Applicant/Sponsor Name _____ Date _____

Signature _____ Title _____

PRINT FORM

EAF Mapper Summary Report

Thursday, April 22, 2021 9:37 AM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.

B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Yes - Digital mapping data are not available for all Special Planning Districts. Refer to EAF Workbook.
C.2.b. [Special Planning District - Name]	Remediaton Sites:152136, NYS Heritage Areas:LI North Shore Heritage Area
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Yes - Digital mapping data for Spills Incidents are not available for this location. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Yes
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Yes
E.1.h.i [DEC Spills or Remediation Site - DEC ID Number]	152136
E.1.h.iii [Within 2,000' of DEC Remediation Site]	Yes
E.1.h.iii [Within 2,000' of DEC Remediation Site - DEC ID]	152136
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	No
E.2.h.ii [Surface Water Features]	No
E.2.h.iii [Surface Water Features]	No
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	No
E.2.j. [100 Year Floodplain]	No
E.2.k. [500 Year Floodplain]	No
E.2.l. [Aquifers]	Yes

E.2.l. [Aquifer Names]	Sole Source Aquifer Names:Nassau-Suffolk SSA
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	Yes
E.2.o. [Endangered or Threatened Species - Name]	Short-eared Owl, Tiger Salamander
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	Yes
E.3.d [Critical Environmental Area - Name]	SGPA, Central Suffolk Pine Barrens
E.3.d.ii [Critical Environmental Area - Reason]	Protect groundwater, Benefit to human health & protect drinking water
E.3.d.iii [Critical Environmental Area – Date and Agency]	Agency:Long Island Regional Planning, Agency:Suffolk County, Date:3-19-93, Date:2-10-88
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Water, Region 1

SUNY @ Stony Brook, 50 Circle Road, Stony Brook, NY 11790

P:(631) 444-0405 I F:(631) 444-0424 I Email: R1dow@dec.ny.gov

www.dec.ny.gov

Instructions to add more columns for additional wells:

Right click on heading letter H and click insert.

Right click on cell G32, press copy.

Right click on cell G33, press paste special - formula (Fx).

Repeat steps above to create as many additional columns as needed.

Reporting Period:	**2020**
Utility Name:	**Riverhead Water Dist**
Address:	1035 Pulaski st Riverhead New York.
Report Prepared By:	Tom Kruger
Phone Number:	631-727-3205
Email Address:	Kruger@townofriverheadny.gov

PUMPAGE DATA

DEC Well Number:	S-108348	S-7261	S-111777	S-30271	S-34732	S-66685	S-124088	S-89133	S-105439	S-114622	S-122918
WSA or WWA #:	WSA9370	WSA1938	WSA9370	WSA5522	WSA5641	WSA6842	WSA66685	WSA7782	WSA9065	n/a	n/a
District Well ID:	Well#1a	Well#2	Well#3a	Well#4-1	Well#4-2	Well#5-1	Well#5-2a	Well#7-2	Well#7-3	Well#11-1	Well#11-2
Authorized Capacity:	1000 gpm	1000 gpm	1000 gpm	1000 gpm	1200 gpm	1200 gpm	1380 gpm	1200 gpm	1200 gpm	1350 gpm	1350 gpm
Actual Capacity:	1000 gpm	900 gpm	1,300 gpm	1000 gpm	1375 gpm	1260 gpm	1100 gpm	1275 gpm	1250 gpm	1325 gpm	1350 gpm
January	15,095,000	0	4,151,000	23,816,000	0	0	11,624,000	3,087,000	2,020,000	11,880,000	14,051,000
February	15,358,000	0	8,606,000	13,974,000	0	0	12,948,000	2,660,000	1,819,000	12,857,000	12,109,000
March	12,143,000	0	15,214,000	0	0	0	29,622,000	4,904,000	1,681,000	11,723,000	14,748,000
April	10,603,000	0	15,465,000	0	0	0	33,121,000	6,351,000	2,740,000	13,637,000	15,127,000
May	20,244,000	0	29,246,000	0	0	1,115,000	43,095,000	21,956,000	2,387,000	27,625,000	29,051,000
June	34,573,000	2,606,000	42,691,000	37,137,000	14,421,000	26,313,000	49,893,000	40,084,000	38,783,000	48,074,000	47,806,000
July	34,663,000	4,787,000	45,887,000	41,792,000	24,503,000	33,652,000	53,226,000	50,814,000	36,557,000	54,651,000	46,751,000
August	24,045,000	2,618,000	45,599,000	43,054,000	14,734,000	26,818,000	46,779,000	40,575,000	28,523,000	44,346,000	45,471,000
September	25,977,000	0	29,928,000	40,904,000	6,491,000	13,549,000	48,498,000	36,741,000	23,305,000	42,359,000	35,088,000
October	15,939,000	0	13,667,000	30,903,000	1,739,000	4,985,000	44,913,000	11,053,000	10,320,000	27,857,000	29,298,000
November	6,412,000	0	6,764,000	28,725,000	11,000	37,000	19,920,000	5,191,000	5,117,000	15,666,000	17,427,000
December	3,739,000	0	7,200,000	25,298,000	0	0	22,007,000	3,532,000	4,670,000	10,289,000	14,221,000
Total	218,791,000	10,011,000	264,418,000	285,603,000	61,899,000	106,469,000	415,646,000	226,948,000	157,922,000	320,964,000	321,148,000

NOTE: Pumpage entered in thousands of gallons

Sum of Monthly Total	
Sum of Each Well Total	

1. Population served in service area:	35,000
2. Population served outside of own service area:	21
3. Percent of Customers Metered:	100%
4. Number of Services:	12,263
5. Peak Day Rate:	20,114,000
6. Date of Peak Occurrence:	July 27,2020
7. Number of wells which can be operated by power source other than electric:	14
8. Amount of water purchased from another water district (thousands of gallons):	28,491,000
9. District water was purchased from:	SCWA
10. Amount of water supplied to another district	

(thousands of gallons): 4,305,000

11. District water supplied to: SCWA

STORAGE FACILITIES

Name	Type	Capacity
Pulaski St Tank	Elevated	0.16 million
Baiting Hollow Plt 8	Standpipe	1.0 million
Wading River Plt no.9	Standpipe	0.827 million
Northville Plt no. 10	Ground	1.5 million
Route 58 Tank	Elevated	0.75 million
Tuthills Lane Plt 15 (not in service)	Ground	2.0 million

NOTE: Storage facilty capacity entered in millions of gallons

S-49605	S-129655	S-129656	S-129657	S-129453	S-130317	S.C.W.A	S.C.W.A	
n/a	WSA11249	WSA11249	WSA11249	WSA11367	WSA11411			
Well#12-1	Well#15-1	Well#15-2	Well#15-3	Well#16-1	Well#17-1	Merokee Trail	Dogwood Dr	
1000 gpm	250 gpm	250 gpm	250 gpm	1380 gpm	1380 gpm	interconnect	interconnect	
1000 gpm	250 gpm	250 gpm	250 gpm	1300 gpm	400 gpm			Monthly Totals
0	427,000	580,000	560,000	1,127,000	0	0	0	88,418,000
0	486,000	617,000	604,000	667,000	0	0	0	82,705,000
0	330,000	406,000	377,000	740,000	0	0	0	91,888,000
0	427,000	552,000	565,000	977,000	0	0	0	99,565,000
0	4,911,000	6,089,000	6,126,000	9,206,000	0	0	0	201,051,000
0	7,905,000	9,817,000	9,527,000	35,615,000	3,589,000	4,989,000	4,847,000	458,670,000
0	9,651,000	11,270,000	10,946,000	33,820,000	3,072,000	6,292,000	6,493,000	508,827,000
0	6,377,000	7,836,000	7,600,000	27,947,000	488,000	2,048,000	3,512,000	418,370,000
0	1,836,000	2,088,000	2,230,000	17,388,000	29,000	0	310,000	326,721,000
0	429,000	117,000	357,000	8,240,000	0	0	0	199,817,000
0	592,000	78,000	494,000	0	0	0	0	106,434,000
0	80,000	65,000	127,000	1,130,000	0	0	0	92,358,000
0	33,451,000	39,515,000	39,513,000	136,857,000	7,178,000	13,329,000	15,162,000	2,674,824,000

August 2, 2021

VIA ELECTRONIC MAIL

John R. Collins, P.E.
H2M architects + engineers
538 Broad Hollow Road, 4th Floor East
Melville, NY 11747

Re: Riverhead Water District
Map and Plan for Water Extension No. 93 – HK Ventures, LLC
Review Comments

Mr. Collins,

P.W. Grosser Consulting, Inc. (PWGC) has reviewed the Riverhead Water District Map and Plan for Water Extension No. 93 (the "Plan"), dated July 2021 for the proposed HK Ventures, LLC Industrial Park to be located at 4285 Middle Country Road in Calverton, New York (the "Site").

Upon review of the Plan, there are a number of items that we believe need to be further addressed. The Plan is based on the Engineers Report for On-Site Water Supply – HK Ventures, LLC Industrial Park, prepared by Key Civil Engineering, P.C., dated July 2020. Since that plan was prepared, there has been a Water Availability Letter submitted to the Riverhead Water District (RWD) on December 17, 2020, a sewage treatment plant (STP) Siting Letter submitted to the Suffolk County Department of Health Services (SCDHS), dated December 10, 2020, a Draft Environmental Impact Statement (DEIS) submitted to the Town of Riverhead Planning Board in May 2021 and accepted on June 17, 2021, and a Water Supply Source Study prepared in April 2021 and included in the DEIS submission. Based on the level of information these documents provide, we ask that they be considered and included as part of the Plan analysis.

Further, upon review of the Plan, an error was identified in Section 3.8 (Analysis of Need). The Maximum Day plus Future Demand (MDFD) is calculated incorrectly, based on the information provided. The Maximum Day Demand (MDD) is 22.53 million gallons per day (MGD) and the peak future demand (of the Proposed Site) was noted to be 0.57 MGD (or 570,000 GPD) for a MDFD of 23.10 MGD. The peak future demand of the Site is not 0.57 MGD (or 570,000 GPD), but rather is 0.0572 MGD (or 57,200 GPD) (the calculation was higher by a factor of ten). Therefore, the corrected MDFD should be 22.5872 MGD. If this correction is made, the Plan analysis would indicate that not only does the District does have the capacity to meet the MDFD, but that the District would

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

be able to rely on existing storage, similar to how they would meet the current MDD, by relying on existing storage.

From Section 3.1 of the Plan, the RWD wells available capacity is 20.06 MGD. Therefore, the total available capacity with the largest well out of service is 17.76 MGD (20.06 MGD – 2.3 MGD). From Section 3.2 of the Plan, the RWD total storage capacity is 6.24 MGD, so assuming a usable tank capacity of 80%, there is a total capacity of 4.992 MGD. Therefore, if the district were to rely on their existing supply wells and existing storage, there is a capacity of 22.752 MGD (assuming the largest producing well is out of service and assuming a usable tank capacity of 80%), which is enough to satisfy both the MDD (22.53 MGD) and MDFD (22.5872 MGD).

Based on the above information, there is a fourth alternative that should be presented and considered in the Plan. This alternative includes potable water for the subject site to be provided by the RWD, and fire and hydrant water to be provided by private wells located on the Site. The fire and hydrant water would be provided by wells on-site, since the RWD does not have the capacity to meet the Maximum Day plus Fire Flow demand per the Plan. The water will be considered non-potable water and will, therefore, not be subject to the requirements of a potable water supply.

Please contact our office should you have any questions. Thank you.

Regards,
P.W. Grosser Consulting

Kim Gennaro-Oancea, AICP CEP
Vice President

Jenny Lund, PE
Project Manager

cc: Frank Mancini, P.G. MBA (Riverhead Water District)

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2021-AEA-17798-OE
Prior Study No.
2021-AEA-13094-OE

Issued Date: 01/25/2022

Ben Aparo
Summit Ridge Energy
1515 Wilson Blvd Suite 300
Arlington, VA 22209

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Commercial Use Building HK Solar Rooftop Project 50'
Location:	Calverton, NY
Latitude:	40-55-28.48N NAD 83
Longitude:	72-46-17.94W
Heights:	70 feet site elevation (SE)
	50 feet above ground level (AGL)
	120 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 07/25/2023 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This determination cancels and supersedes prior determinations issued for this structure.

If we can be of further assistance, please contact our office at (718) 553-4199, or Dianne.Marin@FAA.GOV. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-AEA-17798-OE.

Signature Control No: 504757310-509185399 (DNE)
Dianne Marin
Technician

Attachment(s)
Case Description
Map(s)

Low profile roof mounted solar system about 2MWac.

Verified Map for ASN 2021-AEA-17798-OE

CALVERTON INDUSTRIAL PARK
4285 MIDDLE COUNTRY ROAD
CALVERTON, NEW YORK
TAX MAP ID: 0600-116.00-01.00-002.000

SOIL CHARACTERIZATION REPORT

PREPARED FOR:

HK Ventures LLC
147 Steamboat Rd
Great Neck, New York 11024

PREPARED BY:

P.W. Grosser Consulting, Inc.
630 Johnson Avenue, Suite 7
Bohemia, New York 11716
Phone: 631-589-6353
Fax: 631-589-8705

Thomas Melia, PG, Senior Project Manager thomasm@pwgrosser.com
Michael Pecoraro, Senior Hydrogeologist mpecoraro@pwgrosser.com

PWGC Project Number: HKV2101

DECEMBER 2021

PWGC
CLIENT DRIVEN SOLUTIONS

SOIL CHARACTERIZATION REPORT
4285 MIDDLE COUNTRY RD, CALVERTON, NY

TABLE OF CONTENTS **PAGE**

1.0 INTRODUCTION 1
2.0 BACKGROUND 2
2.1 Site Description and Features 2
2.2 Physical Setting 2
2.3 Site History and Land Use 2
2.4 Adjacent Property Land Use 2
2.5 Summary of Previous Assessments 2
2.5.1 Phase I Environmental Site Assessment Report (December 2019) 2
3.0 SOIL CHARACTERIZATION 4
3.1 Surface Soil Sampling 4
3.1.1 Drilling Procedures 4
3.1.2 Sample Collection 4
3.1.3 Sample Analysis 5
3.2 Western Property Boundary Soil Sampling 5
3.2.1 Drilling Procedures 6
3.2.2 Sample Collection 6
3.2.3 Sample Analysis 7
3.3 Characterization Sample Data Evaluation 7
4.0 SOIL CHARACTERIZATION RESULTS 8
4.1 Surface Soil Sampling Results 8
4.1.1 Surface Soil Characterization 8
4.1.2 Soil Analytical Results 8
4.2 Western Property Boundary Soil Sampling Results 9
4.2.1 Soil Boring Characterization 9
4.2.2 Soil Analytical Results 9
4.3 Soil Sampling Discussion 10
4.3.1 Soils Meet Unrestricted Use SCOs 11
4.3.2 Soils Meet General Fill Requirements 11
4.3.3 Soils Exceed General Fill Requirements 11
4.3.4 Soils Exceed Restricted Fill Requirements 12
5.0 CONCLUSIONS AND RECOMMENDATIONS 13
5.1 Conclusions 13
5.2 Recommendations 13
6.0 REFERENCES 15
7.0 LIMITATIONS 16

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

FIGURES

FIGURE 1	Site Location Map
FIGURE 2	Site Plan
FIGURE 3	Soil Criteria
FIGURE 4	Soil Boring Locations

TABLES

TABLE 1	Soil Analytical Results – VOCs
TABLE 2	Soil Analytical Results – SVOCs
TABLE 3	Soil Analytical Results – Metals
TABLE 4	Soil Analytical Results – Pesticides, Herbicides, & PCBs

APPENDICES

APPENDIX A	Laboratory Analytical Reports
APPENDIX B	Soil Boring Logs

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

ACRONYM	DEFINITION
ASP	Analytical Services Protocol
ASTM	American Society for Testing and Materials
CFR	Code of Federal Regulations
DER	Department of Environmental Remediation
ELAP	Environmental Laboratory Approval Program
EM	Electromagnetic
ESA	Environmental Site Assessment
GQS	Groundwater Quality Standard
GV	Guidance Value
NYCRR	New York Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCB	Polychlorinated Biphenyl
PID	Photo-ionization Detector
PWGC	P.W. Grosser Consulting, Inc.
QA/QC	Quality Assurance / Quality Control
REC	Recognized Environmental Condition
SCO	Soil Cleanup Objective
SVOC	Semi-volatile Organic Compound
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

1.0 INTRODUCTION

HK Ventures LLC (Client) retained P.W. Grosser Consulting, Inc. (PWGC) to prepare a Soil Characterization Report for the property located at 4285 Middle Country Road, Calverton, New York. The purpose of the soil characterization was to characterize soils at the site prior to a planned redevelopment of the subject property. Work was conducted in accordance with PWGC's April 2021 Soil and Materials Management Plan (SMMP) and in substantial conformance with the New York State Department of Environmental Conservation's (NYSDEC's) Division of Environmental Remediation's (DER's) Technical Guidance for Site Investigation and Remediation, May 2010 (DER-10).

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

2.0 BACKGROUND

2.1 Site Description and Features

The subject property consists of one parcel located at 4285 Middle Country Road in the Hamlet of Calverton, New York. The site is located in the Town of Riverhead, and Suffolk County. The property is identified in the Suffolk County Tax Map as 0600-116.00-01.00-002.000. A Site Location Map is included as **Figure 1** and a Site Plan is included as **Figure 2.**

2.2 Physical Setting

The Site measures approximately 30.28 acres and is vacant with wooded areas along the northeast and southwest property boundaries. Currently, the property is primarily composed of a naturally vegetated undeveloped land. The property slopes gradually from north to south. Regional groundwater flow beneath the subject property is in a generally northeast direction as obtained from groundwater contour maps developed by the United States Geologic Survey for Long Island in 2013.

2.3 Site History and Land Use

The Site was historically used for agricultural purposes from before 1938 to approximately 1986. The Site is currently vacant and unimproved.

2.4 Adjacent Property Land Use

The Site is bounded by Middle Country Road and vacant land to the north, a wooded portion of the former Grumman property to the south, a sod farm to the east, and commercial properties to the west. Commercial properties to the west consist of a Tractor Supply Co. retail store, and Sky Materials which is a New York State Department of Environmental Conservation (NYSDEC) Part 360 permitted solid waste management facility.

2.5 Summary of Previous Assessments

2.5.1 Phase I Environmental Site Assessment Report (December 2019)

A Phase I ESA was prepared for the subject property in December of 2019 by H2M. The Phase I ESA identified the following REC associated with subject property.

- Based on a review of historical aerial photographs, the subject property was historically utilized for agricultural purposes from before 1938 to approximately 1986. Chemicals such as herbicides and

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

pesticides are commonly used during farming operations to control pests and maintain plant growth. Residual contamination may be present in site surface soils. Due to the potential presence of herbicides and pesticides in the onsite soil, this is considered to be a REC.

Based on review of the Phase I ESA and a visual inspection of the Site and surrounding area, PWGC identified the following additional potential environmental concerns:

- Current and historical usage of properties in the surrounding area for agricultural purposes. As with the usage of the subject property, this usage is likely associated with the application of pesticides and herbicides. Such compounds may have migrated to the subject property from adjacent properties via surficial storm runoff or wind deposition.
- The adjacent property to the west (Sky Materials) is an active NYSDEC permitted solid waste management facility. Based on a visual inspection of this property from public rights of way, it appears the facility engages in processing construction and demolition (C&D) debris and vegetative waste (mulching). Based on review of historical aerial photographs, there is no evidence of piles of soil or debris, or other evidence of improper dumping associated with the Sky Materials site on the subject property. There is evidence of a possible access road/trail that appears to be associated with the Sky Materials site that encroached onto the southwestern corner of the subject property from approximately 2006 to 2010 (the trail currently appears to be overgrown with vegetation). However, based on the documented history of poor housekeeping, violations, and non-compliance with permit conditions, it is possible that soils, C&D debris and/or other materials from Sky Materials may potentially have been improperly dumped along the common boundary with the subject property.
- The former Calverton Naval Weapons Industrial Reserve Plant (NWIRP) is located to the south and west of the subject property. This site is currently known as Enterprise Park at Calverton (EPCAL). This site is listed as a NYSDEC Class 2 Hazardous Waste site where volatile organic compound (VOC) and per- and polyfluoroalkyl substance (PFAS) impact to groundwater has been documented.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

3.0 SOIL CHARACTERIZATION

Soils at the site were characterized to evaluate potential impacts related to the former agricultural usage of the subject property, as well as the current and historical usage of the adjacent property to the west that has been used as a sand mine and is currently a registered C&D processing facility (Sky Materials).

3.1 Surface Soil Sampling

To evaluate potential impact related to the former agricultural usage of the subject property, PWGC performed screening sampling by collecting composite surface soil samples. The site was divided into 30 approximately one-acre grids, and five shallow soil borings were installed in each for the purposes of collecting composite samples from multiple depths within each grid. Sample grids are illustrated in **Figure 3**.

3.1.1 Drilling Procedures

Sampling was performed between October 13 and October 15, 2021. Shallow soil borings were installed manually using a stainless-steel hand auger. Soils were collected continuously from ground surface to an approximate depth of two feet below ground surface (bgs). Collected soils were placed on 10-mil polyethylene sheeting in the order they came out of the ground. Soils were screened for the presence of volatile organic vapors, which are commonly associated with petroleum products and industrial solvents, utilizing a photo-ionization detector (PID). Soils were classified by a hydrogeologist using the Unified Soil Classification System (USCS).

3.1.2 Sample Collection

At each sampling grid, soil samples from the following intervals were collected:

- One five-point composite sample comprised of soils collected from each of the five borings installed within the grid from ground surface to two inches bgs (or two inches below the vegetated root layer).
- One five-point composite sample comprised of soils collected from each of the five borings installed within the grid from 18 to 24 inches bgs.

Soil samples collected for VOCs were discrete samples (non-composite and non-homogenous) to minimize VOC loss. Remaining soils from each interval within each grid were transferred to a stainless-steel bowl and homogenized. Once homogenized, samples were transferred to pre-cleaned, pre-preserved laboratory supplied glassware.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

3.1.3 Sample Analysis

Initially, only the 0 to 2-inch sample from each grid was analyzed. For sample grids where the 0 to 2-inch sample exceeded applicable standards, the corresponding 18 to 24-inch sample was analyzed to evaluate the vertical extent of impact.

Soil samples submitted for laboratory analysis were placed on ice in a cooler and shipped under proper chain-of-custody procedures to Alpha Analytical Laboratories (Alpha), a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory. Samples were analyzed for:

- Pesticides by USEPA Methods 8081.
- Target Analyte List (TAL) Metals by USEPA Methods 6010/7471.

In addition to pesticides and metals, approximately 20% of samples were also analyzed for full Part 375 parameters. As no evidence of impact was identified during field screening, full Part 375 sample locations were selected at random to provide representative coverage of the entire site. Part 375 parameters include the following analyses in addition to pesticides and metals:

- Volatile organic compounds (VOCs) by USEPA Method 8260.
- Semi-volatile organic compounds (SVOCs) by USEPA Method 8270.
- Poly-chlorinated biphenyls (PCBs) by USEPA Method 8082.
- Herbicides by USEPA Method 8151

Analytical data are summarized in **Tables 1** through **4**; laboratory reports are included as **Appendix A**.

3.2 Western Property Boundary Soil Sampling

To evaluate potential impact related to the current and historical usage of the adjacent property to the west (Sky Materials), an access road/trail that appears from the Sky Materials site that encroached onto the southwestern corner of the subject property from approximately 2006 to 2010, and a documented history of poor housekeeping, violations, and non-compliance with permit conditions at the Sky Materials site, screening sampling was performed by installing 10 soil borings along the common property boundary. Boring locations are illustrated in **Figure 4**.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

3.2.1 *Drilling Procedures*

Associated Environmental Services, Inc. (Associated) of Hauppauge, New York provided environmental drilling services during the characterization. On October 11, 2021, Associated mobilized to the site with a Geoprobe® 7822DT direct-push drill rig to install environmental soil borings. Soils were collected continuously from ground surface to a depth of approximately 10 feet bgs or until native soils were encountered, whichever was deeper. Collected soils were placed on 10-mil polyethylene sheeting in the order they came out of the ground. Soils were screened for the presence of volatile organic vapors, which are commonly associated with petroleum products and industrial solvents, utilizing a PID. Soils were classified by a hydrogeologist using the USCS. Soil boring logs are included as **Appendix B**.

3.2.2 *Sample Collection*

Soils from each boring location were screened for evidence of the presence of non-native fill material and/or C&D debris that may be associated with the adjacent property, or other evidence of impact (e.g., staining, odors, elevated PID response). Soil samples were collected for analysis from borings where evidence of non-native fill material, C&D debris and/or other evidence of impact is observed.

At each boring location one sample was collected from the two-foot interval exhibiting the greatest degree of impact. For boring locations where no evidence of impact was detected, sample intervals were selected at random. Based on this, samples were collected as follows:

- Soil borings SB001 through SB008 – no evidence of impact or fill material was identified. As such soil sample intervals were selected at random.
- Soil boring SB009 – evidence of fill material (asphalt and brick fragments) was observed from 1 to 4 feet bgs. As such a soil sample was collected from the 2 to 4-foot interval where evidence of fill material was most concentrated.
- Soil boring SB010 - evidence of fill material (asphalt and brick fragments) was observed from 1 to 8 feet bgs. As such a soil sample was collected from the 6 to 8-foot interval where evidence of fill material was most concentrated.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

Soil samples collected for VOCs were discrete samples (non-composite and non-homogenous) to minimize VOC loss. Remaining soils were transferred to a stainless-steel bowl and homogenized. Once homogenized, samples were transferred to pre-cleaned, pre-preserved laboratory supplied glassware.

3.2.3 Sample Analysis

Soil samples to be submitted for laboratory analysis were placed on ice in a cooler and shipped under proper chain-of-custody procedures to Alpha. Samples were analyzed for:

- VOCs by USEPA Method 8260.
- SVOCs by USEPA Method 8270.
- PCBs by USEPA Method 8082.
- Pesticides by USEPA Methods 8081.
- Herbicides by USEPA Method 8151
- TAL Metals by USEPA Methods 6010/7471.

Analytical data are summarized in **Tables 1** through **4**; laboratory reports are included as **Appendix A**.

3.3 Characterization Sample Data Evaluation

Sample data was compared to the Unrestricted Use Soil Cleanup Objectives (UUSCOs) specified in 6 NYCRR Part 375-6, Remediation Program Soil Cleanup Objectives, and the General Fill requirements specified in Table 2 of 6 NYCRR Part 360.13, Special Requirements for Pre-Determined Beneficial Use of Fill Material.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

4.0 SOIL CHARACTERIZATION RESULTS

4.1 Surface Soil Sampling Results

4.1.1 Surface Soil Characterization

Between October 13 and October 15, 2021, a total of 150 shallow soil borings were installed across the site using a stainless-steel hand auger. PID readings did not exceed 0.2 parts per million (ppm) when screened with a PID.

4.1.2 Soil Analytical Results

Sample data was compared to the Unrestricted Use Soil Cleanup Objectives (UUSCOs) specified in 6 NYCRR Part 375-6, Remediation Program Soil Cleanup Objectives, and the General Fill requirements specified in Table 2 of 6 NYCRR Part 360.13, Special Requirements for Pre-Determined Beneficial Use of Fill Material.

A total of seven surface soil samples were collected for VOC analysis. VOCs were not detected exceeding UUSCOs in the seven samples.

A total of six surface soil samples were collected for SVOC analysis. SVOCs were not detected exceeding UUSCOs in the six samples.

Metals were detected at concentrations exceeding their respective UUSCOs in samples collected from 14 of 30 grids in the 0-2 inch interval (Grids A, B, C, H, I, J, K, L, M, N, O, Q, AC, and AD). As such samples from the 18-24 inch interval from these grids were analyzed. Metals were detected at concentrations exceeding their respective UUSCOs in four (4) of the 14 samples submitted from the 18-24 inch interval (Grids A, B, O, and Q) . In samples where metals were detected at concentrations exceeding UUSCOs in the 18-24 inch interval, the concentrations detected were uniformly lower than the corresponding 0-2 inch sample. In each of the samples collected, arsenic was the sole metal detected above UUSCOs with the exception of Grids A and B where mercury was detected as well. In each sample where arsenic was detected at a concentration exceeding its UUSCO of 13 ppm, it also exceeded its General Fill requirement standard of 16 ppm.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

Pesticides were detected at concentrations exceeding their respective UUSCOs in samples collected from 29 of 30 grids in the 0-2 inch interval (all except Grid E). As such samples from the 18-24 inch interval from these grids were analyzed. Pesticides were detected at concentrations exceeding their respective UUSCOs in 28 of the 29 samples submitted from the 18-24 inch interval (all except Grid X). In samples where pesticides were detected at concentrations exceeding UUSCOs in the 18-24 inch interval, the concentrations detected were generally lower than the corresponding 0-2 inch sample. Pesticides exceeding General Fill requirements were limited to Grids A, B, H and O.

A total of five surface soil samples were collected for PCB analysis. Each of the five samples did not yield detectable concentrations of PCBs.

A total of six surface soil samples were collected for herbicide analysis. Each of the six samples did not yield detectable concentrations of herbicides.

4.2 Western Property Boundary Soil Sampling Results

4.2.1 Soil Boring Characterization

On October 11, 2021, a total of ten soil borings were installed along the western property boundary to evaluate potential contamination from the adjacent property. Soil generally consisted of a layer of topsoil approximately one-foot thick transitioning to a silty sand mixture containing gravel with a layer of clayey silt with low plasticity occasionally intermixed. As depth increases, soil borings transitioned to a well graded medium sand with gravel. Evidence of fill material was observed in the two southernmost borings, SB009 and SB010. No visual or olfactory contamination was observed in the soil borings, and PID readings did not exceed 0.4 ppm when screened with a PID. Groundwater was not encountered in any of the soil borings.

4.2.2 Soil Analytical Results

Sample data was compared to the Unrestricted Use Soil Cleanup Objectives (UUSCOs) specified in 6 NYCRR Part 375-6, Remediation Program Soil Cleanup Objectives, and the General Fill Requirements specified in Table 2 of 6 NYCRR Part 360.13, Special Requirements for Pre-Determined Beneficial Use of Fill Material.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

Analytical results from SB001 through SB010 did not yield concentrations of VOCs exceeding Fill Material Requirements with the exception of acetone in SB010_6-8. Acetone is a commonly used laboratory reagent and its presence in the sample collected from soil boring SB010 is likely due to laboratory interference and not related to subsurface impact at the subject property.

Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene were detected above their respective Fill Material Requirements in SB009_2-4.

Metals were not found exceeding Fill Material Requirements in the soil borings, with the exception of Cadmium in SB009_2-4 and Arsenic in SB010_6-8. Lead, Mercury, and Zinc were detected exceeding their respective UUSCOs in SB009_2-4 but were within Fill Material Requirements.

Pesticides (4,4'-DDD, 4,4'-DDE, 4,4'-DDT, and Dieldrin) were detected exceeding UUSCOs in eight of the ten soil borings (excluding SB002 and SB008) but were within General Fill Requirements.

PCBs and Chlorinated Herbicides were not detected at concentrations exceeding UUSCOs in samples collected from the soil borings.

4.3 Soil Sampling Discussion

The surface soil sample grids and soil borings are depicted and characterized in **Figures 3** and **4** as follows:

- Sample grids and soil borings where soils meet Unrestricted Use SCOs.
- Sample grids and soil borings where soils exceed Unrestricted Use SCOs but meet General Fill Requirements.
- Sample grids and soil borings where soils exceed General Fill Requirements.
- Sample grids and soil borings where soils exceed Restricted Use Fill Requirements.

General soil management requirements for each of these categories are detailed below. A color-coded map showing the layout of grids and disposal/reuse category is included as **Figure 3**.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

4.3.1 *Soils Meet Unrestricted Use SCOs*

In sample grids where soils meet Part 375 Unrestricted Use SCOs, soils will not require special handling and may be reused onsite or disposed of offsite as clean fill material.

Surface soil Grid E and soil borings SB002 and SB008 meet Unrestricted SCOs and do not require any special handling.

4.3.2 *Soils Meet General Fill Requirements*

In sample grids where soils exceed Part 375 Unrestricted Use SCOs but meet Part 360 General Fill Requirements, soils may be reused or disposed of as follows:

- Soils may be reused in the same excavation or as fill material in other areas of the Site with similar physical characteristics in accordance with 6 NYCRR Part 360.13(c).
- Excess soils may be transferred off site for use as General Fill material at another project site in accordance with 6 NYCRR Part 360.13(f) and 6 NYCRR Part 360.13(g).
- Excess soils may be disposed of off-site at a properly permitted facility. Such soils may require additional sampling depending on the disposal facility's requirements.

Surface soil grids D, F, G, P, R, S, T, U, V, W, X, Y, Z, AA, and AB and soil borings SB001, SB003, SB004, SB005, SB006, and SB007 exceed Part 375 Unrestricted Use SCOs but meet Part 360 General Fill Requirements and should be handled as described above.

4.3.3 *Soils Exceed General Fill Requirements*

In sample grids where soils exceed Part 375 Unrestricted Use SCOs and Part 360 General Fill Requirements, soils may be reused or disposed of as follows:

- Soils may be reused in the same excavation or as fill material in other areas of the Site with similar physical characteristics provided the relocated fill material is covered with a permanent impervious surface and/or a minimum of 12 inches of soil or fill material that meets General Fill requirements in accordance with 6 NYCRR Part 360.13(c).
- Excess soils may be transferred off site for use as Restricted Fill material at another project site in accordance with 6 NYCRR Part 360.13(f) and 6 NYCRR Part 360.13(g). Restricted Fill material may only be beneficially reused offsite for engineered use for embankments or subgrade in transportation corridors,

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

or on sites where in-situ materials exceed Restricted-Use Fill or Limited-Use Fill criteria. Such material must be placed above the seasonal high-water table.

- Excess soils may be disposed of off-site at a properly permitted facility. Such soils may require additional sampling depending on the disposal facility's requirements.

Surface soil grids A, B, C, H, I, J, K, L, M, N, O, Q, AC, and AD and soil boring SB010 exceed Part 375 Unrestricted Use SCOs and Part 360 General Fill Requirements should be handled as described above.

4.3.4 Soils Exceed Restricted Fill Requirements

In sample grids where soils exceed Part 375 Unrestricted Use SCOs, Part 360 General Fill Requirements and Part 360 Restricted Use Fill requirements, soils may be reused or disposed of as follows:

- Soils exceeding Restricted Fill requirements may not be placed in Nassau or Suffolk counties and as such may not be beneficially reused on Long Island.
- Excess soils that meet Limited Use Fill requirements in Table 2 of 6 NYCRR Part 360 may be transferred off site for use as Limited Use Fill material at another project site in accordance with 6 NYCRR Part 360.13(f) and 6 NYCRR Part 360.13(g). Limited Use Fill material may only be beneficially reused offsite for engineered use under foundations and pavements above the seasonal high-water table. Such material may not be reused in Nassau or Suffolk counties.
- Excess soils that exceed Limited Use fill requirements or meet Limited use fill requirements but will not be beneficially reused off-site, must be disposed of off-site at a properly permitted facility. Such soils may require additional sampling depending on the disposal facility's requirements.

Soil boring SB009 exceeds Restricted Fill requirements and soil surrounding this boring may not be reused onsite. If disturbed during construction, soils from this area should be segregated and disposed of offsite.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

5.0 CONCLUSIONS AND RECOMMENDATIONS

PWGC has performed a soil characterization in accordance with PWGC's Soil and Materials Management Plan. The scope of work for the soil characterization included surficial soil sampling to evaluate the historical agricultural use of the property, and sampling along the western property boundary to evaluate potential impact related to the adjacent Sky Materials Site.

5.1 Conclusions

Based on the results of the soil characterization, PWGC offers the following conclusions:

- Surficial soil sampling across the site identified shallow soils containing pesticide and/or metals impact exceeding UUSCOs in each sample grid except Grid E. Impact identified appears to be typical of former agricultural usage.
- Surficial impact generally appears to be limited to shallow soils (0 to 2 feet below grade). Based on the size of the site approximately 95,000 cubic yards of material is impacted with metals and/or pesticides typically associated with former agricultural usage above UUSCOs.
- Samples collected on the western property boundary exceeded UUSCOs for pesticides in eight of the ten soil borings. Fill material encountered in SB009 and SB010 contained SVOCs/metals exceeding Fill Material Requirements. SVOCs and certain metals (cadmium, lead, zinc) were not encountered in other samples collected onsite and may have originated from the adjacent Sky Materials Site.
- Based on soil sample results:
    - Surficial soils in Grid E can be reused without restrictions.
    - Surficial soils in remaining sample grids impacted with metals and/or pesticides typically associated with former agricultural usage may be reused onsite in accordance with 6 NYCRR Part 360.13.
    - Soils in the vicinity of soil boring SB009 should be properly disposed of offsite.
    - Soil disposal/reuse requirements are detailed in Section 4.3 and soil disposal/reuse categories are illustrated in Figures 3 and 4.

5.2 Recommendations

Based on the conclusions detailed above, PWGC offers the following recommendation for the subject property:

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

- Once construction activities for the proposed Calverton Industrial Park start, excavated soils should be appropriately handled following the guidelines detailed in Section 4.3.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

6.0 REFERENCES

6 NYCRR Part 375 Environmental Remediation Programs Subparts 375-1 to 375-4 & 375-6.

6 NYCRR Part 360.13, Special Requirements for Pre-Determined Beneficial Use of Fill Material

DER-10 / Technical Guidance for Site Investigation and Remediation.

H2M – 4285 Middle Country Road, Calverton, NY – Phase I ESA Report, December 2019

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

7.0 LIMITATIONS

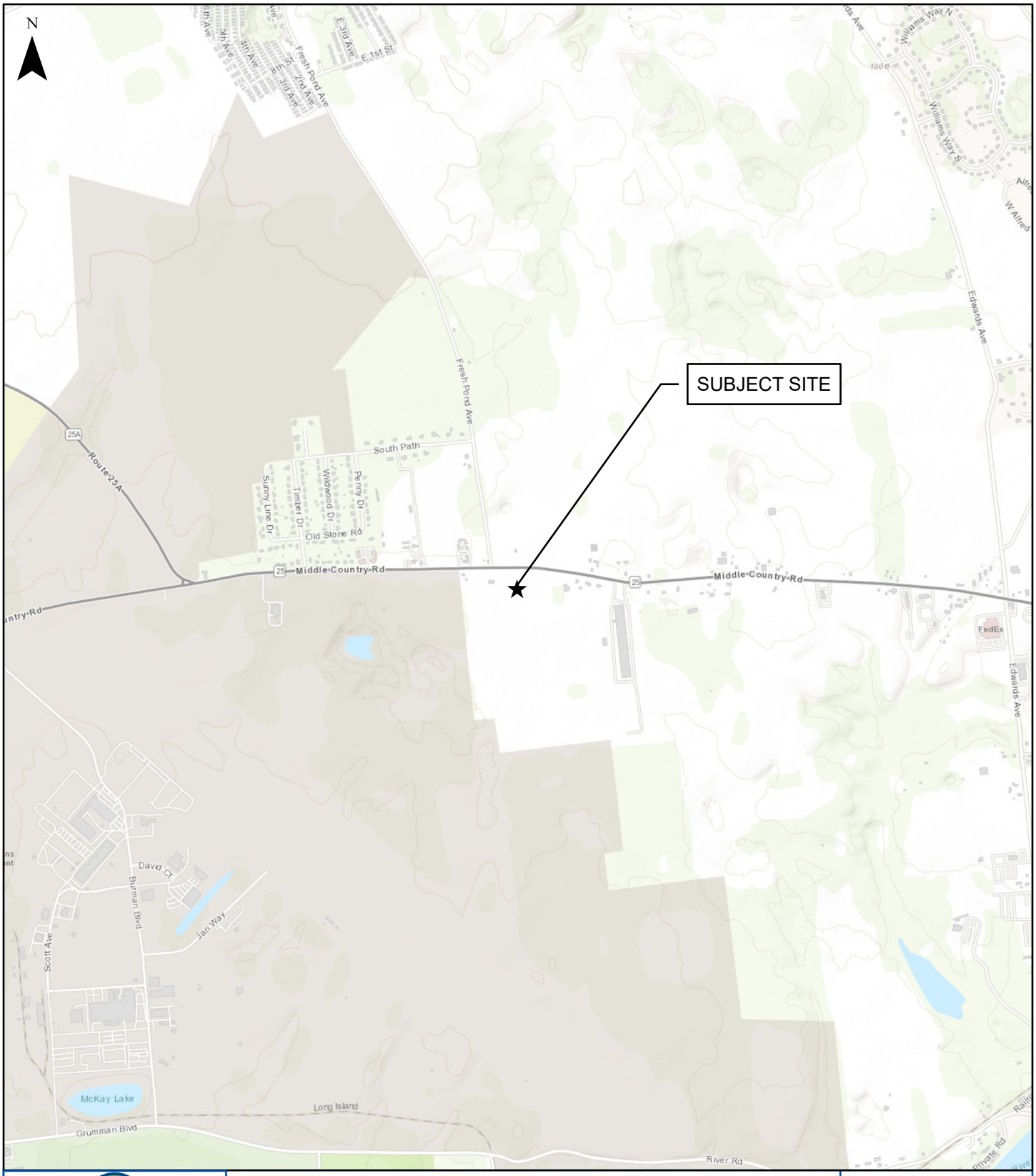
The conclusions presented in this report are professional opinions based on the data described in this report. These opinions have been arrived at in accordance with currently accepted engineering and hydrogeologic standards and practices applicable to this location, and are subject to the following inherent limitations:

1. The data presented in this report are from visual inspections and examination of records prepared by others. The passage of time, manifestation of latent conditions, or occurrence of future events may require further exploration of the site, analysis of data, and re-evaluation of the findings, observations, and conclusions presented in this report.
2. The data reported and the findings, observations, and conclusions expressed are limited by the scope of work. The scope of work was defined by the request of the client.
3. No warranty or guarantee, whether expressed or implied, is made with respect to the data reported, findings, observations, or conclusions. These are based solely upon site conditions in existence at the time of the investigation, and other information obtained and reviewed by PWGC.
4. The conclusions presented in this report are professional opinions based on data described in this report. They are intended only for the purpose, site location, and project indicated. This report is not a definitive study of contamination at the site and should not be interpreted as such.
5. This report is based, in part, on information supplied to PWGC by third-party sources. While efforts have been made to substantiate this third-party information, PWGC cannot attest to the completeness or accuracy of information provided by others.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

FIGURES

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353
PWGROSSER.COM
630 JOHNSON AVENUE, STE 7
BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON



SITE LOCATION

4285 Middle Country Road
Calverton, NY

0 ¼ ½ ¾ 1 Miles

PWGC
CLIENT DRIVEN SOLUTIONS
P.W. Grosser Consulting, Inc.
630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

Project:	HKV2101
Date:	11/24/2021
Designed by:	MP
Drawn by:	OA
Approved by:	MP
Figure No:	1

Document Path: W:\Projects\E-L\HKV\2101\Map Files\Map Files.aprx

Document Path: W:\Projects\E-L\HKV\2101\Map Files\Map Files.aprx

PWGC
CLIENT DRIVEN SOLUTIONS
P.W. Grosser Consulting, Inc.
630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING AND RELATED DOCUMENTS IS A VIOLATION OF SEC. 7209 OF THE N.Y.S. EDUCATION LAW

DRAWING PREPARED FOR:

REVISION	DATE	INITIAL	COMMENTS

DRAWING INFORMATION:

Project:	HKV2101	Designed by:	MP
Date:	11/24/2021	Drawn by:	OA
Scale:	AS SHOWN	Approved by:	MP

Site Plan

4285 Middle Country Road
Calverton, NY

FIGURE NO:

2

PWGC
CLIENT DRIVEN SOLUTIONS
P.W. Grosser Consulting, Inc.
630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING AND RELATED DOCUMENTS IS A VIOLATION OF SEC. 7209 OF THE N.Y.S. EDUCATION LAW

DRAWING PREPARED FOR:

REVISION	DATE	INITIAL	COMMENTS

DRAWING INFORMATION:

Project:	HKV2101	Designed by:	MP
Date:	12/20/2021	Drawn by:	OA
Scale:	AS SHOWN	Approved by:	MP

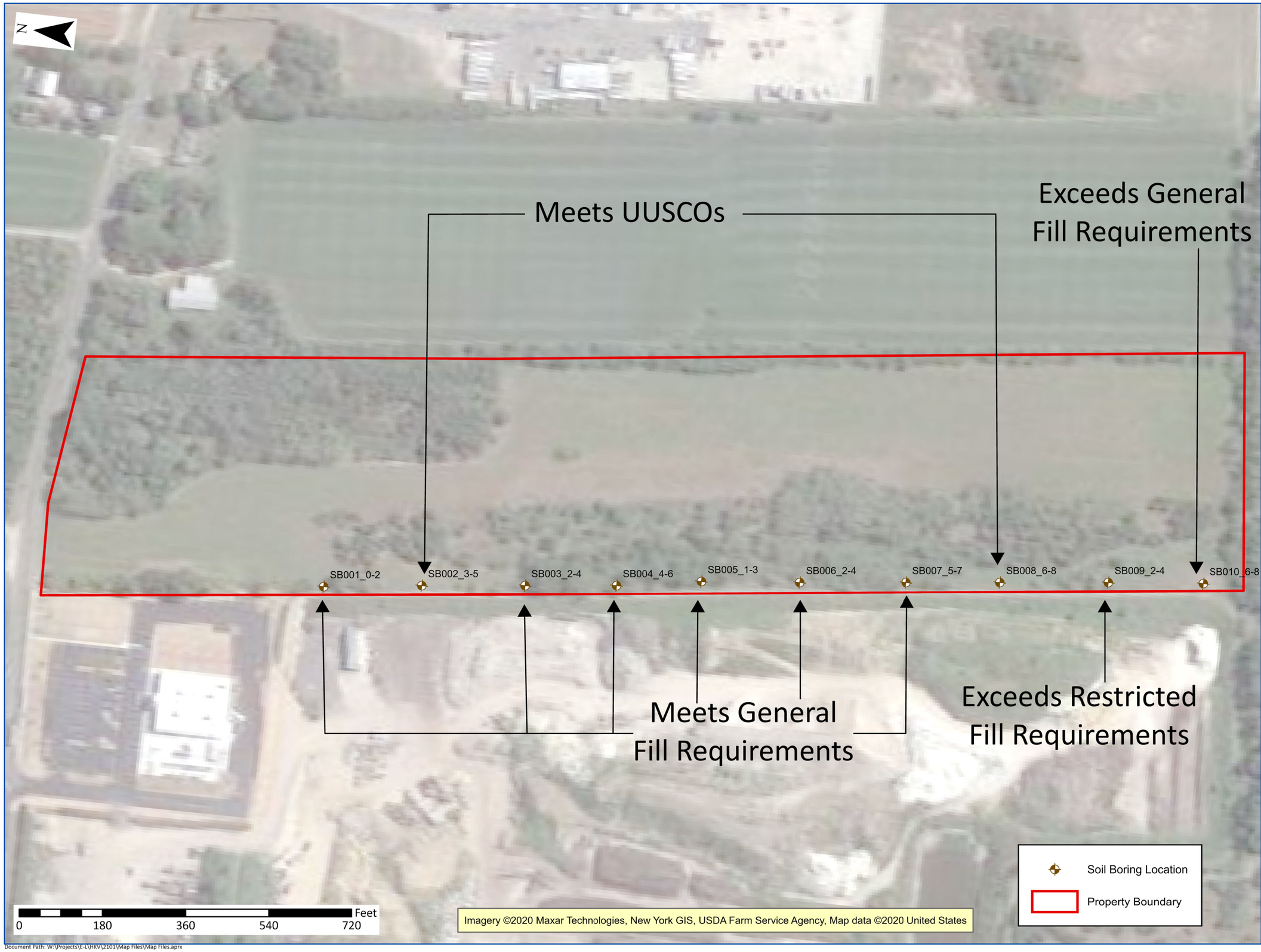
Soil Criteria

4285 Middle Country Road
Calverton, NY

FIGURE NO:

3

Document Path: W:\Projects\E-L\HKV\2101\Map Files\Map Files.aprx



PWGC
CLIENT DRIVEN SOLUTIONS
P.W. Grosser Consulting, Inc.
630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING AND RELATED DOCUMENTS IS A VIOLATION OF SEC. 7209 OF THE N.Y.S. EDUCATION LAW

DRAWING PREPARED FOR:

REVISION	DATE	INITIAL	COMMENTS

DRAWING INFORMATION:

Project:	HKV2101	Designed by:	TM
Date:	12/28/2021	Drawn by:	OA
Scale:	AS SHOWN	Approved by:	TM

SOIL BORING SAMPLE LOCATIONS

4285 Middle Country Road
Calverton, NY

FIGURE NO:

4

Document Path: W:\Projects\E-L\HKV\2101\Map Files\Map Files.aprx

TABLES

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353
PWGROSSER.COM
630 JOHNSON AVENUE, STE 7
BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

Table 1
Soil Analytical for Volatile Organics
4285 Middle Country Rd,
Calverton, NY

Client Sample ID: Laboratory ID: Sampling Date:	NYSDEC Protection of Ground water[1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	SB001_0-2 L2155380-01 10/11/2021	SB002_3-5 L2155380-02 10/11/2021	SB003_2-4 L2155380-03 10/11/2021	SB004_4-6 L2155380-04 10/11/2021
Volatile Organics by 8260/5035 in mg/kg							
1,1,1,2-Tetrachloroethane	NS	NS	NS	0.00047 U	0.00054 U	0.00045 U	0.00048 U
1,1,1-Trichloroethane	0.68	100	0.68	0.00047 U	0.00054 U	0.00045 U	0.00048 U
1,1,2,2-Tetrachloroethane	NS	NS	NS	0.00047 U	0.00054 U	0.00045 U	0.00048 U
1,1,2-Trichloroethane	NS	NS	NS	0.00094 U	0.0011 U	0.0009 U	0.00096 U
1,1-Dichloroethane	0.27	19	0.27	0.00094 U	0.0011 U	0.0009 U	0.00096 U
1,1-Dichloroethene	0.33	100	0.33	0.00094 U	0.0011 U	0.0009 U	0.00096 U
1,1-Dichloropropene	NS	NS	NS	0.00047 U	0.00054 U	0.00045 U	0.00048 U
1,2,3-Trichlorobenzene	NS	NS	NS	0.0019 U	0.0022 U	0.0018 U	0.0019 U
1,2,3-Trichloropropane	NS	NS	NS	0.0019 U	0.0022 U	0.0018 U	0.0019 U
1,2,4,5-Tetramethylbenzene	NS	NS	NS	0.0019 U	0.0022 U	0.0018 U	0.0019 U
1,2,4-Trichlorobenzene	NS	NS	NS	0.0019 U	0.0022 U	0.0018 U	0.0019 U
1,2,4-Trimethylbenzene	3.6	47	3.6	0.0019 U	0.0022 U	0.0018 U	0.0019 U
1,2-Dibromo-3-chloropropane	NS	NS	NS	0.0028 U	0.0032 U	0.0027 U	0.0029 U
1,2-Dibromoethane	NS	NS	NS	0.00094 U	0.0011 U	0.0009 U	0.00096 U
1,2-Dichlorobenzene	1.1	100.0	1.1	0.0019 U	0.0022 U	0.0018 U	0.0019 U
1,2-Dichloroethane	0.02	2.3	0.02	0.00094 U	0.0011 U	0.0009 U	0.00096 U
1,2-Dichloroethene, Total	NS	NS	NS	0.00094 U	0.0011 U	0.0009 U	0.00096 U
1,2-Dichloropropane	NS	NS	NS	0.00094 U	0.0011 U	0.0009 U	0.00096 U
1,3,5-Trimethylbenzene	8.4	47	8	0.0019 U	0.0022 U	0.0018 U	0.0019 U
1,3-Dichlorobenzene	2.4	17.0	2.4	0.0019 U	0.0022 U	0.0018 U	0.0019 U
1,3-Dichloropropane	NS	NS	NS	0.0019 U	0.0022 U	0.0018 U	0.0019 U
1,3-Dichloropropene, Total	NS	NS	NS	0.00047 U	0.00054 U	0.00045 U	0.00048 U
1,4-Dichlorobenzene	1.8	9.8	1.8	0.0019 U	0.0022 U	0.0018 U	0.0019 U
1,4-Dioxane	0.1	9.8	0.1	0.075 U	0.086 U	0.072 U	0.077 U
2,2-Dichloropropane	NS	NS	NS	0.0019 U	0.0022 U	0.0018 U	0.0019 U
2-Butanone	0.12	100	0.1	0.0094 U	0.011 U	0.009 U	0.0096 U
2-Hexanone	NS	NS	NS	0.0094 U	0.011 U	0.009 U	0.0096 U
4-Methyl-2-pentanone	NS	NS	NS	0.0094 U	0.011 U	0.009 U	0.0096 U
Acetone	0.05	100	0.05	0.0094 U	0.011 U	0.009 U	0.0096 U
Acrylonitrile	NS	NS	NS	0.0038 U	0.0043 U	0.0036 U	0.0038 U
Benzene	0.06	2.9	0.1	0.00047 U	0.00054 U	0.00045 U	0.00048 U
Bromobenzene	NS	NS	NS	0.0019 U	0.0022 U	0.0018 U	0.0019 U
Bromochloromethane	NS	NS	NS	0.0019 U	0.0022 U	0.0018 U	0.0019 U
Bromodichloromethane	NS	NS	NS	0.00047 U	0.00054 U	0.00045 U	0.00048 U
Bromoform	NS	NS	NS	0.0038 U	0.0043 U	0.0036 U	0.0038 U
Bromomethane	NS	NS	NS	0.0019 U	0.0022 U	0.0018 U	0.0019 U
Carbon disulfide	NS	NS	NS	0.0094 U	0.011 U	0.009 U	0.0096 U
Carbon tetrachloride	0.76	1.4	0.76	0.00094 U	0.0011 U	0.0009 U	0.00096 U
Chlorobenzene	1.1	100.0	1.1	0.00047 U	0.00054 U	0.00045 U	0.00048 U
Chloroethane	NS	NS	NS	0.0019 U	0.0022 U	0.0018 U	0.0019 U
Chloroform	0.37	10	0.4	0.0014 U	0.0016 U	0.0014 U	0.0014 U
Chloromethane	NS	NS	NS	0.0038 U	0.0043 U	0.0036 U	0.0038 U
cis-1,2-Dichloroethene	0.25	59	0.25	0.00094 U	0.0011 U	0.0009 U	0.00096 U
cis-1,3-Dichloropropene	NS	NS	NS	0.00047 U	0.00054 U	0.00045 U	0.00048 U
Dibromochloromethane	NS	NS	NS	0.00094 U	0.0011 U	0.0009 U	0.00096 U
Dibromomethane	NS	NS	NS	0.0019 U	0.0022 U	0.0018 U	0.0019 U
Dichlorodifluoromethane	NS	NS	NS	0.0094 U	0.011 U	0.009 U	0.0096 U
Ethyl ether	NS	NS	NS	0.0019 U	0.0022 U	0.0018 U	0.0019 U
Ethylbenzene	1	30	1	0.00094 U	0.0011 U	0.0009 U	0.00096 U
Hexachlorobutadiene	NS	NS	NS	0.0038 U	0.0043 U	0.0036 U	0.0038 U
Isopropylbenzene	NS	NS	NS	0.00094 U	0.0011 U	0.0009 U	0.00096 U
Methyl tert butyl ether	0.93	62	0.93	0.0019 U	0.0022 U	0.0018 U	0.0019 U
Methylene chloride	0.05	51	0.05	0.0047 U	0.0054 U	0.0045 U	0.0048 U
n-Butylbenzene	12	100	12	0.00094 U	0.0011 U	0.0009 U	0.00096 U
n-Propylbenzene	3.9	100	3.9	0.00094 U	0.0011 U	0.0009 U	0.00096 U
Naphthalene	12	100	12	0.0038 U	0.0043 U	0.0036 U	0.0038 U
o-Chlorotoluene	NS	NS	NS	0.0019 U	0.0022 U	0.0018 U	0.0019 U
o-Xylene	NS	NS	NS	0.00094 U	0.0011 U	0.0009 U	0.00096 U
p-Chlorotoluene	NS	NS	NS	0.0019 U	0.0022 U	0.0018 U	0.0019 U
p-Diethylbenzene	NS	NS	NS	0.0019 U	0.0022 U	0.0018 U	0.0019 U
p-Ethyltoluene	NS	NS	NS	0.0019 U	0.0022 U	0.0018 U	0.0019 U
p-Isopropyltoluene	NS	NS	NS	0.00094 U	0.0011 U	0.0009 U	0.00096 U
p/m-Xylene	NS	NS	NS	0.0019 U	0.0022 U	0.0018 U	0.0019 U
sec-Butylbenzene	11	100	11	0.00094 U	0.0011 U	0.0009 U	0.00096 U
Styrene	NS	NS	NS	0.00094 U	0.0011 U	0.0009 U	0.00096 U
tert-Butylbenzene	5.9	100	5.9	0.0019 U	0.0022 U	0.0018 U	0.0019 U
Tetrachloroethene	1.3	5.5	1.3	0.00047 U	0.00054 U	0.00045 U	0.00048 U
Toluene	0.7	100	0.7	0.00094 U	0.0011 U	0.0009 U	0.00096 U
trans-1,2-Dichloroethene	0.19	100	0.19	0.0014 U	0.0016 U	0.0014 U	0.0014 U
trans-1,3-Dichloropropene	NS	NS	NS	0.00094 U	0.0011 U	0.0009 U	0.00096 U
trans-1,4-Dichloro-2-butene	NS	NS	NS	0.0047 U	0.0054 U	0.0045 U	0.0048 U
Trichloroethene	0.47	10	0.47	0.00047 U	0.00054 U	0.00045 U	0.00048 U
Trichlorofluoromethane	NS	NS	NS	0.0038 U	0.0043 U	0.0036 U	0.0038 U
Vinyl acetate	NS	NS	NS	0.0094 U	0.011 U	0.009 U	0.0096 U
Vinyl chloride	0.02	0.21	0.02	0.00094 U	0.0011 U	0.0009 U	0.00096 U
Xylenes, Total	1.6	100	0.26	0.00094 U	0.0011 U	0.0009 U	0.00096 U
Total VOCs				0	0	0	0

Notes:
(1) New York NYCRR Part 375 Groundwater Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.
(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.
(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06
NS - No Standard
I - The lower value for the two columns has been reported due to obvious interference.
P- The RPD between the results for the two columns exceeds the method-specified criteria.
U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use SCO
Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO
Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 1
Soil Analytical for Volatile Organics
4285 Middle Country Rd,
Calverton, NY

Client Sample ID: Laboratory ID: Sampling Date:	NYSDEC Protection of Ground water[1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	SB005_1-3 L2155380-05 10/11/2021	SB006_2-4 L2155380-06 10/11/2021	SB007_5-7 L2155380-07 10/11/2021	SB008_6-8 L2155380-08 10/11/2021
Volatile Organics by 8260/5035 in mg/kg							
1,1,1,2-Tetrachloroethane	NS	NS	NS	0.00053 U	0.00045 U	0.00052 U	0.00048 U
1,1,1-Trichloroethane	0.68	100	0.68	0.00053 U	0.00045 U	0.00052 U	0.00048 U
1,1,2,2-Tetrachloroethane	NS	NS	NS	0.00053 U	0.00045 U	0.00052 U	0.00048 U
1,1,2-Trichloroethane	NS	NS	NS	0.0011 U	0.0009 U	0.001 U	0.00095 U
1,1-Dichloroethane	0.27	19	0.27	0.0011 U	0.0009 U	0.001 U	0.00095 U
1,1-Dichloroethene	0.33	100	0.33	0.0011 U	0.0009 U	0.001 U	0.00095 U
1,1-Dichloropropene	NS	NS	NS	0.00053 U	0.00045 U	0.00052 U	0.00048 U
1,2,3-Trichlorobenzene	NS	NS	NS	0.0021 U	0.0018 U	0.0021 U	0.0019 U
1,2,3-Trichloropropane	NS	NS	NS	0.0021 U	0.0018 U	0.0021 U	0.0019 U
1,2,4,5-Tetramethylbenzene	NS	NS	NS	0.0021 U	0.0018 U	0.0021 U	0.0019 U
1,2,4-Trichlorobenzene	NS	NS	NS	0.0021 U	0.0018 U	0.0021 U	0.0019 U
1,2,4-Trimethylbenzene	3.6	47	3.6	0.0021 U	0.0018 U	0.0021 U	0.0019 U
1,2-Dibromo-3-chloropropane	NS	NS	NS	0.0032 U	0.0027 U	0.0031 U	0.0029 U
1,2-Dibromoethane	NS	NS	NS	0.0011 U	0.0009 U	0.001 U	0.00095 U
1,2-Dichlorobenzene	1.1	100.0	1.1	0.0021 U	0.0018 U	0.0021 U	0.0019 U
1,2-Dichloroethane	0.02	2.3	0.02	0.0011 U	0.0009 U	0.001 U	0.00095 U
1,2-Dichloroethene, Total	NS	NS	NS	0.0011 U	0.0009 U	0.001 U	0.00095 U
1,2-Dichloropropane	NS	NS	NS	0.0011 U	0.0009 U	0.001 U	0.00095 U
1,3,5-Trimethylbenzene	8.4	47	8	0.0021 U	0.0018 U	0.0021 U	0.0019 U
1,3-Dichlorobenzene	2.4	17.0	2.4	0.0021 U	0.0018 U	0.0021 U	0.0019 U
1,3-Dichloropropane	NS	NS	NS	0.0021 U	0.0018 U	0.0021 U	0.0019 U
1,3-Dichloropropene, Total	NS	NS	NS	0.00053 U	0.00045 U	0.00052 U	0.00048 U
1,4-Dichlorobenzene	1.8	9.8	1.8	0.0021 U	0.0018 U	0.0021 U	0.0019 U
1,4-Dioxane	0.1	9.8	0.1	0.085 U	0.072 U	0.084 U	0.076 U
2,2-Dichloropropane	NS	NS	NS	0.0021 U	0.0018 U	0.0021 U	0.0019 U
2-Butanone	0.12	100	0.1	0.011 U	0.009 U	0.01 U	0.0095 U
2-Hexanone	NS	NS	NS	0.011 U	0.009 U	0.01 U	0.0095 U
4-Methyl-2-pentanone	NS	NS	NS	0.011 U	0.009 U	0.01 U	0.0095 U
Acetone	0.05	100	0.05	0.0073 J	0.009 U	0.0051 J	0.0095 U
Acrylonitrile	NS	NS	NS	0.0043 U	0.0036 U	0.0042 U	0.0038 U
Benzene	0.06	2.9	0.1	0.00053 U	0.00045 U	0.00052 U	0.00048 U
Bromobenzene	NS	NS	NS	0.0021 U	0.0018 U	0.0021 U	0.0019 U
Bromochloromethane	NS	NS	NS	0.0021 U	0.0018 U	0.0021 U	0.0019 U
Bromodichloromethane	NS	NS	NS	0.00053 U	0.00045 U	0.00052 U	0.00048 U
Bromoform	NS	NS	NS	0.0043 U	0.0036 U	0.0042 U	0.0038 U
Bromomethane	NS	NS	NS	0.0021 U	0.0018 U	0.0021 U	0.0019 U
Carbon disulfide	NS	NS	NS	0.011 U	0.009 U	0.01 U	0.0095 U
Carbon tetrachloride	0.76	1.4	0.76	0.0011 U	0.0009 U	0.001 U	0.00095 U
Chlorobenzene	1.1	100.0	1.1	0.00053 U	0.00045 U	0.00052 U	0.00048 U
Chloroethane	NS	NS	NS	0.0021 U	0.0018 U	0.0021 U	0.0019 U
Chloroform	0.37	10	0.4	0.0016 U	0.0013 U	0.0016 U	0.0014 U
Chloromethane	NS	NS	NS	0.0043 U	0.0036 U	0.0042 U	0.0038 U
cis-1,2-Dichloroethene	0.25	59	0.25	0.0011 U	0.0009 U	0.001 U	0.00095 U
cis-1,3-Dichloropropene	NS	NS	NS	0.00053 U	0.00045 U	0.00052 U	0.00048 U
Dibromochloromethane	NS	NS	NS	0.0011 U	0.0009 U	0.001 U	0.00095 U
Dibromomethane	NS	NS	NS	0.0021 U	0.0018 U	0.0021 U	0.0019 U
Dichlorodifluoromethane	NS	NS	NS	0.011 U	0.009 U	0.01 U	0.0095 U
Ethyl ether	NS	NS	NS	0.0021 U	0.0018 U	0.0021 U	0.0019 U
Ethylbenzene	1	30	1	0.0011 U	0.0009 U	0.001 U	0.00095 U
Hexachlorobutadiene	NS	NS	NS	0.0043 U	0.0036 U	0.0042 U	0.0038 U
Isopropylbenzene	NS	NS	NS	0.0011 U	0.0009 U	0.001 U	0.00095 U
Methyl tert butyl ether	0.93	62	0.93	0.0021 U	0.0018 U	0.0021 U	0.0019 U
Methylene chloride	0.05	51	0.05	0.0053 U	0.0045 U	0.0052 U	0.0048 U
n-Butylbenzene	12	100	12	0.0011 U	0.0009 U	0.001 U	0.00095 U
n-Propylbenzene	3.9	100	3.9	0.0011 U	0.0009 U	0.001 U	0.00095 U
Naphthalene	12	100	12	0.0043 U	0.0036 U	0.0042 U	0.0038 U
o-Chlorotoluene	NS	NS	NS	0.0021 U	0.0018 U	0.0021 U	0.0019 U
o-Xylene	NS	NS	NS	0.0011 U	0.0009 U	0.001 U	0.00095 U
p-Chlorotoluene	NS	NS	NS	0.0021 U	0.0018 U	0.0021 U	0.0019 U
p-Diethylbenzene	NS	NS	NS	0.0021 U	0.0018 U	0.0021 U	0.0019 U
p-Ethyltoluene	NS	NS	NS	0.0021 U	0.0018 U	0.0021 U	0.0019 U
p-Isopropyltoluene	NS	NS	NS	0.0011 U	0.0009 U	0.001 U	0.00095 U
p/m-Xylene	NS	NS	NS	0.0021 U	0.0018 U	0.0021 U	0.0019 U
sec-Butylbenzene	11	100	11	0.0011 U	0.0009 U	0.001 U	0.00095 U
Styrene	NS	NS	NS	0.0011 U	0.0009 U	0.001 U	0.00095 U
tert-Butylbenzene	5.9	100	5.9	0.0021 U	0.0018 U	0.0021 U	0.0019 U
Tetrachloroethene	1.3	5.5	1.3	0.00053 U	0.00045 U	0.00052 U	0.00048 U
Toluene	0.7	100	0.7	0.0011 U	0.0009 U	0.001 U	0.00095 U
trans-1,2-Dichloroethene	0.19	100	0.19	0.0016 U	0.0013 U	0.0016 U	0.0014 U
trans-1,3-Dichloropropene	NS	NS	NS	0.0011 U	0.0009 U	0.001 U	0.00095 U
trans-1,4-Dichloro-2-butene	NS	NS	NS	0.0053 U	0.0045 U	0.0052 U	0.0048 U
Trichloroethene	0.47	10	0.47	0.00053 U	0.00045 U	0.00052 U	0.00048 U
Trichlorofluoromethane	NS	NS	NS	0.0043 U	0.0036 U	0.0042 U	0.0038 U
Vinyl acetate	NS	NS	NS	0.011 U	0.009 U	0.01 U	0.0095 U
Vinyl chloride	0.02	0.21	0.02	0.0011 U	0.0009 U	0.001 U	0.00095 U
Xylenes, Total	1.6	100	0.26	0.0011 U	0.0009 U	0.001 U	0.00095 U
Total VOCs				0.0073	0	0.0051	0

Notes:
(1) New York NYCRR Part 375 Groundwater Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.
(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.
(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06
NS - No Standard
I - The lower value for the two columns has been reported due to obvious interference.
P- The RPD between the results for the two columns exceeds the method-specified criteria.
U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use SCO
Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO
Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 1
Soil Analytical for Volatile Organics
4285 Middle Country Rd,
Calverton, NY

Client Sample ID: Laboratory ID: Sampling Date:	NYSDEC Protection of Ground water[1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	SB009_2-4 L2155380-09 10/11/2021	SB010_6-8 L2155380-10 10/11/2021	GRID A_0-2 L2155998-01 10/13/2021	GRID A_18-24 L2155998-02 10/13/2021
Volatile Organics by 8260/5035 in mg/kg							
1,1,1,2-Tetrachloroethane	NS	NS	NS	0.00045 U	0.00045 U	0.00068 U	0.001 U
1,1,1-Trichloroethane	0.68	100	0.68	0.00045 U	0.00045 U	0.00068 U	0.001 U
1,1,2,2-Tetrachloroethane	NS	NS	NS	0.00045 U	0.00045 U	0.00068 U	0.001 U
1,1,2-Trichloroethane	NS	NS	NS	0.0009 U	0.0009 U	0.0014 U	0.0016 U
1,1-Dichloroethane	0.27	19	0.27	0.0009 U	0.0009 U	0.0014 U	0.0016 U
1,1-Dichloroethene	0.33	100	0.33	0.0009 U	0.0009 U	0.0014 U	0.001 U
1,1-Dichloropropene	NS	NS	NS	0.00045 U	0.00045 U	0.00068 U	0.0052 U
1,2,3-Trichlorobenzene	NS	NS	NS	0.0018 U	0.0018 U	0.0027 U	0.0052 U
1,2,3-Trichloropropane	NS	NS	NS	0.0018 U	0.0018 U	0.0027 U	0.01 U
1,2,4,5-Tetramethylbenzene	NS	NS	NS	0.0018 U	0.0018 U	0.0027 U	0.0042 U
1,2,4-Trichlorobenzene	NS	NS	NS	0.0018 U	0.0018 U	0.0027 U	0.0052 U
1,2,4-Trimethylbenzene	3.6	47	3.6	0.0018 U	0.0018 U	0.0027 U	0.0052 U
1,2-Dibromo-3-chloropropane	NS	NS	NS	0.0027 U	0.0027 U	0.0041 U	0.0052 U
1,2-Dibromoethane	NS	NS	NS	0.0009 U	0.0009 U	0.0014 U	0.0042 U
1,2-Dichlorobenzene	1.1	100.0	1.1	0.0018 U	0.0018 U	0.0027 U	0.0052 U
1,2-Dichloroethane	0.02	2.3	0.02	0.0009 U	0.0009 U	0.0014 U	0.001 U
1,2-Dichloroethene, Total	NS	NS	NS	0.0009 U	0.0009 U	0.0014 U	0.001 U
1,2-Dichloropropane	NS	NS	NS	0.0009 U	0.0009 U	0.0014 U	0.0037 U
1,3,5-Trimethylbenzene	8.4	47	8	0.0018 U	0.0018 U	0.0027 U	0.0052 U
1,3-Dichlorobenzene	2.4	17.0	2.4	0.0018 U	0.0018 U	0.0027 U	0.0052 U
1,3-Dichloropropane	NS	NS	NS	0.0018 U	0.0018 U	0.0027 U	0.0052 U
1,3-Dichloropropene, Total	NS	NS	NS	0.00045 U	0.00045 U	0.00068 U	0.001 U
1,4-Dichlorobenzene	1.8	9.8	1.8	0.0018 U	0.0018 U	0.0027 U	0.0052 U
1,4-Dioxane	0.1	9.8	0.1	0.072 U	0.072 U	0.11 U	0.042 U
2,2-Dichloropropane	NS	NS	NS	0.0018 U	0.0018 U	0.0027 U	0.0052 U
2-Butanone	0.12	100	0.1	0.009 U	0.029	0.014 U	0.01 U
2-Hexanone	NS	NS	NS	0.009 U	0.009 U	0.014 U	0.01 U
4-Methyl-2-pentanone	NS	NS	NS	0.009 U	0.009 U	0.014 U	0.01 U
Acetone	0.05	100	0.05	0.009 U	0.21	0.014 U	0.01 U
Acrylonitrile	NS	NS	NS	0.0036 U	0.0036 U	0.0054 U	0.01 U
Benzene	0.06	2.9	0.1	0.00016 J	0.0003 J	0.00068 U	0.001 U
Bromobenzene	NS	NS	NS	0.0018 U	0.0018 U	0.0027 U	0.0052 U
Bromochloromethane	NS	NS	NS	0.0018 U	0.0018 U	0.0027 U	0.0052 U
Bromodichloromethane	NS	NS	NS	0.00045 U	0.00045 U	0.00068 U	0.001 U
Bromoform	NS	NS	NS	0.0036 U	0.0036 U	0.0054 U	0.0042 U
Bromomethane	NS	NS	NS	0.0018 U	0.0018 U	0.0027 U	0.0021 U
Carbon disulfide	NS	NS	NS	0.009 U	0.009 U	0.014 U	0.01 U
Carbon tetrachloride	0.76	1.4	0.76	0.0009 U	0.0009 U	0.0014 U	0.001 U
Chlorobenzene	1.1	100.0	1.1	0.00045 U	0.00045 U	0.00068 U	0.001 U
Chloroethane	NS	NS	NS	0.0018 U	0.0018 U	0.0027 U	0.0021 U
Chloroform	0.37	10	0.4	0.0014 U	0.0014 U	0.002 U	0.0016 U
Chloromethane	NS	NS	NS	0.0036 U	0.0036 U	0.0054 U	0.0052 U
cis-1,2-Dichloroethene	0.25	59	0.25	0.0009 U	0.0009 U	0.0014 U	0.001 U
cis-1,3-Dichloropropene	NS	NS	NS	0.00045 U	0.00045 U	0.00068 U	0.001 U
Dibromochloromethane	NS	NS	NS	0.0009 U	0.0009 U	0.0014 U	0.001 U
Dibromomethane	NS	NS	NS	0.0018 U	0.0018 U	0.0027 U	0.01 U
Dichlorodifluoromethane	NS	NS	NS	0.009 U	0.009 U	0.014 U	0.01 U
Ethyl ether	NS	NS	NS	0.0018 U	0.0018 U	0.0027 U	0.0052 U
Ethylbenzene	1	30	1	0.0009 U	0.0009 U	0.0014 U	0.001 U
Hexachlorobutadiene	NS	NS	NS	0.0036 U	0.0036 U	0.0054 U	0.0052 U
Isopropylbenzene	NS	NS	NS	0.0009 U	0.0009 U	0.0014 U	0.001 U
Methyl tert butyl ether	0.93	62	0.93	0.0018 U	0.0018 U	0.0027 U	0.0021 U
Methylene chloride	0.05	51	0.05	0.0045 U	0.0045 U	0.0068 U	0.01 U
n-Butylbenzene	12	100	12	0.0009 U	0.0009 U	0.0014 U	0.001 U
n-Propylbenzene	3.9	100	3.9	0.0009 U	0.0009 U	0.0014 U	0.001 U
Naphthalene	12	100	12	0.0092	0.0036 U	0.0054 U	0.0052 U
o-Chlorotoluene	NS	NS	NS	0.0018 U	0.0018 U	0.0027 U	0.0052 U
o-Xylene	NS	NS	NS	0.0009 U	0.0009 U	0.0014 U	0.0021 U
p-Chlorotoluene	NS	NS	NS	0.0018 U	0.0018 U	0.0027 U	0.0052 U
p-Diethylbenzene	NS	NS	NS	0.0018 U	0.0018 U	0.0027 U	0.0042 U
p-Ethyltoluene	NS	NS	NS	0.0018 U	0.0018 U	0.0027 U	0.0042 U
p-Isopropyltoluene	NS	NS	NS	0.0009 U	0.0009 U	0.0014 U	0.001 U
p/m-Xylene	NS	NS	NS	0.0018 U	0.0018 U	0.0027 U	0.0021 U
sec-Butylbenzene	11	100	11	0.0009 U	0.0009 U	0.0014 U	0.001 U
Styrene	NS	NS	NS	0.0009 U	0.0009 U	0.0014 U	0.0021 U
tert-Butylbenzene	5.9	100	5.9	0.0018 U	0.0018 U	0.0027 U	0.0052 U
Tetrachloroethene	1.3	5.5	1.3	0.0018	0.00045 U	0.00068 U	0.001 U
Toluene	0.7	100	0.7	0.0009 U	0.0009 U	0.0014 U	0.0016 U
trans-1,2-Dichloroethene	0.19	100	0.19	0.0014 U	0.0014 U	0.002 U	0.0016 U
trans-1,3-Dichloropropene	NS	NS	NS	0.0009 U	0.0009 U	0.0014 U	0.001 U
trans-1,4-Dichloro-2-butene	NS	NS	NS	0.0045 U	0.0045 U	0.0068 U	0.0052 U
Trichloroethene	0.47	10	0.47	0.00045 U	0.00045 U	0.00068 U	0.001 U
Trichlorofluoromethane	NS	NS	NS	0.0036 U	0.0036 U	0.0054 U	0.0052 U
Vinyl acetate	NS	NS	NS	0.009 U	0.009 U	0.014 U	0.01 U
Vinyl chloride	0.02	0.21	0.02	0.0009 U	0.0009 U	0.0014 U	0.0021 U
Xylenes, Total	1.6	100	0.26	0.0009 U	0.0009 U	0.0014 U	0.0021 U
Total VOCs				0.01116	0.2393	0	0

Notes:
(1) New York NYCRR Part 375 Groundwater Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.
(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.
(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06
NS - No Standard
I - The lower value for the two columns has been reported due to obvious interference.
P- The RPD between the results for the two columns exceeds the method-specified criteria.
U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use SCO
Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO
Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 1
Soil Analytical for Volatile Organics
4285 Middle Country Rd,
Calverton, NY

Client Sample ID: Laboratory ID: Sampling Date:	NYSDEC Protection of Ground water[1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	GRID F_0-2 L2156337-03 10/14/2021	GRID L_0-2 L2156730-09 10/15/2021	GRID R_0-2 L2155998-13 10/13/2021	GRID X_0-2 L2156337-21 10/14/2021
Volatile Organics by 8260/5035 in mg/kg							
1,1,1,2-Tetrachloroethane	NS	NS	NS	0.00055 U	0.00068 U	0.0006 U	0.00056 U
1,1,1-Trichloroethane	0.68	100	0.68	0.00055 U	0.00068 U	0.0006 U	0.00056 U
1,1,2,2-Tetrachloroethane	NS	NS	NS	0.00055 U	0.00068 U	0.0006 U	0.00056 U
1,1,2-Trichloroethane	NS	NS	NS	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,1-Dichloroethane	0.27	19	0.27	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,1-Dichloroethene	0.33	100	0.33	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,1-Dichloropropene	NS	NS	NS	0.00055 U	0.00068 U	0.0006 U	0.00056 U
1,2,3-Trichlorobenzene	NS	NS	NS	0.0022 U	0.0027 U	0.0024 U	0.0022 U
1,2,3-Trichloropropane	NS	NS	NS	0.0022 U	0.0027 U	0.0024 U	0.0022 U
1,2,4,5-Tetramethylbenzene	NS	NS	NS	0.0022 U	0.0027 U	0.0024 U	0.0022 U
1,2,4-Trichlorobenzene	NS	NS	NS	0.0022 U	0.0027 U	0.0024 U	0.0022 U
1,2,4-Trimethylbenzene	3.6	47	3.6	0.0022 U	0.0027 U	0.0024 U	0.0022 U
1,2-Dibromo-3-chloropropane	NS	NS	NS	0.0033 U	0.0041 U	0.0036 U	0.0034 U
1,2-Dibromoethane	NS	NS	NS	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,2-Dichlorobenzene	1.1	100.0	1.1	0.0022 U	0.0027 U	0.0024 U	0.0022 U
1,2-Dichloroethane	0.02	2.3	0.02	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,2-Dichloroethene, Total	NS	NS	NS	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,2-Dichloropropane	NS	NS	NS	0.0011 U	0.0014 U	0.0012 U	0.0011 U
1,3,5-Trimethylbenzene	8.4	47	8	0.0022 U	0.0027 U	0.0024 U	0.0022 U
1,3-Dichlorobenzene	2.4	17.0	2.4	0.0022 U	0.0027 U	0.0024 U	0.0022 U
1,3-Dichloropropane	NS	NS	NS	0.0022 U	0.0027 U	0.0024 U	0.0022 U
1,3-Dichloropropene, Total	NS	NS	NS	0.00055 U	0.00068 U	0.0006 U	0.00056 U
1,4-Dichlorobenzene	1.8	9.8	1.8	0.0022 U	0.0027 U	0.0024 U	0.0022 U
1,4-Dioxane	0.1	9.8	0.1	0.088 U	0.11 U	0.096 U	0.09 U
2,2-Dichloropropane	NS	NS	NS	0.0022 U	0.0027 U	0.0024 U	0.0022 U
2-Butanone	0.12	100	0.1	0.011 U	0.014 U	0.012 U	0.011 U
2-Hexanone	NS	NS	NS	0.011 U	0.014 U	0.012 U	0.011 U
4-Methyl-2-pentanone	NS	NS	NS	0.011 U	0.014 U	0.012 U	0.011 U
Acetone	0.05	100	0.05	0.011 U	0.014 U	0.012 U	0.011 U
Acrylonitrile	NS	NS	NS	0.0044 U	0.0054 U	0.0048 U	0.0045 U
Benzene	0.06	2.9	0.1	0.00055 U	0.00068 U	0.0006 U	0.00056 U
Bromobenzene	NS	NS	NS	0.0022 U	0.0027 U	0.0024 U	0.0022 U
Bromochloromethane	NS	NS	NS	0.0022 U	0.0027 U	0.0024 U	0.0022 U
Bromodichloromethane	NS	NS	NS	0.00055 U	0.00068 U	0.0006 U	0.00056 U
Bromoform	NS	NS	NS	0.0044 U	0.0054 U	0.0048 U	0.0045 U
Bromomethane	NS	NS	NS	0.0022 U	0.0027 U	0.0024 U	0.0022 U
Carbon disulfide	NS	NS	NS	0.011 U	0.014 U	0.012 U	0.011 U
Carbon tetrachloride	0.76	1.4	0.76	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Chlorobenzene	1.1	100.0	1.1	0.00055 U	0.00068 U	0.0006 U	0.00056 U
Chloroethane	NS	NS	NS	0.0022 U	0.0027 U	0.0024 U	0.0022 U
Chloroform	0.37	10	0.4	0.0016 U	0.002 U	0.0018 U	0.0017 U
Chloromethane	NS	NS	NS	0.0044 U	0.0054 U	0.0048 U	0.0045 U
cis-1,2-Dichloroethene	0.25	59	0.25	0.0011 U	0.0014 U	0.0012 U	0.0011 U
cis-1,3-Dichloropropene	NS	NS	NS	0.00055 U	0.00068 U	0.0006 U	0.00056 U
Dibromochloromethane	NS	NS	NS	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Dibromomethane	NS	NS	NS	0.0022 U	0.0027 U	0.0024 U	0.0022 U
Dichlorodifluoromethane	NS	NS	NS	0.011 U	0.014 U	0.012 U	0.011 U
Ethyl ether	NS	NS	NS	0.0022 U	0.0027 U	0.0024 U	0.0022 U
Ethylbenzene	1	30	1	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Hexachlorobutadiene	NS	NS	NS	0.0044 U	0.0054 U	0.0048 U	0.0045 U
Isopropylbenzene	NS	NS	NS	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Methyl tert butyl ether	0.93	62	0.93	0.0022 U	0.0027 U	0.0024 U	0.0022 U
Methylene chloride	0.05	51	0.05	0.0055 U	0.0068 U	0.006 U	0.0056 U
n-Butylbenzene	12	100	12	0.0011 U	0.0014 U	0.0012 U	0.0011 U
n-Propylbenzene	3.9	100	3.9	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Naphthalene	12	100	12	0.0044 U	0.0054 U	0.0048 U	0.0045 U
o-Chlorotoluene	NS	NS	NS	0.0022 U	0.0027 U	0.0024 U	0.0022 U
o-Xylene	NS	NS	NS	0.0011 U	0.0014 U	0.0012 U	0.0011 U
p-Chlorotoluene	NS	NS	NS	0.0022 U	0.0027 U	0.0024 U	0.0022 U
p-Diethylbenzene	NS	NS	NS	0.0022 U	0.0027 U	0.0024 U	0.0022 U
p-Ethyltoluene	NS	NS	NS	0.0022 U	0.0027 U	0.0024 U	0.0022 U
p-Isopropyltoluene	NS	NS	NS	0.0011 U	0.0014 U	0.0012 U	0.0011 U
p/m-Xylene	NS	NS	NS	0.0022 U	0.0027 U	0.0024 U	0.0022 U
sec-Butylbenzene	11	100	11	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Styrene	NS	NS	NS	0.0011 U	0.0014 U	0.0012 U	0.0011 U
tert-Butylbenzene	5.9	100	5.9	0.0022 U	0.0027 U	0.0024 U	0.0022 U
Tetrachloroethene	1.3	5.5	1.3	0.00055 U	0.00068 U	0.0006 U	0.00056 U
Toluene	0.7	100	0.7	0.0011 U	0.0014 U	0.0012 U	0.0011 U
trans-1,2-Dichloroethene	0.19	100	0.19	0.0016 U	0.002 U	0.0018 U	0.0017 U
trans-1,3-Dichloropropene	NS	NS	NS	0.0011 U	0.0014 U	0.0012 U	0.0011 U
trans-1,4-Dichloro-2-butene	NS	NS	NS	0.0055 U	0.0068 U	0.006 U	0.0056 U
Trichloroethene	0.47	10	0.47	0.00055 U	0.00068 U	0.0006 U	0.00056 U
Trichlorofluoromethane	NS	NS	NS	0.0044 U	0.0054 U	0.0048 U	0.0045 U
Vinyl acetate	NS	NS	NS	0.011 U	0.014 U	0.012 U	0.011 U
Vinyl chloride	0.02	0.21	0.02	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Xylenes, Total	1.6	100	0.26	0.0011 U	0.0014 U	0.0012 U	0.0011 U
Total VOCs				0	0	0	0

Notes:
(1) New York NYCRR Part 375 Groundwater Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.
(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.
(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06
NS - No Standard
I - The lower value for the two columns has been reported due to obvious interference.
P- The RPD between the results for the two columns exceeds the method-specified criteria.
U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use SCO
Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO
Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 1
Soil Analytical for Volatile Organics
4285 Middle Country Rd,
Calverton, NY

Client Sample ID: Laboratory ID: Sampling Date:	NYSDEC Protection of Ground water[1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	GRID AD_0-2 L2156730-07 10/15/2021
Volatile Organics by 8260/5035 in mg/kg				
1,1,1,2-Tetrachloroethane	NS	NS	NS	0.00054 U
1,1,1-Trichloroethane	0.68	100	0.68	0.00054 U
1,1,2,2-Tetrachloroethane	NS	NS	NS	0.00054 U
1,1,2-Trichloroethane	NS	NS	NS	0.0011 U
1,1-Dichloroethane	0.27	19	0.27	0.0011 U
1,1-Dichloroethene	0.33	100	0.33	0.0011 U
1,1-Dichloropropene	NS	NS	NS	0.00054 U
1,2,3-Trichlorobenzene	NS	NS	NS	0.0022 U
1,2,3-Trichloropropane	NS	NS	NS	0.0022 U
1,2,4,5-Tetramethylbenzene	NS	NS	NS	0.0022 U
1,2,4-Trichlorobenzene	NS	NS	NS	0.0022 U
1,2,4-Trimethylbenzene	3.6	47	3.6	0.0022 U
1,2-Dibromo-3-chloropropane	NS	NS	NS	0.0033 U
1,2-Dibromoethane	NS	NS	NS	0.0011 U
1,2-Dichlorobenzene	1.1	100.0	1.1	0.0022 U
1,2-Dichloroethane	0.02	2.3	0.02	0.0011 U
1,2-Dichloroethene, Total	NS	NS	NS	0.0011 U
1,2-Dichloropropane	NS	NS	NS	0.0011 U
1,3,5-Trimethylbenzene	8.4	47	8	0.0022 U
1,3-Dichlorobenzene	2.4	17.0	2.4	0.0022 U
1,3-Dichloropropane	NS	NS	NS	0.0022 U
1,3-Dichloropropene, Total	NS	NS	NS	0.00054 U
1,4-Dichlorobenzene	1.8	9.8	1.8	0.0022 U
1,4-Dioxane	0.1	9.8	0.1	0.087 U
2,2-Dichloropropane	NS	NS	NS	0.0022 U
2-Butanone	0.12	100	0.1	0.011 U
2-Hexanone	NS	NS	NS	0.011 U
4-Methyl-2-pentanone	NS	NS	NS	0.011 U
Acetone	0.05	100	0.05	0.011 U
Acrylonitrile	NS	NS	NS	0.0044 U
Benzene	0.06	2.9	0.1	0.00054 U
Bromobenzene	NS	NS	NS	0.0022 U
Bromochloromethane	NS	NS	NS	0.0022 U
Bromodichloromethane	NS	NS	NS	0.00054 U
Bromoform	NS	NS	NS	0.0044 U
Bromomethane	NS	NS	NS	0.0022 U
Carbon disulfide	NS	NS	NS	0.011 U
Carbon tetrachloride	0.76	1.4	0.76	0.0011 U
Chlorobenzene	1.1	100.0	1.1	0.00054 U
Chloroethane	NS	NS	NS	0.0022 U
Chloroform	0.37	10	0.4	0.00018 J
Chloromethane	NS	NS	NS	0.0044 U
cis-1,2-Dichloroethene	0.25	59	0.25	0.0011 U
cis-1,3-Dichloropropene	NS	NS	NS	0.00054 U
Dibromochloromethane	NS	NS	NS	0.0011 U
Dibromomethane	NS	NS	NS	0.0022 U
Dichlorodifluoromethane	NS	NS	NS	0.011 U
Ethyl ether	NS	NS	NS	0.0022 U
Ethylbenzene	1	30	1	0.0011 U
Hexachlorobutadiene	NS	NS	NS	0.0044 U
Isopropylbenzene	NS	NS	NS	0.0011 U
Methyl tert butyl ether	0.93	62	0.93	0.0022 U
Methylene chloride	0.05	51	0.05	0.0054 U
n-Butylbenzene	12	100	12	0.0011 U
n-Propylbenzene	3.9	100	3.9	0.0011 U
Naphthalene	12	100	12	0.0044 U
o-Chlorotoluene	NS	NS	NS	0.0022 U
o-Xylene	NS	NS	NS	0.0011 U
p-Chlorotoluene	NS	NS	NS	0.0022 U
p-Diethylbenzene	NS	NS	NS	0.0022 U
p-Ethyltoluene	NS	NS	NS	0.0022 U
p-Isopropyltoluene	NS	NS	NS	0.0011 U
p/m-Xylene	NS	NS	NS	0.0022 U
sec-Butylbenzene	11	100	11	0.0011 U
Styrene	NS	NS	NS	0.0011 U
tert-Butylbenzene	5.9	100	5.9	0.0022 U
Tetrachloroethene	1.3	5.5	1.3	0.00054 U
Toluene	0.7	100	0.7	0.0011 U
trans-1,2-Dichloroethene	0.19	100	0.19	0.0016 U
trans-1,3-Dichloropropene	NS	NS	NS	0.0011 U
trans-1,4-Dichloro-2-butene	NS	NS	NS	0.0054 U
Trichloroethene	0.47	10	0.47	0.00054 U
Trichlorofluoromethane	NS	NS	NS	0.0044 U
Vinyl acetate	NS	NS	NS	0.011 U
Vinyl chloride	0.02	0.21	0.02	0.0011 U
Xylenes, Total	1.6	100	0.26	0.0011 U
Total VOCs				0.00018

Notes:
(1) New York NYCRR Part 375 Groundwater Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.
(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.
(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06
NS - No Standard
I - The lower value for the two columns has been reported due to obvious interference.
P- The RPD between the results for the two columns exceeds the method-specified criteria.
U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use SCO
Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO
Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 2

Soil Analytical for Semivolitale Organics

4285 Middle Country Rd,

Calverton, NY

Client Sample ID: / Laboratory ID: / Sampling Date:	NYSDEC Protection of Ground water[1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	SB001_0-2 / L2155380-01 / 10/11/2021		SB002_3-5 / L2155380-02 / 10/11/2021		SB003_2-4 / L2155380-03 / 10/11/2021		SB004_4-6 / L2155380-04 / 10/11/2021	
Semi-Volatile Organic Compounds by USEPA Method 8270 in mg/kg											
1,2,4,5-Tetrachlorobenzene	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
1,2,4-Trichlorobenzene	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
1,2-Dichlorobenzene	1.1	100	1.1	0.18	U	0.16	U	0.18	U	0.17	U
1,3-Dichlorobenzene	2.4	17	2.4	0.18	U	0.16	U	0.18	U	0.17	U
1,4-Dichlorobenzene	1.8	9.8	1.8	0.18	U	0.16	U	0.18	U	0.17	U
1,4-Dioxane	0.1	9.8	0.1	0.026	U	0.025	U	0.028	U	0.026	U
2,4,5-Trichlorophenol	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
2,4,6-Trichlorophenol	NS	NS	NS	0.1	U	0.099	U	0.11	U	0.1	U
2,4-Dichlorophenol	NS	NS	NS	0.16	U	0.15	U	0.17	U	0.16	U
2,4-Dimethylphenol	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
2,4-Dinitrophenol	NS	NS	NS	0.84	U	0.8	U	0.89	U	0.83	U
2,4-Dinitrotoluene	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
2,6-Dinitrotoluene	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
2-Chloronaphthalene	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
2-Chlorophenol	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
2-Methylnaphthalene	NS	NS	NS	0.21	U	0.2	U	0.22	U	0.21	U
2-Methylphenol	0.33	100	0.33	0.18	U	0.16	U	0.18	U	0.17	U
2-Nitroaniline	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
2-Nitrophenol	NS	NS	NS	0.38	U	0.36	U	0.4	U	0.37	U
3,3'-Dichlorobenzidine	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
3-Methylphenol/4-Methylphenol	0.33	34	0.33	0.25	U	0.24	U	0.27	U	0.25	U
3-Nitroaniline	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
4,6-Dinitro-o-cresol	NS	NS	NS	0.46	U	0.43	U	0.48	U	0.45	U
4-Bromophenyl phenyl ether	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
4-Chloroaniline	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
4-Chlorophenyl phenyl ether	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
4-Nitroaniline	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
4-Nitrophenol	NS	NS	NS	0.24	U	0.23	U	0.26	U	0.24	U
Acenaphthene	98	100	20	0.14	U	0.13	U	0.15	U	0.14	U
Acenaphthylene	107	100	100	0.14	U	0.13	U	0.15	U	0.14	U
Acetophenone	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
Anthracene	1000	100	100	0.1	U	0.099	U	0.11	U	0.1	U
Benzo(a)anthracene	1	1	1	0.1	U	0.099	U	0.11	U	0.1	U
Benzo(a)pyrene	22	1	1	0.14	U	0.13	U	0.15	U	0.14	U
Benzo(b)fluoranthene	2	1	1	0.1	U	0.099	U	0.11	U	0.1	U
Benzo(ghi)perylene	1000	100	100	0.14	U	0.13	U	0.15	U	0.14	U
Benzo(k)fluoranthene	1.7	1	0.8	0.1	U	0.099	U	0.11	U	0.1	U
Benzoic Acid	NS	NS	NS	0.57	U	0.54	U	0.6	U	0.56	U
Benzyl Alcohol	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
Biphenyl	NS	NS	NS	0.4	U	0.38	U	0.42	U	0.39	U
Bis(2-chloroethoxy)methane	NS	NS	NS	0.19	U	0.18	U	0.2	U	0.19	U
Bis(2-chloroethyl)ether	NS	NS	NS	0.16	U	0.15	U	0.17	U	0.16	U
Bis(2-chloroisopropyl)ether	NS	NS	NS	0.21	U	0.2	U	0.22	U	0.21	U
Bis(2-ethylhexyl)phthalate	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
Butyl benzyl phthalate	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
Carbazole	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
Chrysene	1	1	1	0.1	U	0.099	U	0.11	U	0.1	U
Di-n-butylphthalate	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
Di-n-octylphthalate	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
Dibenzo(a,h)anthracene	1000	0.33	0.33	0.1	U	0.099	U	0.11	U	0.1	U
Dibenzofuran	210	14	7	0.18	U	0.16	U	0.18	U	0.17	U
Diethyl phthalate	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
Dimethyl phthalate	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
Fluoranthene	1,000	100	100	0.1	U	0.099	U	0.11	U	0.1	U
Fluorene	386	100	30	0.18	U	0.16	U	0.18	U	0.017	J
Hexachlorobenzene	3.2	0.33	0.33	0.1	U	0.099	U	0.11	U	0.1	U
Hexachlorobutadiene	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
Hexachlorocyclopentadiene	NS	NS	NS	0.5	U	0.47	U	0.53	U	0.49	U
Hexachloroethane	NS	NS	NS	0.14	U	0.13	U	0.15	U	0.14	U
Indeno(1,2,3-cd)pyrene	8.2	0.5	0.5	0.14	U	0.13	U	0.15	U	0.14	U
Isophorone	NS	NS	NS	0.16	U	0.15	U	0.17	U	0.16	U
n-Nitrosodi-n-propylamine	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
Naphthalene	12	100	12	0.18	U	0.16	U	0.18	U	0.17	U
NDPA/DPA	NS	NS	NS	0.14	U	0.13	U	0.15	U	0.14	U
Nitrobenzene	NS	NS	NS	0.16	U	0.15	U	0.17	U	0.16	U
p-Chloro-m-cresol	NS	NS	NS	0.18	U	0.16	U	0.18	U	0.17	U
Pentachlorophenol	0.8	2.4	0.8	0.14	U	0.13	U	0.15	U	0.14	U
Phenanthrene	1000	100	100	0.1	U	0.099	U	0.11	U	0.1	U
Phenol	0.33	100	0.33	0.18	U	0.16	U	0.18	U	0.17	U
Pyrene	1000	100	100	0.1	U	0.099	U	0.11	U	0.1	U
Total SVOCs				0		0		0		0.017	

Notes:

(1) New York NYCRR Part 375 Groundwater Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.

(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.

(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06

NS - No Standard

I - The lower value for the two columns has been reported due to obvious interference.

P- The RPD between the results for the two columns exceeds the method-specified criteria.

U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 2

Soil Analytical for Semivolitale Organics

4285 Middle Country Rd,

Calverton, NY

Client Sample ID: / Laboratory ID: / Sampling Date:	NYSDEC Protection of Ground water[1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	SB005_1-3 / L2155380-05 / 10/11/2021		SB006_2-4 / L2155380-06 / 10/11/2021		SB007_5-7 / L2155380-07 / 10/11/2021		SB008_6-8 / L2155380-08 / 10/11/2021	
Semi-Volatile Organic Compounds by USEPA Method 8270 in mg/kg											
1,2,4,5-Tetrachlorobenzene	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
1,2,4-Trichlorobenzene	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
1,2-Dichlorobenzene	1.1	100	1.1	0.18	U	0.18	U	0.16	U	0.2	U
1,3-Dichlorobenzene	2.4	17	2.4	0.18	U	0.18	U	0.16	U	0.2	U
1,4-Dichlorobenzene	1.8	9.8	1.8	0.18	U	0.18	U	0.16	U	0.2	U
1,4-Dioxane	0.1	9.8	0.1	0.027	U	0.027	U	0.024	U	0.03	U
2,4,5-Trichlorophenol	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
2,4,6-Trichlorophenol	NS	NS	NS	0.11	U	0.11	U	0.098	U	0.12	U
2,4-Dichlorophenol	NS	NS	NS	0.16	U	0.16	U	0.15	U	0.18	U
2,4-Dimethylphenol	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
2,4-Dinitrophenol	NS	NS	NS	0.85	U	0.85	U	0.78	U	0.95	U
2,4-Dinitrotoluene	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
2,6-Dinitrotoluene	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
2-Chloronaphthalene	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
2-Chlorophenol	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
2-Methylnaphthalene	NS	NS	NS	0.21	U	0.21	U	0.2	U	0.24	U
2-Methylphenol	0.33	100	0.33	0.18	U	0.18	U	0.16	U	0.2	U
2-Nitroaniline	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
2-Nitrophenol	NS	NS	NS	0.38	U	0.38	U	0.35	U	0.43	U
3,3'-Dichlorobenzidine	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
3-Methylphenol/4-Methylphenol	0.33	34	0.33	0.26	U	0.26	U	0.24	U	0.28	U
3-Nitroaniline	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
4,6-Dinitro-o-cresol	NS	NS	NS	0.46	U	0.46	U	0.42	U	0.51	U
4-Bromophenyl phenyl ether	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
4-Chloroaniline	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
4-Chlorophenyl phenyl ether	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
4-Nitroaniline	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
4-Nitrophenol	NS	NS	NS	0.25	U	0.25	U	0.23	U	0.28	U
Acenaphthene	98	100	20	0.14	U	0.14	U	0.13	U	0.16	U
Acenaphthylene	107	100	100	0.14	U	0.14	U	0.13	U	0.16	U
Acetophenone	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
Anthracene	1000	100	100	0.11	U	0.11	U	0.098	U	0.12	U
Benzo(a)anthracene	1	1	1	0.11	U	0.11	U	0.098	U	0.12	U
Benzo(a)pyrene	22	1	1	0.14	U	0.14	U	0.13	U	0.16	U
Benzo(b)fluoranthene	2	1	1	0.11	U	0.11	U	0.098	U	0.12	U
Benzo(ghi)perylene	1000	100	100	0.14	U	0.14	U	0.13	U	0.16	U
Benzo(k)fluoranthene	1.7	1	0.8	0.11	U	0.11	U	0.098	U	0.12	U
Benzoic Acid	NS	NS	NS	0.58	U	0.58	U	0.53	U	0.64	U
Benzyl Alcohol	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
Biphenyl	NS	NS	NS	0.4	U	0.4	U	0.37	U	0.45	U
Bis(2-chloroethoxy)methane	NS	NS	NS	0.19	U	0.19	U	0.18	U	0.21	U
Bis(2-chloroethyl)ether	NS	NS	NS	0.16	U	0.16	U	0.15	U	0.18	U
Bis(2-chloroisopropyl)ether	NS	NS	NS	0.21	U	0.21	U	0.2	U	0.24	U
Bis(2-ethylhexyl)phthalate	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
Butyl benzyl phthalate	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
Carbazole	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
Chrysene	1	1	1	0.11	U	0.11	U	0.098	U	0.12	U
Di-n-butylphthalate	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
Di-n-octylphthalate	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
Dibenzo(a,h)anthracene	1000	0.33	0.33	0.11	U	0.11	U	0.098	U	0.12	U
Dibenzofuran	210	14	7	0.18	U	0.18	U	0.16	U	0.2	U
Diethyl phthalate	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
Dimethyl phthalate	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
Fluoranthene	1,000	100	100	0.11	U	0.11	U	0.098	U	0.12	U
Fluorene	386	100	30	0.18	U	0.18	U	0.16	U	0.2	U
Hexachlorobenzene	3.2	0.33	0.33	0.11	U	0.11	U	0.098	U	0.12	U
Hexachlorobutadiene	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
Hexachlorocyclopentadiene	NS	NS	NS	0.51	U	0.51	U	0.47	U	0.56	U
Hexachloroethane	NS	NS	NS	0.14	U	0.14	U	0.13	U	0.16	U
Indeno(1,2,3-cd)pyrene	8.2	0.5	0.5	0.14	U	0.14	U	0.13	U	0.16	U
Isophorone	NS	NS	NS	0.16	U	0.16	U	0.15	U	0.18	U
n-Nitrosodi-n-propylamine	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
Naphthalene	12	100	12	0.18	U	0.18	U	0.16	U	0.2	U
NDPA/DPA	NS	NS	NS	0.14	U	0.14	U	0.13	U	0.16	U
Nitrobenzene	NS	NS	NS	0.16	U	0.16	U	0.15	U	0.18	U
p-Chloro-m-cresol	NS	NS	NS	0.18	U	0.18	U	0.16	U	0.2	U
Pentachlorophenol	0.8	2.4	0.8	0.14	U	0.14	U	0.13	U	0.16	U
Phenanthrene	1000	100	100	0.11	U	0.11	U	0.098	U	0.12	U
Phenol	0.33	100	0.33	0.18	U	0.18	U	0.16	U	0.2	U
Pyrene	1000	100	100	0.11	U	0.11	U	0.098	U	0.12	U
Total SVOCs				0		0		0		0	

Notes:

(1) New York NYCRR Part 375 Groundwater Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.

(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.

(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06

NS - No Standard

I - The lower value for the two columns has been reported due to obvious interference.

P- The RPD between the results for the two columns exceeds the method-specified criteria.

U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 2

Soil Analytical for Semivolitale Organics

4285 Middle Country Rd,

Calverton, NY

Client Sample ID: / Laboratory ID: / Sampling Date:	NYSDEC Protection of Ground water[1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	SB009_2-4 / L2155380-09 / 10/11/2021		SB010_6-8 / L2155380-10 / 10/11/2021		GRID A_0-2 / L2155998-01 / 10/13/2021		GRID F_0-2 / L2156337-03 / 10/14/2021	
Semi-Volatile Organic Compounds by USEPA Method 8270 in mg/kg											
1,2,4,5-Tetrachlorobenzene	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
1,2,4-Trichlorobenzene	NS	NS	NS	0.18	U	0.025	J	0.2	U	0.17	U
1,2-Dichlorobenzene	1.1	100	1.1	0.18	U	0.18	U	0.2	U	0.17	U
1,3-Dichlorobenzene	2.4	17	2.4	0.18	U	0.18	U	0.2	U	0.17	U
1,4-Dichlorobenzene	1.8	9.8	1.8	0.18	U	0.18	U	0.2	U	0.17	U
1,4-Dioxane	0.1	9.8	0.1	0.028	U	0.027	U	0.03	U	0.025	U
2,4,5-Trichlorophenol	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
2,4,6-Trichlorophenol	NS	NS	NS	0.11	U	0.11	U	0.12	U	0.1	U
2,4-Dichlorophenol	NS	NS	NS	0.16	U	0.16	U	0.18	U	0.15	U
2,4-Dimethylphenol	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
2,4-Dinitrophenol	NS	NS	NS	0.88	U	0.86	U	0.96	U	0.8	U
2,4-Dinitrotoluene	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
2,6-Dinitrotoluene	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
2-Chloronaphthalene	NS	NS	NS	0.18	U	0.032	J	0.2	U	0.17	U
2-Chlorophenol	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
2-Methylnaphthalene	NS	NS	NS	0.048	J	0.11	J	0.24	U	0.2	U
2-Methylphenol	0.33	100	0.33	0.18	U	0.18	U	0.2	U	0.17	U
2-Nitroaniline	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
2-Nitrophenol	NS	NS	NS	0.4	U	0.38	U	0.43	U	0.36	U
3,3'-Dichlorobenzidine	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
3-Methylphenol/4-Methylphenol	0.33	34	0.33	0.26	U	0.028	J	0.29	U	0.24	U
3-Nitroaniline	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
4,6-Dinitro-o-cresol	NS	NS	NS	0.48	U	0.46	U	0.52	U	0.44	U
4-Bromophenyl phenyl ether	NS	NS	NS	0.18	U	0.035	J	0.2	U	0.17	U
4-Chloroaniline	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
4-Chlorophenyl phenyl ether	NS	NS	NS	0.18	U	0.038	J	0.2	U	0.17	U
4-Nitroaniline	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
4-Nitrophenol	NS	NS	NS	0.26	U	0.25	U	0.28	U	0.23	U
Acenaphthene	98	100	20	0.19		0.24		0.16	U	0.13	U
Acenaphthylene	107	100	100	0.093	J	0.034	J	0.16	U	0.13	U
Acetophenone	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
Anthracene	1000	100	100	0.54		0.41		0.12	U	0.1	U
Benzo(a)anthracene	1	1	1	1.6		0.64		0.05	J	0.1	U
Benzo(a)pyrene	22	1	1	1.5		0.57		0.066	J	0.13	U
Benzo(b)fluoranthene	2	1	1	2.1		0.7		0.11	J	0.1	U
Benzo(ghi)perylene	1000	100	100	0.98		0.32		0.061	J	0.13	U
Benzo(k)fluoranthene	1.7	1	0.8	0.51		0.26		0.12	U	0.1	U
Benzoic Acid	NS	NS	NS	0.59	U	0.58	U	0.32	J	0.37	J
Benzyl Alcohol	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
Biphenyl	NS	NS	NS	0.42	U	0.41	U	0.46	U	0.38	U
Bis(2-chloroethoxy)methane	NS	NS	NS	0.2	U	0.19	U	0.22	U	0.18	U
Bis(2-chloroethyl)ether	NS	NS	NS	0.16	U	0.16	U	0.18	U	0.15	U
Bis(2-chloroisopropyl)ether	NS	NS	NS	0.22	U	0.21	U	0.24	U	0.2	U
Bis(2-ethylhexyl)phthalate	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
Butyl benzyl phthalate	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
Carbazole	NS	NS	NS	0.19		0.2		0.2	U	0.17	U
Chrysene	1	1	1	1.4		0.6		0.064	J	0.1	U
Di-n-butylphthalate	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
Di-n-octylphthalate	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
Dibenzo(a,h)anthracene	1000	0.33	0.33	0.24		0.093	J	0.12	U	0.1	U
Dibenzofuran	210	14	7	0.1	J	0.17	J	0.2	U	0.17	U
Diethyl phthalate	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
Dimethyl phthalate	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
Fluoranthene	1,000	100	100	3.4		1.5		0.1	J	0.1	U
Fluorene	386	100	30	0.19		0.22		0.2	U	0.17	U
Hexachlorobenzene	3.2	0.33	0.33	0.11	U	0.034	J	0.12	U	0.1	U
Hexachlorobutadiene	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
Hexachlorocyclopentadiene	NS	NS	NS	0.52	U	0.51	U	0.57	U	0.48	U
Hexachloroethane	NS	NS	NS	0.15	U	0.14	U	0.16	U	0.13	U
Indeno(1,2,3-cd)pyrene	8.2	0.5	0.5	1		0.38		0.1	J	0.13	U
Isophorone	NS	NS	NS	0.16	U	0.16	U	0.18	U	0.15	U
n-Nitrosodi-n-propylamine	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
Naphthalene	12	100	12	0.067	J	0.13	J	0.2	U	0.17	U
NDPA/DPA	NS	NS	NS	0.15	U	0.14	U	0.16	U	0.13	U
Nitrobenzene	NS	NS	NS	0.16	U	0.16	U	0.18	U	0.15	U
p-Chloro-m-cresol	NS	NS	NS	0.18	U	0.18	U	0.2	U	0.17	U
Pentachlorophenol	0.8	2.4	0.8	0.15	U	0.14	U	0.16	U	0.13	U
Phenanthrene	1000	100	100	2.3		1.4		0.033	J	0.1	U
Phenol	0.33	100	0.33	0.18	U	0.18	U	0.2	U	0.17	U
Pyrene	1000	100	100	2.9		1.2		0.09	J	0.1	U
Total SVOCs				19.348		9.369		0.994		0.37	

Notes:

(1) New York NYCRR Part 375 Groundwater Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.

(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.

(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06

NS - No Standard

I - The lower value for the two columns has been reported due to obvious interference.

P- The RPD between the results for the two columns exceeds the method-specified criteria.

U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 2

Soil Analytical for Semivolitale Organics

4285 Middle Country Rd,

Calverton, NY

Client Sample ID: / Laboratory ID: / Sampling Date:	NYSDEC Protection of Ground water[1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	GRID L_0-2 / L2156730-09 / 10/15/2021		GRID R_0-2 / L2155998-13 / 10/13/2021		GRID X_0-2 / L2156337-21 / 10/14/2021		GRID AD_0-2 / L2156730-07 / 10/15/2021	
Semi-Volatile Organic Compounds by USEPA Method 8270 in mg/kg											
1,2,4,5-Tetrachlorobenzene	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
1,2,4-Trichlorobenzene	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
1,2-Dichlorobenzene	1.1	100	1.1	0.18	U	0.17	U	0.17	U	0.18	U
1,3-Dichlorobenzene	2.4	17	2.4	0.18	U	0.17	U	0.17	U	0.18	U
1,4-Dichlorobenzene	1.8	9.8	1.8	0.18	U	0.17	U	0.17	U	0.18	U
1,4-Dioxane	0.1	9.8	0.1	0.026	U	0.026	U	0.025	U	0.027	U
2,4,5-Trichlorophenol	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
2,4,6-Trichlorophenol	NS	NS	NS	0.1	U	0.1	U	0.1	U	0.11	U
2,4-Dichlorophenol	NS	NS	NS	0.16	U	0.16	U	0.15	U	0.16	U
2,4-Dimethylphenol	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
2,4-Dinitrophenol	NS	NS	NS	0.84	U	0.83	U	0.8	U	0.86	U
2,4-Dinitrotoluene	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
2,6-Dinitrotoluene	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
2-Chloronaphthalene	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
2-Chlorophenol	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
2-Methylnaphthalene	NS	NS	NS	0.21	U	0.21	U	0.2	U	0.21	U
2-Methylphenol	0.33	100	0.33	0.18	U	0.17	U	0.17	U	0.18	U
2-Nitroaniline	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
2-Nitrophenol	NS	NS	NS	0.38	U	0.37	U	0.36	U	0.38	U
3,3'-Dichlorobenzidine	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
3-Methylphenol/4-Methylphenol	0.33	34	0.33	0.25	U	0.25	U	0.24	U	0.26	U
3-Nitroaniline	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
4,6-Dinitro-o-cresol	NS	NS	NS	0.46	U	0.45	U	0.44	U	0.46	U
4-Bromophenyl phenyl ether	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
4-Chloroaniline	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
4-Chlorophenyl phenyl ether	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
4-Nitroaniline	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
4-Nitrophenol	NS	NS	NS	0.25	U	0.24	U	0.23	U	0.25	U
Acenaphthene	98	100	20	0.14	U	0.14	U	0.13	U	0.14	U
Acenaphthylene	107	100	100	0.14	U	0.14	U	0.13	U	0.14	U
Acetophenone	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
Anthracene	1000	100	100	0.1	U	0.1	U	0.1	U	0.062	J
Benzo(a)anthracene	1	1	1	0.1	U	0.1	U	0.1	U	0.29	
Benzo(a)pyrene	22	1	1	0.14	U	0.14	U	0.13	U	0.2	
Benzo(b)fluoranthene	2	1	1	0.1	U	0.1	U	0.1	U	0.38	
Benzo(ghi)perylene	1000	100	100	0.14	U	0.14	U	0.13	U	0.16	
Benzo(k)fluoranthene	1.7	1	0.8	0.1	U	0.1	U	0.1	U	0.1	J
Benzoic Acid	NS	NS	NS	0.57	U	0.26	J	0.24	J	0.58	U
Benzyl Alcohol	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
Biphenyl	NS	NS	NS	0.4	U	0.4	U	0.38	U	0.41	U
Bis(2-chloroethoxy)methane	NS	NS	NS	0.19	U	0.19	U	0.18	U	0.19	U
Bis(2-chloroethyl)ether	NS	NS	NS	0.16	U	0.16	U	0.15	U	0.16	U
Bis(2-chloroisopropyl)ether	NS	NS	NS	0.21	U	0.21	U	0.2	U	0.21	U
Bis(2-ethylhexyl)phthalate	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
Butyl benzyl phthalate	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
Carbazole	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.021	J
Chrysene	1	1	1	0.1	U	0.1	U	0.1	U	0.27	
Di-n-butylphthalate	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
Di-n-octylphthalate	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
Dibenzo(a,h)anthracene	1000	0.33	0.33	0.1	U	0.1	U	0.1	U	0.038	J
Dibenzofuran	210	14	7	0.18	U	0.17	U	0.17	U	0.18	U
Diethyl phthalate	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
Dimethyl phthalate	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.2	
Fluoranthene	1,000	100	100	0.1	U	0.1	U	0.1	U	0.47	
Fluorene	386	100	30	0.18	U	0.17	U	0.17	U	0.02	J
Hexachlorobenzene	3.2	0.33	0.33	0.1	U	0.1	U	0.1	U	0.11	U
Hexachlorobutadiene	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
Hexachlorocyclopentadiene	NS	NS	NS	0.5	U	0.5	U	0.48	U	0.51	U
Hexachloroethane	NS	NS	NS	0.14	U	0.14	U	0.13	U	0.14	U
Indeno(1,2,3-cd)pyrene	8.2	0.5	0.5	0.14	U	0.048	J	0.04	J	0.17	
Isophorone	NS	NS	NS	0.16	U	0.16	U	0.15	U	0.16	U
n-Nitrosodi-n-propylamine	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
Naphthalene	12	100	12	0.18	U	0.17	U	0.17	U	0.18	U
NDPA/DPA	NS	NS	NS	0.14	U	0.14	U	0.13	U	0.14	U
Nitrobenzene	NS	NS	NS	0.16	U	0.16	U	0.15	U	0.16	U
p-Chloro-m-cresol	NS	NS	NS	0.18	U	0.17	U	0.17	U	0.18	U
Pentachlorophenol	0.8	2.4	0.8	0.14	U	0.14	U	0.13	U	0.14	U
Phenanthrene	1000	100	100	0.1	U	0.1	U	0.1	U	0.22	
Phenol	0.33	100	0.33	0.18	U	0.17	U	0.17	U	0.18	U
Pyrene	1000	100	100	0.1	U	0.018	J	0.1	U	0.43	
Total SVOCs				0		0.326		0.28		3.031	

Notes:

(1) New York NYCRR Part 375 Groundwater Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.

(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.

(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06

NS - No Standard

I - The lower value for the two columns has been reported due to obvious interference.

P- The RPD between the results for the two columns exceeds the method-specified criteria.

U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 3

Soil Analytical for Total Metals

4285 Middle Country Rd,

Calverton, NY

Client Sample ID: / Laboratory ID: / Sampling Date:	NYSDEC Protection of Ground water[1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	SB001_0-2 / L2155380-01 / 10/11/2021		SB002_3-5 / L2155380-02 / 10/11/2021		SB003_2-4 / L2155380-03 / 10/11/2021		SB004_4-6 / L2155380-04 / 10/11/2021		SB005_1-3 / L2155380-05 / 10/11/2021		SB006_2-4 / L2155380-06 / 10/11/2021		SB007_5-7 / L2155380-07 / 10/11/2021		SB008_6-8 / L2155380-08 / 10/11/2021		SB009_2-4 / L2155380-09 / 10/11/2021	
Total Metals by USEPA Method 6010 in mg/kg																					
Aluminum, Total	NS	NS	NS	4,260		664		9,340		9,350		10,300		9,090		1,380		14,500		6,070	
Antimony, Total	NS	NS	NS	4.04	U	3.93	U	4.41	U	4.11	U	4.33	U	4.25	U	3.86	U	23.7	U	4.23	U
Arsenic, Total	16	16	13	9.11		2.38		6		9.04		5.81		4.12		1.04		2.04	J	8.68	
Barium, Total	820	350	350	7.14		0.904		22.5		14.8		16.8		17.2		3.03		35.8		127	
Beryllium, Total	47	14	7.2	0.113	J	0.393	U	0.238	J	0.206	J	0.286	J	0.204	J	0.085	J	0.427	J	0.254	J
Cadmium, Total	7.5	2.5	2.5	0.808	U	0.786	U	0.882	U	0.822	U	0.866	U	0.85	U	0.772	U	4.75	U	8.02	
Calcium, Total	NS	NS	NS	545		15		80		194		78		63		29		319		10,300	
Chromium, Total	NS	NS	NS	4.72		2.18		8.49		10.7		10.4		8.67		3.76		14.7		13.5	
Cobalt, Total	NS	NS	NS	0.76	J	0.197	J	2.56		3.67		4.36		3.01		0.942	J	4.42	J	4.18	
Copper, Total	1720	270	50	7.96		0.794		4.71		12		7.91		5.33		2.22		7.69		46.1	
Iron, Total	NS	NS	NS	5,560		731		9,850		10,100		10,200		8,630		4,130		8,780		11,200	
Lead, Total	450	400	63	5.64		0.645	J	4.42		8.78		5.52		4.28		1.24	J	8.74	J	127	
Magnesium, Total	NS	NS	NS	453		55		909		1,040		1,140		1,030		168		2,520		2,720	
Manganese, Total	2000	2000	1600	18.3		3.78		56.3		84		76.5		62.7		32.8		95.8		190	
Mercury, Total	0.73	0.81	0.18	0.067	U	0.068	U	0.078	U	0.068	U	0.075	U	0.074	U	0.063	U	0.076	U	0.346	
Nickel, Total	130	140	30	1.51	J	0.315	J	4.32		5.19		6.01		4.77		0.803	J	7.69	J	11.2	
Potassium, Total	NS	NS	NS	85	J	24	J	140	J	200	J	195	J	172	J	51.5	J	440	J	586	
Selenium, Total	4	36	3.9	0.251	J	1.57	U	1.76	U	0.312	J	0.407	J	0.255	J	1.54	U	9.5	U	1.69	U
Silver, Total	8.3	36	2	0.808	U	0.786	U	0.882	U	0.822	U	0.866	U	0.85	U	0.772	U	4.75	U	0.846	U
Sodium, Total	NS	NS	NS	3.06	J	157	U	5.52	J	10.8	J	9.57	J	5.44	J	154	U	950	U	53.3	J
Thallium, Total	NS	NS	NS	1.62	U	1.57	U	1.76	U	1.64	U	1.73	U	1.7	U	1.54	U	9.5	U	1.69	U
Vanadium, Total	NS	NS	NS	7.66		1.28		12.9		15.1		14.9		13.1		3.69		20.2		18.3	
Zinc, Total	2480	2200	109	6.1		1.2	J	13.1		15.9		14.7		15.1		2.81	J	26.5		130	

Notes:

(1) New York NYCRR Part 375 Groundwater Criteria, New York Protection of Groundwater Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.

(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.

(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06

NS - No Standard

I - The lower value for the two columns has been reported due to obvious interference.

P- The RPD between the results for the two columns exceeds the method-specified criteria.

U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 3

Soil Analytical for Total Metals

4285 Middle Country Rd,

Calverton, NY

Client Sample ID:	NYSDEC Protection of Ground water[1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	SB010_6-8		GRID A_0-2		GRID A_18-24		GRID B_0-2		GRID B_18-24		GRID C_0-2		GRID C_18-24		GRID D_0-2		GRID E_0-2	
Laboratory ID:				L2155380-10		L2155998-01		L2155998-02		L2155998-03		L2155998-04		L2155998-05		L2155998-06		L2155998-07		L2156337-01	
Sampling Date:				10/11/2021		10/13/2021		10/13/2021		10/13/2021		10/13/2021		10/13/2021		10/13/2021		10/13/2021		10/14/2021	
Total Metals by USEPA Method 6010 in mg/kg																					
Aluminum, Total	NS	NS	NS	7,380		12,200		10,600		7,460		7,500		6,790		8,640		5,660		10,200	
Antimony, Total	NS	NS	NS	4.35	U	4.64	U	4.2	U	5.25	U	4.38	U	4.58	U	4.87	U	4.97	U	4.94	U
Arsenic, Total	16	16	13	30.8		50.4		42.8		31.6		19.9		21.1		11.7		11.8		2.8	
Barium, Total	820	350	350	37		25.8		20.7		21		17.7		12.5		16.1		9.94		21.2	
Beryllium, Total	47	14	7.2	0.2	J	0.353	J	0.286	J	0.231	J	0.201	J	0.202	J	0.224	J	0.149	J	0.306	J
Cadmium, Total	7.5	2.5	2.5	0.869	U	0.269	J	0.227	J	0.252	J	0.201	J	0.119	J	0.136	J	0.099	J	0.118	J
Calcium, Total	NS	NS	NS	5,210		453		252		475		261		153		151		179		85	
Chromium, Total	NS	NS	NS	9.99		14.4		13.4		9.73		8.46		7.58		9.61		6.14		10.3	
Cobalt, Total	NS	NS	NS	2.07		2.24		1.97		1.45	J	2		1.6	J	2.15		1.48	J	2.91	
Copper, Total	1720	270	50	35.9		40		36		31.6		20.7		14.9		10.4		6.11		2.65	
Iron, Total	NS	NS	NS	8,600		13,900		11,900		8,910		9,530		7,570		9,410		6,200		10,800	
Lead, Total	450	400	63	36.6		55.7		31.6		40.3		28.4		10.2		9.08		8.42		6.22	
Magnesium, Total	NS	NS	NS	1,550		980		721		564		564		675		714		500		848	
Manganese, Total	2000	2000	1600	79.8		63.8		44.6		44.5		50.8		35.2		42.8		32.6		54.8	
Mercury, Total	0.73	0.81	0.18	0.166		0.193		0.307		0.185		0.163		0.084	U	0.092	U	0.1	U	0.083	U
Nickel, Total	130	140	30	5.37		5.1		5.1		3.41		3.77		3.27		4.21		2.72		5.16	
Potassium, Total	NS	NS	NS	364		338		239		217	J	188	J	157	J	174	J	135	J	182	J
Selenium, Total	4	36	3.9	0.4	J	0.297	J	0.462	J	2.1	U	1.75	U	1.83	U	1.95	U	1.99	U	1.98	U
Silver, Total	8.3	36	2	0.869	U	0.928	U	0.841	U	1.05	U	0.876	U	0.917	U	0.974	U	0.994	U	0.988	U
Sodium, Total	NS	NS	NS	106	J	168		71.7	J	25.5	J	42.2	J	21.5	J	43	J	22.2	J	19.2	J
Thallium, Total	NS	NS	NS	1.74	U	1.86	U	1.68	U	2.1	U	1.75	U	0.33	J	1.95	U	1.99	U	1.98	U
Vanadium, Total	NS	NS	NS	15		24.4		21.2		15.6		14.6		13.3		15.8		10.7		18.7	
Zinc, Total	2480	2200	109	37.7		32.5		19.1		23.3		20.9		10.8		13.9		9.59		13.7	

Notes:

(1) New York NYCRR Part 375 Groundwater Criteria, New York Protection of Groundwater Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.

(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.

(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06

NS - No Standard

I - The lower value for the two columns has been reported due to obvious interference.

P- The RPD between the results for the two columns exceeds the method-specified criteria.

U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use S

Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 3
Soil Analytical for Total Metals
4285 Middle Country Rd,
Calverton, NY

Client Sample ID: Laboratory ID: Sampling Date:	NYSDEC Protection of Ground water[1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	GRID F_0-2 L2156337-03 10/14/2021	GRID G_0-2 L2156337-05 10/14/2021	GRID H_0-2 L2156337-07 10/14/2021	GRID H_18-24 L2156337-08 10/14/2021	GRID I_0-2 L2156337-09 10/14/2021	GRID I_18-24 L2156337-10 10/14/2021	GRID J_0-2 L2156337-11 10/14/2021	GRID J_18-24 L2156337-12 10/14/2021	GRID K_0-2 L2156337-13 10/14/2021
Total Metals by USEPA Method 6010 in mg/kg												
Aluminum, Total	NS	NS	NS	2,980	4,020	4,620	6,460	8,450	5,810	6,140	3,120	6,610
Antimony, Total	NS	NS	NS	4.08 U	4.06 U	4.08 U	4.26 U	4.33 U	4.09 U	1.97 J	4.08 U	0.394 J
Arsenic, Total	16	16	13	3.43	7.06	26.3	9.01	20.4	5.94	28.8	1.49	29.3
Barium, Total	820	350	350	4.6	6.51	8.03	9.88	16.2	10.1	11.4	4.32	11.6
Beryllium, Total	47	14	7.2	0.065 J	0.098 J	0.106 J	0.153 J	0.225 J	0.172 J	0.181 J	0.073 J	0.151 J
Cadmium, Total	7.5	2.5	2.5	0.817 U	0.813 U	0.09 J	0.085 J	0.138 J	0.082 J	0.164 J	0.816 U	0.117 J
Calcium, Total	NS	NS	NS	107	138	250	143	299	142	390	49	371
Chromium, Total	NS	NS	NS	3.35	4.36	5.02	7.4	9.2	6.32	27	3.91	6.87
Cobalt, Total	NS	NS	NS	1.13 J	1.28 J	0.701 J	1.57 J	2.25	2.12	1.2 J	2.01	0.788 J
Copper, Total	1720	270	50	3.02	5.66	11.7	5.77	11.2	4.43	17.8	2.03	20
Iron, Total	NS	NS	NS	3,320	4,460	5,130	7,500	9,210	6,570	10,600	3,260	6,040
Lead, Total	450	400	63	4.37	5.72	7.84	4.61	9.58	4.38	10.9	1.95 J	9.85
Magnesium, Total	NS	NS	NS	265	345	263	522	767	654	409	271	364
Manganese, Total	2000	2000	1600	31.2	33	18.1	33.1	47.4	43.9	26.7	47.6	20.2
Mercury, Total	0.73	0.81	0.18	0.075 U	0.066 U	0.074 U	0.068 U	0.079 U	0.068 U	0.07 U	0.065 U	0.075 U
Nickel, Total	130	140	30	1.66 J	2.01 J	1.73 J	3.23	4.41	3.44	2.65	1.72 J	2.34
Potassium, Total	NS	NS	NS	91.1 J	111 J	99.2 J	124 J	169 J	147 J	120 J	71.1 J	133 J
Selenium, Total	4	36	3.9	1.63 U	1.62 U	1.63 U	0.349 J	1.73 U	0.425 J	0.465 J	1.63 U	0.285 J
Silver, Total	8.3	36	2	0.817 U	0.813 U	0.816 U	0.851 U	0.866 U	0.818 U	0.861 U	0.816 U	0.839 U
Sodium, Total	NS	NS	NS	10 J	10.3 J	12.1 J	20 J	21.2 J	25.2 J	18.9 J	16.3 J	16.1 J
Thallium, Total	NS	NS	NS	1.63 U	1.62 U	1.63 U	1.7 U	1.73 U	1.64 U	1.72 U	1.63 U	1.68 U
Vanadium, Total	NS	NS	NS	6.46	7.97	10	12.4	17	10.5	17.7	5.51	12.6
Zinc, Total	2480	2200	109	5.08	6.52	7.6	9.67	14.3	10.1	10.2	4.43	9.71

Notes:
(1) New York NYCRR Part 375 Groundwater Criteria, New York Protection of Groundwater Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.

(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.

(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06
NS - No Standard
I - The lower value for the two columns has been reported due to obvious interference.
P- The RPD between the results for the two columns exceeds the method-specified criteria.
U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use S
Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO
Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 3

Soil Analytical for Total Metals

4285 Middle Country Rd,

Calverton, NY

Client Sample ID:	NYSDEC Protection of Ground water[1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	GRID K_18-24	GRID L_0-2	GRID L_18-24	GRID M_0-2	GRID M_18-24	GRID N_0-2	GRID N_18-24	GRID O_0-2	GRID O_18-24
Laboratory ID:				L2156337-14	L2156730-09	L2156730-10	L2156730-11	L2156730-12	L2156730-13	L2156730-14	L2156730-15	L2156730-16
Sampling Date:				10/14/2021	10/15/2021	10/15/2021	10/15/2021	10/15/2021	10/15/2021	10/15/2021	10/15/2021	10/15/2021
Total Metals by USEPA Method 6010 in mg/kg												
Aluminum, Total	NS	NS	NS	5,780	5,520	6,750	6,180	7,930	6,140	7,780	7,320	6,390
Antimony, Total	NS	NS	NS	4.14 U	4.2 U	4.14 U	4.61 U	4.28 U	4.32 U	4.46 U	4.29 U	4.69 U
Arsenic, Total	16	16	13	3.49	24	5.94	23.8	9.31	25.5	4.82	41.8	20.8
Barium, Total	820	350	350	10.1	9.56	10.9	9.93	12.4	10	12.2	12.4	8.9
Beryllium, Total	47	14	7.2	0.141 J	0.109 J	0.133 J	0.129 J	0.188 J	0.147 J	0.214 J	0.18 J	0.16 J
Cadmium, Total	7.5	2.5	2.5	0.827 U	0.151 J	0.829 U	0.194 J	0.094 J	0.199 J	0.098 J	0.257 J	0.094 J
Calcium, Total	NS	NS	NS	95	481	204	454	225	368	145	595	374
Chromium, Total	NS	NS	NS	6.06	5.62	6.8	7.17	8.25	6.7	7.77	8.51	8.19
Cobalt, Total	NS	NS	NS	1.4 J	0.613 J	1.56 J	1.06 J	2.35	1.22 J	3.11	1.3 J	1.47 J
Copper, Total	1720	270	50	4.49	17.9	6.03	16.2	6.26	17.6	4.36	28.1	9.95
Iron, Total	NS	NS	NS	5,660	5,080	5,380	6,960	7,880	7,380	8,700	9,140	7,670
Lead, Total	450	400	63	3.36 J	7.81	3.73 J	8.07	5.24	9.26	4.34 J	12.5	5.12
Magnesium, Total	NS	NS	NS	565	334	699	463	812	502	905	520	624
Manganese, Total	2000	2000	1600	26.3	15.3	30.8	26.8	42.1	33.5	70.6	50.9	39.7
Mercury, Total	0.73	0.81	0.18	0.068 U	0.068 U	0.069 U	0.074 U	0.069 U	0.069 U	0.075 U	0.047 J	0.076 U
Nickel, Total	130	140	30	3.21	1.78 J	3.9	2.19 J	4.17	2.43	4.46	2.52	3.74
Potassium, Total	NS	NS	NS	134 J	132 J	137 J	186 J	173 J	146 J	178 J	221	150 J
Selenium, Total	4	36	3.9	1.65 U	1.68 U	0.265 J	1.84 U	0.394 J	1.73 U	0.392 J	1.72 U	0.526 J
Silver, Total	8.3	36	2	0.827 U	0.84 U	0.829 U	0.923 U	0.856 U	0.865 U	0.891 U	0.858 U	0.938 U
Sodium, Total	NS	NS	NS	21 J	17.1 J	22.8 J	17.4 J	24 J	16.2 J	28.3 J	16.1 J	24.8 J
Thallium, Total	NS	NS	NS	1.65 U	1.68 U	1.66 U	1.84 U	1.71 U	1.73 U	1.78 U	1.72 U	1.88 U
Vanadium, Total	NS	NS	NS	9.26	9.13	9.37	11.7	13.5	11.8	13.4	14.2	11.8
Zinc, Total	2480	2200	109	11.2	7.43	11.5	9.07	12.4	9.28	12.5	12	9.19

Notes:

(1) New York NYCRR Part 375 Groundwater Criteria, New York Protection of Groundwater Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.

(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.

(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06

NS - No Standard

I - The lower value for the two columns has been reported due to obvious interference.

P- The RPD between the results for the two columns exceeds the method-specified criteria.

U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use S

Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 3

Soil Analytical for Total Metals

4285 Middle Country Rd,

Calverton, NY

Client Sample ID:	NYSDEC Protection of Ground water[1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	GRID P_0-2		GRID Q_0-2		GRID Q_18-24		GRID R_0-2		GRID S_0-2		GRID T_0-2		GRID U_0-2		GRID V_0-2		GRID W_0-2	
Laboratory ID:				L2155998-09		L2155998-11		L2155998-12		L2155998-13		L2155998-15		L2155998-17		L2156337-15		L2156337-17		L2156337-19	
Sampling Date:				10/13/2021		10/13/2021		10/13/2021		10/13/2021		10/13/2021		10/13/2021		10/14/2021		10/14/2021		10/14/2021	
Total Metals by USEPA Method 6010 in mg/kg																					
Aluminum, Total	NS	NS	NS	4,190		5,060		7,520		3,780		4,470		2,460		4,930		7,600		7,240	
Antimony, Total	NS	NS	NS	4.48	U	5.03	U	4.18	U	4.03	U	4.16	U	4.8	U	4.27	U	5.14	U	5.1	U
Arsenic, Total	16	16	13	10.2		18		17.6		11.4		12.3		5.83		9.86		7.87		10.4	
Barium, Total	820	350	350	13.6		17.1		17.4		9.82		7.32		4.3		8.66		12.3		11	
Beryllium, Total	47	14	7.2	0.125	J	0.151	J	0.192	J	0.105	J	0.117	J	0.058	J	0.128	J	0.175	J	0.184	J
Cadmium, Total	7.5	2.5	2.5	0.143	J	0.141	J	0.142	J	0.089	J	0.833	U	0.961	U	0.854	U	1.03	U	0.102	J
Calcium, Total	NS	NS	NS	490		514		403		430		296		170		96		98		121	
Chromium, Total	NS	NS	NS	6.84		6.39		7.89		4.61		5.02		4.04		5.6		7.63		7.91	
Cobalt, Total	NS	NS	NS	1.16	J	0.774	J	1.42	J	0.5	J	0.692	J	1.34	J	0.973	J	1.64	J	1.51	J
Copper, Total	1720	270	50	10.9		18.3		14.8		11.6		6.56		4.08		4.5		6		8.11	
Iron, Total	NS	NS	NS	5,400		5,920		8,010		4,100		5,010		4,410		5,140		8,260		8,510	
Lead, Total	450	400	63	58.4		20.6		14.1		12		7.76		5.26		4.27		6.39		6.63	
Magnesium, Total	NS	NS	NS	424		332		554		255		334		189		360		530		481	
Manganese, Total	2000	2000	1600	38.8		24.4		34.6		16.2		18		43.4		18.6		35.9		35.9	
Mercury, Total	0.73	0.81	0.18	0.09	U	0.103		0.076	J	0.085	U	0.076	U	0.098	U	0.074	U	0.093	U	0.085	U
Nickel, Total	130	140	30	2.63		1.83	J	3.12		1.34	J	1.79	J	1.18	J	2.07	J	3.37		3.17	
Potassium, Total	NS	NS	NS	120	J	129	J	152	J	88.6	J	99.9	J	65.5	J	100	J	145	J	146	J
Selenium, Total	4	36	3.9	1.79	U	2.01	U	1.67	U	0.209	J	1.67	U	1.92	U	1.71	U	2.06	U	2.04	U
Silver, Total	8.3	36	2	0.896	U	1	U	0.836	U	0.806	U	0.833	U	0.961	U	0.854	U	1.03	U	1.02	U
Sodium, Total	NS	NS	NS	46.8	J	24.2	J	39.9	J	14.2	J	15.4	J	12.9	J	11.4	J	12.5	J	13.9	J
Thallium, Total	NS	NS	NS	1.79	U	2.01	U	1.67	U	1.61	U	1.67	U	1.92	U	1.71	U	2.06	U	2.04	U
Vanadium, Total	NS	NS	NS	10.2		10.8		13.7		7.93		9.18		5.38		9.37		14.1		14.4	
Zinc, Total	2480	2200	109	26.9		11.4		13.8		6.91		6.96		4.28	J	6.73		11.3		10.4	

Notes:

(1) New York NYCRR Part 375 Groundwater Criteria, New York Protection of Groundwater Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.

(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.

(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06

NS - No Standard

I - The lower value for the two columns has been reported due to obvious interference.

P- The RPD between the results for the two columns exceeds the method-specified criteria.

U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use S

Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 3
Soil Analytical for Total Metals
4285 Middle Country Rd,
Calverton, NY

Client Sample ID: Laboratory ID: Sampling Date:	NYSDEC Protection of Ground water[1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	GRID X_0-2 L2156337-21 10/14/2021	GRID Y_0-2 L2156337-23 10/14/2021	GRID Z_0-2 L2156730-17 10/15/2021	GRID AA_0-2 L2156730-01 10/15/2021	GRID AB_0-2 L2156730-03 10/15/2021	GRID AC_0-2 L2156730-05 10/15/2021	GRID AC_18-24 L2156730-06 10/15/2021	GRID AD_0-2 L2156730-07 10/15/2021	GRID AD_18-24 L2156730-08 10/15/2021
Total Metals by USEPA Method 6010 in mg/kg												
Aluminum, Total	NS	NS	NS	5,880	6,870	4,970	6,760	4,420	6,230	4,910	5,010	9,630
Antimony, Total	NS	NS	NS	3.91 U	4.17 U	3.94 U	4.4 U	4.18 U	4.16 U	4.97 U	4.24 U	4.22 U
Arsenic, Total	16	16	13	5.23	10.5	8.99	4.72	9.35	17.6	3.58	14.8	7.71
Barium, Total	820	350	350	11	12	8.05	13.6	26.5	12.2	16.6	33.2	34.9
Beryllium, Total	47	14	7.2	0.148 J	0.167 J	0.126 J	0.167 J	0.109 J	0.1 J	0.119 J	0.153 J	0.262 J
Cadmium, Total	7.5	2.5	2.5	0.078 J	0.092 J	0.142 J	0.167 J	0.217 J	0.141 J	0.995 U	0.331 J	0.194 J
Calcium, Total	NS	NS	NS	71	113	114	94	3,190	485	305	5,460	3,360
Chromium, Total	NS	NS	NS	6.83	7.22	5.56	7.34	6.12	6.44	6.07	8	11.6
Cobalt, Total	NS	NS	NS	2.27	2.34	1.45 J	2.52	1.7	0.99 J	1.8 J	2.2	3.8
Copper, Total	1720	270	50	5.5	9.71	7.91	5.34	11.9	10.5	4.84	19.1	12.6
Iron, Total	NS	NS	NS	6,640	7,350	6,040	7,370	6,480	6,190	6,170	7,720	10,900
Lead, Total	450	400	63	5.58	6.43	5.23	4.74	31.2	11.3	10	44.1	34.1
Magnesium, Total	NS	NS	NS	580	648	506	899	1,040	475	608	1,720	1,520
Manganese, Total	2000	2000	1600	53.8	52	36.5	49.2	79	23.7	31.9	86.1	97.8
Mercury, Total	0.73	0.81	0.18	0.068 U	0.076 U	0.066 U	0.072 U	0.086	0.068 U	0.08 U	0.083	0.062 J
Nickel, Total	130	140	30	3.47	3.75	2.42	4	4.18	2.35	3.19	5.45	8.07
Potassium, Total	NS	NS	NS	133 J	145 J	137 J	194 J	236	108 J	148 J	287	378
Selenium, Total	4	36	3.9	1.56 U	1.67 U	1.57 U	1.76 U	1.67 U	1.66 U	1.99 U	1.7 U	0.6 J
Silver, Total	8.3	36	2	0.782 U	0.834 U	0.787 U	0.88 U	0.836 U	0.832 U	0.995 U	0.849 U	0.845 U
Sodium, Total	NS	NS	NS	10.8 J	12.1 J	11 J	19.5 J	34 J	19 J	24.5 J	116 J	45.5 J
Thallium, Total	NS	NS	NS	1.56 U	1.67 U	1.57 U	1.76 U	1.67 U	1.66 U	1.99 U	1.7 U	1.69 U
Vanadium, Total	NS	NS	NS	11.3	12.8	8.72	12.1	10.1	10.5	9.99	11.9	17.9
Zinc, Total	2480	2200	109	11	11.9	7.79	11.1	25.5	9.64	13.2	40	36.6

Notes:
(1) New York NYCRR Part 375 Groundwater Criteria, New York Protection of Groundwater Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.

(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.

(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06
NS - No Standard
I - The lower value for the two columns has been reported due to obvious interference.
P- The RPD between the results for the two columns exceeds the method-specified criteria.
U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use S
Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO
Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 4

Soil Analytical for Pesticides, PCBs and Herbicides

4285 Middle Country Rd,

Calverton, NY

Client Sample ID: / Laboratory ID: / Sampling Date:	NYSDEC Protection of Ground water [1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	SB001_0-2 / L2155380-01 / 10/11/2021	SB002_3-5 / L2155380-02 / 10/11/2021	SB003_2-4 / L2155380-03 / 10/11/2021	SB004_4-6 / L2155380-04 / 10/11/2021	SB005_1-3 / L2155380-05 / 10/11/2021	SB006_2-4 / L2155380-06 / 10/11/2021	SB007_5-7 / L2155380-07 / 10/11/2021	SB008_6-8 / L2155380-08 / 10/11/2021	SB009_2-4 / L2155380-09 / 10/11/2021	SB010_6-8 / L2155380-10 / 10/11/2021	GRID A_0-2 / L2155998-01 / 10/13/2021	GRID A_18-24 / L2155998-02 / 10/13/2021
Organochlorine Pesticides by USEPA Method 8081 in mg/kg															
4,4'-DDD	14	2.6	0.0033	0.0025	0.00158 U	0.00172 U	0.00128 J	0.00309	0.00165 U	0.00158 U	0.0018 U	0.0513	0.249 P	0.0555	0.00779
4,4'-DDE	17	1.8	0.0033	0.0873	0.00158 U	0.00354	0.0465	0.108	0.00689	0.00235	0.0018 U	0.243	0.157 P	0.562	0.335
4,4'-DDT	136	1.7	0.0033	0.233	0.00297 U	0.00265 J	0.0896	0.131	0.013	0.00587	0.00337 U	0.203	0.196 P	1.57	0.404
Aldrin	0.19	0.019	0.005	0.00169 U	0.00158 U	0.00172 U	0.00165 U	0.0017 U	0.00165 U	0.00158 U	0.0018 U	0.00172 U	0.00466 JP	0.00185 U	0.0049 U
Alpha-BHC	0.02	0.097	0.02	0.000703 U	0.00066 U	0.000718 U	0.000689 U	0.000709 U	0.000688 U	0.00066 U	0.000748 U	0.000718 U	0.00348 U	0.000773 U	0.00204 U
Beta-BHC	0.09	0.072	0.036	0.00169 U	0.00158 U	0.00172 U	0.00165 U	0.0017 U	0.00165 U	0.00158 U	0.0018 U	0.00172 U	0.00836 U	0.00185 U	0.0049 U
Chlordane	NS	NS	NS	0.0141 U	0.0132 U	0.0144 U	0.0138 U	0.0142 U	0.0138 U	0.0132 U	0.015 U	0.131 P	0.0697 U	0.0154 U	0.0408 U
cis-Chlordane	2.9	0.91	0.1	0.00211 U	0.00198 U	0.00215 U	0.00207 U	0.00213 U	0.00206 U	0.00198 U	0.00224 U	0.0226	0.0258 P	0.00232 U	0.00612 U
Delta-BHC	0.25	100	0.04	0.00169 U	0.00158 U	0.00172 U	0.00165 U	0.0017 U	0.00165 U	0.00158 U	0.0018 U	0.00172 U	0.00836 U	0.00185 U	0.0049 U
Dieldrin	0.1	0.039	0.005	0.00969	0.00099 U	0.00108 U	0.00228	0.00888	0.000844 J	0.000991 U	0.00112 U	0.0233	0.0327 P	0.0559	0.0579
Endosulfan I	102.0	4.8	2.4	0.00169 U	0.00158 U	0.00172 U	0.00165 U	0.0017 U	0.00165 U	0.00158 U	0.0018 U	0.00172 U	0.00836 U	0.00185 U	0.0049 U
Endosulfan II	102.0	4.8	2.4	0.00126 J	0.00158 U	0.00172 U	0.00116 JP	0.000642 J	0.00165 U	0.00158 U	0.0018 U	0.00172 U	0.00836 U	0.00729	0.00216 J
Endosulfan sulfate	1,000.0	4.8	2.4	0.00493	0.00066 U	0.000718 U	0.00303	0.0044	0.000725 P	0.00066 U	0.000748 U	0.00248 IP	0.0462 P	0.0319	0.00286
Endrin	0.06	2.2	0.014	0.00113	0.00066 U	0.000718 U	0.000712 P	0.000865	0.000688 U	0.00066 U	0.000748 U	0.000718 U	0.00348 U	0.00419	0.0014 J
Endrin aldehyde	NS	NS	NS	0.00211 U	0.00198 U	0.00215 U	0.00207 U	0.00213 U	0.00206 U	0.00198 U	0.00224 U	0.00215 U	0.0104 U	0.00232 U	0.00612 U
Endrin ketone	NS	NS	NS	0.00169 U	0.00127 JIP	0.00195 IP	0.00256 IP	0.00255 IP	0.00101 JIP	0.000894 JIP	0.00126 JIP	0.00172 U	0.00469 JP	0.00185 U	0.0049 U
Heptachlor	0.38	0.42	0.042	0.000844 U	0.000792 U	0.000861 U	0.000827 U	0.000851 U	0.000825 U	0.000793 U	0.000898 U	0.000863	0.00418 U	0.000927 U	0.00245 U
Heptachlor epoxide	NS	NS	NS	0.00316 U	0.00297 U	0.00323 U	0.0031 U	0.00319 U	0.00309 U	0.00297 U	0.00337 U	0.00205 JIP	0.0157 U	0.00348 U	0.00918 U
Lindane	0.1	0.28	0.1	0.000703 U	0.00066 U	0.000718 U	0.000689 U	0.000709 U	0.000688 U	0.00066 U	0.000748 U	0.000718 U	0.00348 U	0.000773 U	0.00204 U
Methoxychlor	NS	NS	NS	0.00188 JIP	0.00297 U	0.00323 U	0.0031 U	0.00319 U	0.00309 U	0.00297 U	0.00337 U	0.00323 U	0.0157 U	0.00348 U	0.00967
Toxaphene	NS	NS	NS	0.0316 U	0.0297 U	0.0323 U	0.031 U	0.0319 U	0.0309 U	0.0297 U	0.0337 U	0.0323 U	0.157 U	0.0348 U	0.0918 U
trans-Chlordane	NS	NS	NS	0.00129 JP	0.00198 U	0.00215 U	0.00207 U	0.00213 U	0.00206 U	0.00198 U	0.00224 U	0.0212	0.0224 P	0.00232 U	0.00612 U
Polychlorinated Biphenyls by USEPA Method 8082 in mg/kg															
Aroclor 1016	0.1	0.1	1	0.0352 U	0.0324 U	0.0356 U	0.0344 U	0.0357 U	0.0356 U	0.0334 U	0.039 U	0.0357 U	0.0354 U	0.0394 U	
Aroclor 1221	0.1	0.1	1	0.0352 U	0.0324 U	0.0356 U	0.0344 U	0.0357 U	0.0356 U	0.0334 U	0.039 U	0.0357 U	0.0354 U	0.0394 U	
Aroclor 1232	0.1	0.1	1	0.0352 U	0.0324 U	0.0356 U	0.0344 U	0.0357 U	0.0356 U	0.0334 U	0.039 U	0.0357 U	0.0354 U	0.0394 U	
Aroclor 1242	0.1	0.1	1	0.0352 U	0.0324 U	0.0356 U	0.0344 U	0.0357 U	0.0356 U	0.0334 U	0.039 U	0.0357 U	0.0354 U	0.0394 U	
Aroclor 1248	0.1	0.1	1	0.0352 U	0.0324 U	0.0356 U	0.0344 U	0.0357 U	0.0356 U	0.0334 U	0.039 U	0.0357 U	0.0354 U	0.0394 U	
Aroclor 1254	0.1	0.1	1	0.0352 U	0.0324 U	0.0356 U	0.0344 U	0.0357 U	0.0356 U	0.0334 U	0.039 U	0.0357 U	0.0354 U	0.0394 U	
Aroclor 1260	0.1	0.1	1	0.0352 U	0.0324 U	0.0356 U	0.0344 U	0.0357 U	0.0356 U	0.0334 U	0.039 U	0.077	0.0354 U	0.0394 U	
Aroclor 1262	0.1	0.1	1	0.0352 U	0.0324 U	0.0356 U	0.0344 U	0.0357 U	0.0356 U	0.0334 U	0.039 U	0.0357 U	0.0354 U	0.0394 U	
Aroclor 1268	0.1	0.1	1	0.0352 U	0.0324 U	0.0356 U	0.0344 U	0.0357 U	0.0356 U	0.0334 U	0.039 U	0.0357 U	0.0221 J	0.0394 U	
PCBs, Total	0.1	0.1	1	0.0352 U	0.0324 U	0.0356 U	0.0344 U	0.0357 U	0.0356 U	0.0334 U	0.039 U	0.077	0.0221 J	0.0394 U	
Chlorinated Herbicides by GC in mg/kg															
2,4,5-T	0.1	0.1	1	0.174 U	0.17 U	0.186 U	0.169 U	0.181 U	0.178 U	0.166 U	0.198 U	0.182 U	0.181 U	0.198 U	
2,4,5-TP (Silvex)	0.1	0.1	1	0.174 U	0.17 U	0.186 U	0.169 U	0.181 U	0.178 U	0.166 U	0.198 U	0.182 U	0.181 U	0.198 U	
2,4-D	0.1	0.1	1	0.174 U	0.17 U	0.186 U	0.169 U	0.181 U	0.178 U	0.166 U	0.198 U	0.182 U	0.181 U	0.198 U	

Notes:

(1) New York NYCRR Part 375 Groundwater Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.

(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.

(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06

NS - No Standard

I - The lower value for the two columns has been reported due to obvious interference.

P- The RPD between the results for the two columns exceeds the method-specified criteria.

U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 4

Soil Analytical for Pesticides, PCBs and Herbicides

4285 Middle Country Rd,

Calverton, NY

Client Sample ID: / Laboratory ID: / Sampling Date:	NYSDEC Protection of Ground water [1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	GRID B_0-2 L2155998-03 10/13/2021	GRID B_18-24 L2155998-04 10/13/2021	GRID C_0-2 L2155998-05 10/13/2021	GRID C_18-24 L2155998-06 10/13/2021	GRID D_0-2 L2155998-07 10/13/2021	GRID D_18-24 L2155998-08 10/13/2021	GRID E_0-2 L2156337-01 10/14/2021	GRID F_0-2 L2156337-03 10/14/2021	GRID F_18-24 L2156337-04 10/14/2021	GRID G_0-2 L2156337-05 10/14/2021	GRID G_18-24 L2156337-06 10/14/2021	GRID H_0-2 L2156337-07 10/14/2021
Organochlorine Pesticides by USEPA Method 8081 in mg/kg															
4,4'-DDD	14	2.6	0.0033	0.0897	0.116	0.00546	0.00422 J	0.00195 U	0.00165 U	0.00205 U	0.00151 J	0.00192 U	0.00164 U	0.00174 U	0.00683
4,4'-DDE	17	1.8	0.0033	0.401	0.367	0.449	0.147	0.0333	0.00334	0.00205 U	0.0683	0.0191	0.0662	0.0126	0.4
4,4'-DDT	136	1.7	0.0033	0.343	0.744	0.681	0.247	0.0328	0.00277 J	0.00384 U	0.0872	0.0266	0.0882	0.017	0.793
Aldrin	0.19	0.019	0.005	0.0021 U	0.00456 U	0.00186 U	0.00556 U	0.00195 U	0.00165 U	0.00205 U	0.00159 U	0.00192 U	0.00164 U	0.00174 U	0.0017 U
Alpha-BHC	0.02	0.097	0.02	0.000873 U	0.0019 U	0.000775 U	0.00231 U	0.000812 U	0.000686 U	0.000853 U	0.000663 U	0.000802 U	0.000685 U	0.000725 U	0.000708 U
Beta-BHC	0.09	0.072	0.036	0.0021 U	0.00456 U	0.00186 U	0.00556 U	0.00195 U	0.00165 U	0.00205 U	0.00159 U	0.00192 U	0.00164 U	0.00174 U	0.0017 U
Chlordane	NS	NS	NS	0.0175 U	0.038 U	0.0155 U	0.0463 U	0.0162 U	0.0137 U	0.017 U	0.0132 U	0.016 U	0.0137 U	0.0145 U	0.0142 U
cis-Chlordane	2.9	0.91	0.1	0.00262 U	0.00571 U	0.00232 U	0.00694 U	0.00244 U	0.00206 U	0.00256 U	0.00199 U	0.0024 U	0.00205 U	0.00218 U	0.00212 U
Delta-BHC	0.25	100	0.04	0.0021 U	0.00456 U	0.00186 U	0.00556 U	0.00195 U	0.00165 U	0.00205 U	0.00159 U	0.00192 U	0.00164 U	0.00174 U	0.0017 U
Dieldrin	0.1	0.039	0.005	0.0461	0.0616	0.0167	0.00844	0.00272	0.00103 U	0.00128 U	0.00382	0.00098 J	0.00398 P	0.000687 J	0.0521
Endosulfan I	102.0	4.8	2.4	0.0021 U	0.00456 U	0.00186 U	0.00556 U	0.00195 U	0.00165 U	0.00205 U	0.00159 U	0.00192 U	0.00164 U	0.00174 U	0.0017 U
Endosulfan II	102.0	4.8	2.4	0.0021 U	0.00371 J	0.00318	0.0027 JP	0.00195 U	0.00165 U	0.00205 U	0.00159 U	0.00086 J	0.00164 U	0.00174 U	0.0017 U
Endosulfan sulfate	1,000.0	4.8	2.4	0.00653	0.0214	0.0142	0.00476	0.00197	0.000686 U	0.000853 U	0.000663 U	0.00193	0.000685 U	0.000541 JIP	0.000708 U
Endrin	0.06	2.2	0.014	0.00153	0.00348	0.000896	0.00231 U	0.000812 U	0.000686 U	0.000853 U	0.000663 U	0.000802 U	0.000685 U	0.000725 U	0.000708 U
Endrin aldehyde	NS	NS	NS	0.00262 U	0.00571 U	0.00232 U	0.00694 U	0.00244 U	0.00206 U	0.00256 U	0.00199 U	0.0024 U	0.00205 U	0.00218 U	0.00212 U
Endrin ketone	NS	NS	NS	0.00707 IP	0.00826 IP	0.0104 IP	0.00556 U	0.000777 JIP	0.00165 U	0.00205 U	0.00159 U	0.00192 U	0.00164 U	0.00174 U	0.0017 U
Heptachlor	0.38	0.42	0.042	0.00105 U	0.00228 U	0.00093 U	0.00278 U	0.000975 U	0.000823 U	0.00102 U	0.000795 U	0.000962 U	0.000822 U	0.00087 U	0.000849 U
Heptachlor epoxide	NS	NS	NS	0.00393 U	0.00856 U	0.00349 U	0.0104 U	0.00366 U	0.00309 U	0.00384 U	0.00298 U	0.00361 U	0.00308 U	0.00326 U	0.00318 U
Lindane	0.1	0.28	0.1	0.000873 U	0.0019 U	0.000775 U	0.00231 U	0.000812 U	0.000686 U	0.000853 U	0.000663 U	0.000802 U	0.000685 U	0.000725 U	0.000708 U
Methoxychlor	NS	NS	NS	0.00393 U	0.0169	0.00349 U	0.00538 JP	0.00366 U	0.00309 U	0.00384 U	0.00298 U	0.00361 U	0.00308 U	0.00326 U	0.00318 U
Toxaphene	NS	NS	NS	0.0393 U	0.0856 U	0.0349 U	0.104 U	0.0366 U	0.0309 U	0.0384 U	0.0298 U	0.0361 U	0.0308 U	0.0326 U	0.0318 U
trans-Chlordane	NS	NS	NS	0.00262 U	0.00571 U	0.00232 U	0.00694 U	0.00244 U	0.00206 U	0.00256 U	0.00199 U	0.0024 U	0.00205 U	0.00218 U	0.00212 U
Polychlorinated Biphenyls by USEPA Method 8082 in mg/kg															
Aroclor 1016	0.1	0.1	1								0.0327 U				
Aroclor 1221	0.1	0.1	1								0.0327 U				
Aroclor 1232	0.1	0.1	1								0.0327 U				
Aroclor 1242	0.1	0.1	1								0.0327 U				
Aroclor 1248	0.1	0.1	1								0.0327 U				
Aroclor 1254	0.1	0.1	1								0.0327 U				
Aroclor 1260	0.1	0.1	1								0.0327 U				
Aroclor 1262	0.1	0.1	1								0.0327 U				
Aroclor 1268	0.1	0.1	1								0.0327 U				
PCBs, Total	0.1	0.1	1								0.0327 U				
Chlorinated Herbicides by GC in mg/kg															
2,4,5-T	0.1	0.1	1								0.167 U				
2,4,5-TP (Silvex)	0.1	0.1	1								0.167 U				
2,4-D	0.1	0.1	1								0.167 U				

Notes:

(1) New York NYCRR Part 375 Groundwater Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.

(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.

(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06

NS - No Standard

I - The lower value for the two columns has been reported due to obvious interference.

P- The RPD between the results for the two columns exceeds the method-specified criteria

U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use

Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 4

Soil Analytical for Pesticides, PCBs and Herbicides

4285 Middle Country Rd,

Calverton, NY

Client Sample ID: / Laboratory ID: / Sampling Date:	NYSDEC Protection of Ground water [1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	GRID H_18-24 / L2156337-08 / 10/14/2021	GRID I_0-2 / L2156337-09 / 10/14/2021	GRID I_18-24 / L2156337-10 / 10/14/2021	GRID J_0-2 / L2156337-11 / 10/14/2021	GRID J_18-24 / L2156337-12 / 10/14/2021	GRID K_0-2 / L2156337-13 / 10/14/2021	GRID K_18-24 / L2156730-09 / 10/15/2021	GRID L_0-2 / L2156730-09 / 10/15/2021	GRID L_18-24 / L2156730-10 / 10/15/2021	GRID M_0-2 / L2156730-11 / 10/15/2021	GRID M_18-24 / L2156730-12 / 10/15/2021	GRID N_0-2 / L2156730-13 / 10/15/2021
Organochlorine Pesticides by USEPA Method 8081 in mg/kg															
4,4'-DDD	14	2.6	0.0033	0.00121 JIP	0.00888	0.00083 J	0.0056	0.00164 U	0.00979	0.00163 U	0.0071	0.00164 U	0.00503	0.000952 J	0.00633
4,4'-DDE	17	1.8	0.0033	0.132	0.269	0.0554	0.272	0.0111	0.378	0.0106	0.396	0.0119	0.358	0.0657	0.386
4,4'-DDT	136	1.7	0.0033	0.315	0.427	0.0983	0.502	0.0192	0.764	0.0213	0.735	0.023	0.641	0.123	0.618
Aldrin	0.19	0.019	0.005	0.00171 U	0.00171 U	0.00167 U	0.00165 U	0.00164 U	0.0017 U	0.00163 U	0.00164 U	0.00164 U	0.00188 U	0.00164 U	0.00174 U
Alpha-BHC	0.02	0.097	0.02	0.000713 U	0.000714 U	0.000696 U	0.000686 U	0.000682 U	0.000708 U	0.00068 U	0.000684 U	0.000685 U	0.000784 U	0.000685 U	0.000723 U
Beta-BHC	0.09	0.072	0.036	0.00171 U	0.00171 U	0.00167 U	0.00165 U	0.00164 U	0.0017 U	0.00163 U	0.00164 U	0.00164 U	0.00188 U	0.00164 U	0.00174 U
Chlordane	NS	NS	NS	0.0142 U	0.0143 U	0.0139 U	0.0137 U	0.0136 U	0.0142 U	0.0136 U	0.0137 U	0.0137 U	0.0157 U	0.0137 U	0.0145 U
cis-Chlordane	2.9	0.91	0.1	0.00214 U	0.00214 U	0.00209 U	0.00206 U	0.00204 U	0.00212 U	0.00204 U	0.00205 U	0.00206 U	0.00235 U	0.00206 U	0.000773 JIP
Delta-BHC	0.25	100	0.04	0.00171 U	0.00171 U	0.00167 U	0.00165 U	0.00164 U	0.0017 U	0.00163 U	0.00164 U	0.00164 U	0.00188 U	0.00164 U	0.00174 U
Dieldrin	0.1	0.039	0.005	0.016	0.0253	0.00331	0.0202	0.000595 J	0.03	0.000768 J	0.021	0.000696 J	0.0204	0.0034	0.017
Endosulfan I	102.0	4.8	2.4	0.00171 U	0.00171 U	0.00167 U	0.00165 U	0.00164 U	0.0017 U	0.00163 U	0.00164 U	0.00164 U	0.00188 U	0.00164 U	0.00174 U
Endosulfan II	102.0	4.8	2.4	0.00194	0.00171 U	0.000823 J	0.00165 U	0.00164 U	0.0017 U	0.00163 U	0.00951	0.00164 U	0.0117	0.00164 U	0.0086
Endosulfan sulfate	1,000.0	4.8	2.4	0.00959	0.000714 U	0.00353	0.000686 U	0.000682 U	0.000708 U	0.000687 IP	0.000684 U	0.00076 IP	0.000784 U	0.00633	0.000723 U
Endrin	0.06	2.2	0.014	0.000386 JIP	0.000714 U	0.000696 U	0.000686 U	0.000682 U	0.000708 U	0.00068 U	0.000684 U	0.000685 U	0.000784 U	0.000685 U	0.000723 U
Endrin aldehyde	NS	NS	NS	0.00214 U	0.00214 U	0.00209 U	0.00206 U	0.00204 U	0.00212 U	0.00204 U	0.00205 U	0.00206 U	0.00235 U	0.00206 U	0.00217 U
Endrin ketone	NS	NS	NS	0.00171 U	0.00171 U	0.00167 U	0.00165 U	0.00164 U	0.0017 U	0.00163 U	0.00164 U	0.00164 U	0.00188 U	0.00164 U	0.00174 U
Heptachlor	0.38	0.42	0.042	0.000855 U	0.000857 U	0.000835 U	0.000824 U	0.000818 U	0.00085 U	0.000816 U	0.00082 U	0.000822 U	0.000941 U	0.000822 U	0.000868 U
Heptachlor epoxide	NS	NS	NS	0.00321 U	0.00321 U	0.00313 U	0.00309 U	0.00307 U	0.00318 U	0.00306 U	0.00308 U	0.00308 U	0.00353 U	0.00308 U	0.00325 U
Lindane	0.1	0.28	0.1	0.000713 U	0.000714 U	0.000696 U	0.000686 U	0.000682 U	0.000708 U	0.00068 U	0.000684 U	0.000685 U	0.000784 U	0.000685 U	0.000723 U
Methoxychlor	NS	NS	NS	0.00101 JIP	0.00321 U	0.00313 U	0.00309 U	0.00307 U	0.00318 U	0.00306 U	0.00308 U	0.00308 U	0.00353 U	0.00128 JIP	0.00325 U
Toxaphene	NS	NS	NS	0.0321 U	0.0321 U	0.0313 U	0.0309 U	0.0307 U	0.0318 U	0.0306 U	0.0308 U	0.0308 U	0.0353 U	0.0308 U	0.0325 U
trans-Chlordane	NS	NS	NS	0.00214 U	0.00214 U	0.00209 U	0.00206 U	0.00204 U	0.00212 U	0.00204 U	0.00205 U	0.00206 U	0.00235 U	0.00206 U	0.00118 JIP
Polychlorinated Biphenyls by USEPA Method 8082 in mg/kg															
Aroclor 1016	0.1	0.1	1								0.0344 U				
Aroclor 1221	0.1	0.1	1								0.0344 U				
Aroclor 1232	0.1	0.1	1								0.0344 U				
Aroclor 1242	0.1	0.1	1								0.0344 U				
Aroclor 1248	0.1	0.1	1								0.0344 U				
Aroclor 1254	0.1	0.1	1								0.0344 U				
Aroclor 1260	0.1	0.1	1								0.0344 U				
Aroclor 1262	0.1	0.1	1								0.0344 U				
Aroclor 1268	0.1	0.1	1								0.0344 U				
PCBs, Total	0.1	0.1	1								0.0344 U				
Chlorinated Herbicides by GC in mg/kg															
2,4,5-T	0.1	0.1	1								0.178 U				
2,4,5-TP (Silvex)	0.1	0.1	1								0.178 U				
2,4-D	0.1	0.1	1								0.178 U				

Notes:

(1) New York NYCRR Part 375 Groundwater Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.

(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.

(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06

NS - No Standard

I - The lower value for the two columns has been reported due to obvious interference.

P- The RPD between the results for the two columns exceeds the method-specified criteria

U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use

Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 4

Soil Analytical for Pesticides, PCBs and Herbicides

4285 Middle Country Rd,

Calverton, NY

Client Sample ID: / Laboratory ID: / Sampling Date:	NYSDEC Protection of Ground water [1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	GRID N_18-24 / L2156730-14 / 10/15/2021	GRID O_0-2 / L2156730-15 / 10/15/2021	GRID O_18-24 / L2156730-16 / 10/15/2021	GRID P_18-24 / L2155998-10 / 10/13/2021	GRID Q_0-2 / L2155998-11 / 10/13/2021	GRID Q_18-24 / L2155998-12 / 10/13/2021	GRID R_0-2 / L2155998-13 / 10/13/2021	GRID R_18-24 / L2155998-14 / 10/13/2021	GRID S_0-2 / L2155998-15 / 10/13/2021	GRID S_18-24 / L2155998-16 / 10/13/2021	GRID T_0-2 / L2155998-17 / 10/13/2021	GRID T_18-24 / L2155998-18 / 10/13/2021
Organochlorine Pesticides by USEPA Method 8081 in mg/kg															
4,4'-DDD	14	2.6	0.0033	0.00181 U	0.0153	0.00117 JIP	0.00164 U	0.0104 P	0.00302	0.00401	0.00308	0.00206 P	0.0016 U	0.00347	0.00233
4,4'-DDE	17	1.8	0.0033	0.0189	0.758	0.0712 IP	0.0142	0.276	0.0871	0.242	0.13	0.0533	0.0132	0.0638	0.0668
4,4'-DDT	136	1.7	0.0033	0.0341	1.55	0.254	0.0166	0.799	0.172	0.459	0.209	0.107	0.0222	0.122	0.127
Aldrin	0.19	0.019	0.005	0.00181 U	0.00177 U	0.0019 U	0.00164 U	0.00199 U	0.00172 U	0.00167 U	0.00165 U	0.00166 U	0.0016 U	0.00187 U	0.00161 U
Alpha-BHC	0.02	0.097	0.02	0.000753 U	0.000737 U	0.000793 U	0.000685 U	0.00083 U	0.000715 U	0.000698 U	0.000686 U	0.000692 U	0.000667 U	0.00078 U	0.000671 U
Beta-BHC	0.09	0.072	0.036	0.00181 U	0.00177 U	0.0019 U	0.00164 U	0.00199 U	0.00172 U	0.00167 U	0.00165 U	0.00166 U	0.0016 U	0.00187 U	0.00161 U
Chlordane	NS	NS	NS	0.0151 U	0.0147 U	0.0158 U	0.0137 U	0.0166 U	0.0143 U	0.014 U	0.0137 U	0.0138 U	0.0133 U	0.0156 U	0.0134 U
cis-Chlordane	2.9	0.91	0.1	0.00226 U	0.00221 U	0.00238 U	0.00206 U	0.00249 U	0.00214 U	0.00209 U	0.00206 U	0.00208 U	0.002 U	0.00234 U	0.00201 U
Delta-BHC	0.25	100	0.04	0.00181 U	0.00177 U	0.0019 U	0.00164 U	0.00199 U	0.00172 U	0.00167 U	0.00165 U	0.00166 U	0.0016 U	0.00187 U	0.00161 U
Dieldrin	0.1	0.039	0.005	0.000958 J	0.0428	0.00687	0.000744 J	0.0261	0.00809	0.00969	0.00438	0.00269	0.000902 J	0.0029	0.00356
Endosulfan I	102.0	4.8	2.4	0.00181 U	0.00177 U	0.000493 JIP	0.00164 U	0.00199 U	0.00172 U	0.00364 P	0.00165 U	0.00166 U	0.0016 U	0.00187 U	0.00161 U
Endosulfan II	102.0	4.8	2.4	0.00181 U	0.015	0.00197	0.00164 U	0.00196 J	0.00213	0.00693	0.00338	0.00172 P	0.0016 U	0.00253	0.00249
Endosulfan sulfate	1,000.0	4.8	2.4	0.000837 IP	0.000737 U	0.00874	0.000685 U	0.0101	0.00471	0.0168	0.00779	0.00395	0.000915	0.00342	0.00519
Endrin	0.06	2.2	0.014	0.000753 U	0.000737 U	0.000793 U	0.000485 J	0.00224	0.00113 P	0.00102	0.000792	0.000692 U	0.000667 U	0.00078 U	0.000293 JP
Endrin aldehyde	NS	NS	NS	0.00226 U	0.00221 U	0.00238 U	0.00206 U	0.00249 U	0.00214 U	0.00209 U	0.00206 U	0.00208 U	0.002 U	0.00234 U	0.00201 U
Endrin ketone	NS	NS	NS	0.00181 U	0.00177 U	0.0019 U	0.00164 U	0.00602 IP	0.00172 U	0.00967 IP	0.00165 U	0.00284 IP	0.0016 U	0.0025 IP	0.00161 U
Heptachlor	0.38	0.42	0.042	0.000904 U	0.000885 U	0.000951 U	0.000822 U	0.000996 U	0.000858 U	0.000837 U	0.000823 U	0.000831 U	0.0008 U	0.000936 U	0.000805 U
Heptachlor epoxide	NS	NS	NS	0.00339 U	0.00332 U	0.00357 U	0.00308 U	0.00374 U	0.00322 U	0.00314 U	0.00309 U	0.00312 U	0.003 U	0.00351 U	0.00302 U
Lindane	0.1	0.28	0.1	0.000753 U	0.000737 U	0.000793 U	0.000685 U	0.00083 U	0.000715 U	0.000698 U	0.000686 U	0.000692 U	0.000667 U	0.00078 U	0.000671 U
Methoxychlor	NS	NS	NS	0.00339 U	0.00332 U	0.00178 JIP	0.00154 J	0.00374 U	0.00425 P	0.00314 U	0.0059 P	0.00312 U	0.003 U	0.00351 U	0.00421 P
Toxaphene	NS	NS	NS	0.0339 U	0.0332 U	0.0357 U	0.0308 U	0.0374 U	0.0322 U	0.0314 U	0.0309 U	0.0312 U	0.03 U	0.0351 U	0.0302 U
trans-Chlordane	NS	NS	NS	0.00226 U	0.00108 JIP	0.00238 U	0.00206 U	0.00249 U	0.00214 U	0.00209 U	0.00206 U	0.00208 U	0.002 U	0.00234 U	0.00201 U
Polychlorinated Biphenyls by USEPA Method 8082 in mg/kg															
Aroclor 1016	0.1	0.1	1												
Aroclor 1221	0.1	0.1	1												
Aroclor 1232	0.1	0.1	1												
Aroclor 1242	0.1	0.1	1												
Aroclor 1248	0.1	0.1	1												
Aroclor 1254	0.1	0.1	1												
Aroclor 1260	0.1	0.1	1												
Aroclor 1262	0.1	0.1	1												
Aroclor 1268	0.1	0.1	1												
PCBs, Total	0.1	0.1	1												
Chlorinated Herbicides by GC in mg/kg															
2,4,5-T	0.1	0.1	1							0.173 U					
2,4,5-TP (Silvex)	0.1	0.1	1							0.173 U					
2,4-D	0.1	0.1	1							0.173 U					

Notes:

(1) New York NYCRR Part 375 Groundwater Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.

(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.

(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06

NS - No Standard

I - The lower value for the two columns has been reported due to obvious interference.

P- The RPD between the results for the two columns exceeds the method-specified criteria

U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use

Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 4

Soil Analytical for Pesticides, PCBs and Herbicides

4285 Middle Country Rd,

Calverton, NY

Client Sample ID: / Laboratory ID: / Sampling Date:	NYSDEC Protection of Ground water [1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	GRID U_0-2 L2156337-15 10/14/2021	GRID U_18-24 L2156337-16 10/14/2021	GRID V_0-2 L2156337-17 10/14/2021	GRID V_18-24 L2156337-18 10/14/2021	GRID W_0-2 L2156337-19 10/14/2021	GRID W_18-24 L2156337-20 10/14/2021	GRID X_0-2 L2156337-21 10/14/2021	GRID X_18-24 L2156337-22 10/14/2021	GRID Y_0-2 L2156337-23 10/14/2021	GRID Y_18-24 L2156337-24 10/14/2021	GRID Z_0-2 L2156730-17 10/15/2021	GRID Z_18-24 L2156730-18 10/15/2021
Organochlorine Pesticides by USEPA Method 8081 in mg/kg															
4,4'-DDD	14	2.6	0.0033	0.00306 P	0.00178 U	0.00205 U	0.00342 IP	0.00197 U	0.00164 U	0.00134 JP	0.00158 U	0.00171	0.00161 U	0.00336	0.00439
4,4'-DDE	17	1.8	0.0033	0.0473	0.00244	0.0168	0.134	0.0385	0.00543	0.00676	0.0013 J	0.0673	0.00142 J	0.0472	0.0595
4,4'-DDT	136	1.7	0.0033	0.0892	0.00492	0.0367	0.335	0.053	0.00867	0.0139	0.00257 J	0.116	0.00338	0.118	0.255
Aldrin	0.19	0.019	0.005	0.00174 U	0.00178 U	0.00205 U	0.00167 U	0.00197 U	0.00164 U	0.00162 U	0.00158 U	0.0017 U	0.00161 U	0.00167 U	0.00171 U
Alpha-BHC	0.02	0.097	0.02	0.000727 U	0.000744 U	0.000854 U	0.000697 U	0.00082 U	0.000683 U	0.000676 U	0.000656 U	0.000706 U	0.000672 U	0.000695 U	0.000711 U
Beta-BHC	0.09	0.072	0.036	0.00174 U	0.00178 U	0.00205 U	0.00167 U	0.00197 U	0.00164 U	0.00162 U	0.00158 U	0.0017 U	0.00161 U	0.00167 U	0.00171 U
Chlordane	NS	NS	NS	0.0145 U	0.0149 U	0.0171 U	0.0139 U	0.0164 U	0.0137 U	0.0135 U	0.0131 U	0.0141 U	0.0134 U	0.0139 U	0.0142 U
cis-Chlordane	2.9	0.91	0.1	0.00218 U	0.00223 U	0.00256 U	0.00209 U	0.00246 U	0.00205 U	0.00203 U	0.00197 U	0.00212 U	0.00202 U	0.00208 U	0.00213 U
Delta-BHC	0.25	100	0.04	0.00174 U	0.00178 U	0.00205 U	0.00167 U	0.00197 U	0.00164 U	0.00162 U	0.00158 U	0.0017 U	0.00161 U	0.00167 U	0.00171 U
Dieldrin	0.1	0.039	0.005	0.00608 P	0.00112 U	0.00229 P	0.0124	0.00252	0.00102 U	0.00101 U	0.000984 U	0.00427	0.00101 U	0.00362	0.00561
Endosulfan I	102.0	4.8	2.4	0.00174 U	0.00178 U	0.00205 U	0.00167 U	0.00197 U	0.00164 U	0.00162 U	0.00158 U	0.0017 U	0.00161 U	0.00167 U	0.00171 U
Endosulfan II	102.0	4.8	2.4	0.00174 U	0.00178 U	0.00205 U	0.00152 J	0.00197 U	0.00164 U	0.00162 U	0.00158 U	0.0017 U	0.00161 U	0.00167 U	0.00171 U
Endosulfan sulfate	1,000.0	4.8	2.4	0.000727 U	0.000744 U	0.000854 U	0.0108	0.00082 U	0.000683 U	0.000676 U	0.000656 U	0.000706 U	0.000672 U	0.000695 U	0.00686
Endrin	0.06	2.2	0.014	0.000727 U	0.000744 U	0.000854 U	0.00182	0.00082 U	0.000683 U	0.000676 U	0.000656 U	0.000706 U	0.000672 U	0.000695 U	0.000711 U
Endrin aldehyde	NS	NS	NS	0.00218 U	0.00223 U	0.00256 U	0.00209 U	0.00246 U	0.00205 U	0.00203 U	0.00197 U	0.00212 U	0.00202 U	0.00208 U	0.00213 U
Endrin ketone	NS	NS	NS	0.00174 U	0.00178 U	0.00205 U	0.00167 U	0.00197 U	0.00164 U	0.00162 U	0.00158 U	0.0017 U	0.00161 U	0.00167 U	0.00171 U
Heptachlor	0.38	0.42	0.042	0.000873 U	0.000893 U	0.00102 U	0.000836 U	0.000984 U	0.00082 U	0.000811 U	0.000788 U	0.000848 U	0.000806 U	0.000834 U	0.000853 U
Heptachlor epoxide	NS	NS	NS	0.00327 U	0.00335 U	0.00384 U	0.00314 U	0.00369 U	0.00307 U	0.00304 U	0.00295 U	0.00318 U	0.00302 U	0.00313 U	0.0032 U
Lindane	0.1	0.28	0.1	0.000727 U	0.000744 U	0.000854 U	0.000697 U	0.00082 U	0.000683 U	0.000676 U	0.000656 U	0.000706 U	0.000672 U	0.000695 U	0.000711 U
Methoxychlor	NS	NS	NS	0.00327 U	0.00335 U	0.00384 U	0.00274 JIP	0.00369 U	0.00307 U	0.00304 U	0.00295 U	0.00318 U	0.00302 U	0.00313 U	0.0032 U
Toxaphene	NS	NS	NS	0.0327 U	0.0335 U	0.0384 U	0.0314 U	0.0369 U	0.0307 U	0.0304 U	0.0295 U	0.0318 U	0.0302 U	0.0313 U	0.032 U
trans-Chlordane	NS	NS	NS	0.00218 U	0.00223 U	0.00256 U	0.00209 U	0.00246 U	0.00205 U	0.00203 U	0.00197 U	0.00212 U	0.00202 U	0.00208 U	0.00213 U
Polychlorinated Biphenyls by USEPA Method 8082 in mg/kg															
Aroclor 1016	0.1	0.1	1							0.0337 U					
Aroclor 1221	0.1	0.1	1							0.0337 U					
Aroclor 1232	0.1	0.1	1							0.0337 U					
Aroclor 1242	0.1	0.1	1							0.0337 U					
Aroclor 1248	0.1	0.1	1							0.0337 U					
Aroclor 1254	0.1	0.1	1							0.0337 U					
Aroclor 1260	0.1	0.1	1							0.0337 U					
Aroclor 1262	0.1	0.1	1							0.0337 U					
Aroclor 1268	0.1	0.1	1							0.0337 U					
PCBs, Total	0.1	0.1	1							0.0337 U					
Chlorinated Herbicides by GC in mg/kg															
2,4,5-T	0.1	0.1	1							0.171 U					
2,4,5-TP (Silvex)	0.1	0.1	1							0.171 U					
2,4-D	0.1	0.1	1							0.171 U					

Notes:

(1) New York NYCRR Part 375 Groundwater Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.

(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.

(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06

NS - No Standard

I - The lower value for the two columns has been reported due to obvious interference.

P- The RPD between the results for the two columns exceeds the method-specified criteria

U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use

Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

Table 4

Soil Analytical for Pesticides, PCBs and Herbicides

4285 Middle Country Rd,

Calverton, NY

Client Sample ID: / Laboratory ID: / Sampling Date:	NYSDEC Protection of Ground water [1]	NYSDEC Soil Cleanup Objectives Residential Use [2]	NYSDEC Soil Cleanup Objectives Unrestricted Use [3]	GRID AA_0-2 / L2156730-01 / 10/15/2021	GRID AA_18-24 / L2156730-02 / 10/15/2021	GRID AB_0-2 / L2156730-03 / 10/15/2021	GRID AB_18-24 / L2156730-04 / 10/15/2021	GRID AC_0-2 / L2156730-05 / 10/15/2021	GRID AC_18-24 / L2156730-06 / 10/15/2021	GRID AD_0-2 / L2156730-07 / 10/15/2021	GRID AD_18-24 / L2156730-08 / 10/15/2021
Organochlorine Pesticides by USEPA Method 8081 in mg/kg											
4,4'-DDD	14	2.6	0.0033	0.00176 U	0.00155 U	0.00489	0.00165 U	0.00139 J	0.00198 U	0.00605	0.0164
4,4'-DDE	17	1.8	0.0033	0.00444	0.0204	0.103	0.0197	0.0838	0.00562	0.243	0.0564
4,4'-DDT	136	1.7	0.0033	0.022	0.032	0.183	0.0289	0.112	0.00906	0.322	0.0778
Aldrin	0.19	0.019	0.005	0.00176 U	0.00155 U	0.00166 U	0.00165 U	0.00163 U	0.00198 U	0.00164 U	0.00172 U
Alpha-BHC	0.02	0.097	0.02	0.000734 U	0.000644 U	0.000693 U	0.000688 U	0.000681 U	0.000824 U	0.000684 U	0.000717 U
Beta-BHC	0.09	0.072	0.036	0.00176 U	0.00155 U	0.00166 U	0.00165 U	0.00163 U	0.00198 U	0.00164 U	0.00172 U
Chlordane	NS	NS	NS	0.0147 U	0.0129 U	0.0139 U	0.0138 U	0.0136 U	0.0165 U	0.0766	0.0469
cis-Chlordane	2.9	0.91	0.1	0.0022 U	0.00193 U	0.00648 IP	0.0013 JP	0.00204 U	0.00247 U	0.0122	0.00497 IP
Delta-BHC	0.25	100	0.04	0.00176 U	0.00155 U	0.00166 U	0.00165 U	0.00163 U	0.00198 U	0.00164 U	0.00172 U
Dieldrin	0.1	0.039	0.005	0.0011	0.00105	0.0105 IP	0.00143	0.00493	0.00124 U	0.0153	0.00578
Endosulfan I	102.0	4.8	2.4	0.00176 U	0.00155 U	0.00166 U	0.00165 U	0.00163 U	0.00198 U	0.00164 U	0.00172 U
Endosulfan II	102.0	4.8	2.4	0.00176 U	0.00155 U	0.00166 U	0.00165 U	0.00163 U	0.00198 U	0.00164 U	0.00114 J
Endosulfan sulfate	1,000.0	4.8	2.4	0.000734 U	0.00106 P	0.000693 U	0.000688 U	0.000681 U	0.000824 U	0.000684 U	0.00161 IP
Endrin	0.06	2.2	0.014	0.000734 U	0.000644 U	0.000693 U	0.000688 U	0.000681 U	0.000824 U	0.000684 U	0.000717 U
Endrin aldehyde	NS	NS	NS	0.0022 U	0.00193 U	0.00208 U	0.00206 U	0.00204 U	0.00247 U	0.00205 U	0.00215 U
Endrin ketone	NS	NS	NS	0.00176 U	0.00155 U	0.00166 U	0.00165 U	0.00163 U	0.00198 U	0.00164 U	0.00172 U
Heptachlor	0.38	0.42	0.042	0.00088 U	0.000773 U	0.000832 U	0.000825 U	0.000817 U	0.000989 U	0.000821 U	0.000411 JIP
Heptachlor epoxide	NS	NS	NS	0.0033 U	0.0029 U	0.00312 U	0.00309 U	0.00306 U	0.00371 U	0.00308 U	0.00322 U
Lindane	0.1	0.28	0.1	0.000734 U	0.000644 U	0.000693 U	0.000688 U	0.000681 U	0.000824 U	0.000684 U	0.000717 U
Methoxychlor	NS	NS	NS	0.0033 U	0.0029 U	0.00312 U	0.00309 U	0.00306 U	0.00371 U	0.00308 U	0.00322 U
Toxaphene	NS	NS	NS	0.033 U	0.029 U	0.0312 U	0.0309 U	0.0306 U	0.0371 U	0.0308 U	0.0322 U
trans-Chlordane	NS	NS	NS	0.0022 U	0.00193 U	0.00715	0.00206 U	0.00204 U	0.00247 U	0.0119	0.0072
Polychlorinated Biphenyls by USEPA Method 8082 in mg/kg											
Aroclor 1016	0.1	0.1	1							0.0348 U	
Aroclor 1221	0.1	0.1	1							0.0348 U	
Aroclor 1232	0.1	0.1	1							0.0348 U	
Aroclor 1242	0.1	0.1	1							0.0348 U	
Aroclor 1248	0.1	0.1	1							0.0348 U	
Aroclor 1254	0.1	0.1	1							0.0348 U	
Aroclor 1260	0.1	0.1	1							0.0348 U	
Aroclor 1262	0.1	0.1	1							0.0348 U	
Aroclor 1268	0.1	0.1	1							0.0348 U	
PCBs, Total	0.1	0.1	1							0.0348 U	
Chlorinated Herbicides by GC in mg/kg											
2,4,5-T	0.1	0.1	1							0.178 U	
2,4,5-TP (Silvex)	0.1	0.1	1							0.178 U	
2,4-D	0.1	0.1	1							0.178 U	

Notes:

(1) New York NYCRR Part 375 Groundwater Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs, 12/06.

(2) New York NYCRR Part 375 Residential Criteria, New York Restricted use Criteria per 6 NYCRR Part 375 Environmental Remediation Programs,12/06.

(3) NYSDEC 6 NYCRR Environmental Remediation Programs Part 375 Unrestriced Use of Soil Cleanup Objective Table 375-6.8a 12/06

NS - No Standard

I - The lower value for the two columns has been reported due to obvious interference.

P- The RPD between the results for the two columns exceeds the method-specified criteria

U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

Highlighted text denotes concentrations exceeding NYSDEC Protection of Groundwater Use

Highlighted text denotes concentrations exceeding NYSDEC Residential Use SCO

Highlighted text denotes concentrations exceeding NYSDEC Unrestricted Use SCO

APPENDIX A
LABORATORY ANALYTICAL REPORTS

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353
PWGROSSER.COM
630 JOHNSON AVENUE, STE 7
BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

www.alphalab.com

Alpha Analytical

Laboratory Code: 11148

SDG Number: L2155380

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Table of Contents

New York ASP Category A Data Deliverable Package 1
- Table of Contents 2
- Sample ID Cross Reference 3
- SDG Narrative 4
- Data Qualifier Definitions 6
- Instrument Information 9
- Sample Log-in Sheet 12
- Lims COC (LN01) 13
- External Chain of Custody 16
- Organics Analysis 17
  - Volatiles Data 18
    - Volatiles Sample Data 19
      - Form 1 - Organics 20
  - Semivolatiles Data - Method 8270D 64
    - Semivolatiles Sample Data 65
      - Form 1 - Organics 66
  - GC PCB Analysis 110
    - Aroclor Sample Data 111
      - Form 1 - Organics 112
  - GC Pesticide Analysis 125
    - Pesticides Sample Data 126
      - Form 1 - Organics 127
  - GC Herbicide Analysis 154
    - Herbicides Sample Data 155
      - Form 1 - Organics 156
- Metals Analysis 167
  - Inorganic Data (ICP Analysis) 168
    - Form 1 - Inorganics 169
  - Inorganic Data (Mercury Analysis) 181
    - Form 1 - Inorganics 182
- Wet Chemistry Analysis 194
  - Total Solids Analysis 195
    - Results 196
      - Form 1 - Inorganics 197

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101

Lab Number: L2155380
Report Date: 10/25/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2155380-01	SB001_0-2	SOIL	4285 MIDDLE COUNTRY RD, CALVERTON, NY	10/11/21 11:10	10/11/21
L2155380-02	SB002_3-5	SOIL	4285 MIDDLE COUNTRY RD, CALVERTON, NY	10/11/21 11:30	10/11/21
L2155380-03	SB003_2-4	SOIL	4285 MIDDLE COUNTRY RD, CALVERTON, NY	10/11/21 11:50	10/11/21
L2155380-04	SB004_4-6	SOIL	4285 MIDDLE COUNTRY RD, CALVERTON, NY	10/11/21 12:15	10/11/21
L2155380-05	SB005_1-3	SOIL	4285 MIDDLE COUNTRY RD, CALVERTON, NY	10/11/21 12:35	10/11/21
L2155380-06	SB006_2-4	SOIL	4285 MIDDLE COUNTRY RD, CALVERTON, NY	10/11/21 12:55	10/11/21
L2155380-07	SB007_5-7	SOIL	4285 MIDDLE COUNTRY RD, CALVERTON, NY	10/11/21 13:20	10/11/21
L2155380-08	SB008_6-8	SOIL	4285 MIDDLE COUNTRY RD, CALVERTON, NY	10/11/21 13:45	10/11/21
L2155380-09	SB009_2-4	SOIL	4285 MIDDLE COUNTRY RD, CALVERTON, NY	10/11/21 14:05	10/11/21
L2155380-10	SB010_6-8	SOIL	4285 MIDDLE COUNTRY RD, CALVERTON, NY	10/11/21 14:25	10/11/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Semivolatile Organics

The WG1557691-2 LCS recovery, associated with L2155380-01 through -10, is below the acceptance criteria for benzoic acid (5%); however, it has been identified as a "difficult" analyte. The results of the associated samples are reported.

Pesticides

L2155380-10D: The sample has elevated detection limits due to the dilution required by the sample matrix.

L2155380-10D: The internal standard (IS) response for 1-bromo-2-nitrobenzene (2144%) was above the acceptance criteria on column A; however, the sample was not re-analyzed due to obvious interferences. The surrogate recoveries are outside the method acceptance criteria for decachlorobiphenyl (0%) due to interference with the Internal Standard.

Total Metals

L2155380-01 through -10: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by matrix interferences encountered during analysis.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Caitlin Walukevich Report Date: 10/25/21

Title: Technical Director/Representative

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Report Format: DU Report with 'J' Qualifiers

Data Qualifiers

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Volatile Organics Instruments

Volatile Organics:

Instrument: Agilent 7890 GC/5975C MSD	Columns (length x ID x df):
Trap: Supelco K Trap (VOACARB 3000)	RTX-VMS 20m x 0.18mm x 1um
Concentrator: EST Encon (or equivalent)	RTX-VMS 30m x 0.25mm x 1.4um
Autosampler: EST Centurion (or equivalent)	RTX-502.2 40m x 0.18mm x 1um
Purge time: 11 min	

Volatile Organics: VPH

Instrument: Agilent 6890 (or equivalent)	Column Type: Restek RTX 502.2
Trap: Supelco K Trap (VOACARB 3000)	Column Length: 105 Meters
Concentrator: EST Encon (or equivalent)	df: 3.00 um
Autosampler: EST Centurion (or equivalent)	ID: 0.53mm

Volatile Organics: PIANO

Instrument: Agilent 7890 GC/5975C MSD	Column Type: DB-VRX
Trap: Supelco K Trap (VOACARB 3000)	Column Length: 60 Meters
Concentrator: Tekmar Velocity / EST Encon	df: 1.40 um
Autosampler: Varian Archon / EST Centurion	ID: 0.25 mm
Purge time: 11 min	Desorb: 1 min

Volatile Organics: Dissolved Gas

Instrument: Agilent 7890 (or equivalent) with FID/TCD

	Column Type: Haysep S Column
	Column Length: 2 Meters packed (100/200 mesh)
Autosampler: LEAP Headspace	Purge time: 0.6 min

Volatile Organics in Air Instruments

Volatile Organics in Air:

Instruments: Agilent 6890 GC / 5975 MSD Shimadzu QP2010-SE / QP2020

Concentrator: Entech 7100A or 7200	Column Type: Restek RTX-1
Autosampler: Entech 7016CA or 7016D	Column Length: 60 Meters
	df: 1.00 um
	ID: 0.25 mm or 0.32 mm

Trap 1: Glass Bead: manufacturer-Entech: 20 cm packing material
Trap 2: Tenax: manufacturer-Entech: 20 cm packing material

Semivolatile Organics Instruments - Westborough

Semivolatile Organics (Acid/Base/Neutral Extractables):

Instrument: Agilent 5973N MSD	Injection volume: 1 ul;2 uL LVI
Column Type: Restek RXI-5SILMS	df: 0.32 um
Column Length: 30 Meters	ID: 0.25 mm

Polynuclear Aromatic Hydrocarbons by 8270 SIM:

Instrument: Agilent 5973 MSD	Injection volume: 1 ul;2 uL LVI
Column Type: Restek RXI-5SILMS	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Pesticides/PCB/Herbicides:

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column A: Restek RTX-CL/STX-CL	df: 0.32
Column B: Restek RTX/STX-CLPPesticide II	df: 0.25
Column Length: 30 Meters	ID: 0.32 mm

Petroleum/EPH:

Instrument: Agilent 6890 w/FID / HP 5890 w/ FID	Injection Volume: 1uL
Column: Restek RTX 5	df: 0.25
Column Length: 30 Meters	
ID: 0.32 mm	

Semivolatile Organic Instruments - Mansfield

Semivolatile Organics (ALK-PAH Extractables):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 1 ul
Column Type: ZB-5	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Semivolatile Organics (8270):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 2 ul
Column Type: ZB-Semivolatiles	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Semivolatile Organics (8270 SIM):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 3 ul
Column Type: ZB-5	df: 0.25 um
Column Length: 30 Meters	ID: 0.25 mm

Semivolatile Organics (1,4-Dioxane):

Instrument: Agilent 5973N / 5975 / 5977 MSD	Injection volume: 3 ul
Column Type: RTX-5	df: 0.25um, 0.18 um
Column Length: 30 Meters	ID: 0.25um, 0.18 mm

Semivolatile Organics (209 Congener):

Instrument: Agilent 5973N / 5975 MSD	Injection volume: 3 ul
Column Type: RTX-5, RTX-PCB	df: 0.25um, 0.18 um
Column Length: 60 Meters	ID: 0.25um, 0.18 mm

Semivolatile Organics (8081):

Instrument: Agilent 6890 / 7890	Injection volume: 1 ul
Column Type: RTX-5 / RTX-CLP II	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Semivolatile Organics (8082):

Instrument: Agilent 6890 w/Dual Micro ECDs	Injection Volume: 1uL
Column A: Restek RTX-CL/STX-CL	df: 0.32
Column B: Restek RTX/STX-CLPPesticide II	df: 0.25
Column Length: 30 Meters	ID: 0.32 mm

Semivolatile Organics (SHC Extractables):

Instrument: Agilent 6890	Injection volume: 1 ul
Column Type: RTX-5	df: 0.25 um
Column Length: 60 Meters	ID: 0.25 mm

Sample Delivery Group Summary

Alpha Job Number : L2155380

Account Name : P. W. Grosser
Project Number : HKV2101
Project Name : HK VENTURES-CALVERTON

Received : 11-OCT-2021
Reviewer : Kylie Morse

Delivery Information

Samples Delivered By : Alpha Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	3.1	

Condition Information

1) All samples on COC received?	**YES**
2) Extra samples received?	**NO**
3) Are there any sample container discrepancies?	**NO**
4) Are there any discrepancies between sample labels & COC?	**NO**
5) Are samples in appropriate containers for requested analysis?	**YES**
6) Are samples properly preserved for requested analysis?	**YES**
7) Are samples within holding time for requested analysis?	**YES**
8) All sampling equipment returned?	**NA**

Volatile Organics/VPH

1) Reagent Water Vials Frozen by Client?	**NO**

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Oct 25 2021, 04:54 pm

Login Number: L2155380
Account: PWGROSSER P. W. GrosserProject: HKV2101
Received: 11OCT21 Due Date: 25OCT21

Sample #	Client ID	Mat	PR	Collected
L2155380-01	SB001_0-2	3	S0	11OCT21 11:10
| ASP-A Package Due Date: 10/25/21				
ASP-A,HERB-APA,NYTCL-8081,NYTCL-8082,NYTCL-8260HLW,NYTCL-8270,TAL,AG-TI,AL-TI,AS-TI,BA-TI,BE-TI,CA-TI,CD-TI,CO-TI,CR-TI,CU-TI,FE-TI,HG-T,K-TI,MG-TI,MN-TI,NA-TI,NI-TI,PB-TI,PREPT,SB-TI,SE-TI,TL-TI,V-TI,ZN-TI,TS				
L2155380-02	SB002_3-5	3	S0	11OCT21 11:30
| Package Due Date: 10/25/21				
HERB-APA,NYTCL-8081,NYTCL-8082,NYTCL-8260HLW,NYTCL-8270,TAL,AG-TI,AL-TI,AS-TI,BA-TI,BE-TI,CA-TI,CD-TI,CO-TI,CR-TI,CU-TI,FE-TI,HG-T,K-TI,MG-TI,MN-TI,NA-TI,NI-TI,PB-TI,PREPT,SB-TI,SE-TI,TL-TI,V-TI,ZN-TI,TS				
L2155380-03	SB003_2-4	3	S0	11OCT21 11:50
| Package Due Date: 10/25/21				
HERB-APA,NYTCL-8081,NYTCL-8082,NYTCL-8260HLW,NYTCL-8270,TAL,AG-TI,AL-TI,AS-TI,BA-TI,BE-TI,CA-TI,CD-TI,CO-TI,CR-TI,CU-TI,FE-TI,HG-T,K-TI,MG-TI,MN-TI,NA-TI,NI-TI,PB-TI,PREPT,SB-TI,SE-TI,TL-TI,V-TI,ZN-TI,TS				
L2155380-04	SB004_4-6	3	S0	11OCT21 12:15
| Package Due Date: 10/25/21				
HERB-APA,NYTCL-8081,NYTCL-8082,NYTCL-8260HLW,NYTCL-8270,TAL,AG-TI,AL-TI,AS-TI,BA-TI,BE-TI,CA-TI,CD-TI,CO-TI,CR-TI,CU-TI,FE-TI,HG-T,K-TI,MG-TI,MN-TI,NA-TI,NI-TI,PB-TI,PREPT,SB-TI,SE-TI,TL-TI,V-TI,ZN-TI,TS				
L2155380-05	SB005_1-3	3	S0	11OCT21 12:35
| Package Due Date: 10/25/21				

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Oct 25 2021, 04:54 pm

Login Number: L2155380
Account: PWGROSSER P. W. GrosserProject: HKV2101
Received: 11OCT21 Due Date: 25OCT21

Sample #	Client ID	Mat	PR	Collected

HERB-APA,NYTCL-8081,NYTCL-8082,NYTCL-8260HLW,NYTCL-8270,TAL,AG-TI,AL-TI,AS-TI,BA-TI,BE-TI,CA-TI,CD-TI,CO-TI,CR-TI,CU-TI,FE-TI,HG-T,K-TI,MG-TI,MN-TI,NA-TI,NI-TI,PB-TI,PREPT,SB-TI,SE-TI,TL-TI,V-TI,ZN-TI,TS

L2155380-06 SB006_2-4 3 S0 11OCT21 12:55
| Package Due Date: 10/25/21

HERB-APA,NYTCL-8081,NYTCL-8082,NYTCL-8260HLW,NYTCL-8270,TAL,AG-TI,AL-TI,AS-TI,BA-TI,BE-TI,CA-TI,CD-TI,CO-TI,CR-TI,CU-TI,FE-TI,HG-T,K-TI,MG-TI,MN-TI,NA-TI,NI-TI,PB-TI,PREPT,SB-TI,SE-TI,TL-TI,V-TI,ZN-TI,TS

L2155380-07 SB007_5-7 3 S0 11OCT21 13:20
| Package Due Date: 10/25/21

HERB-APA,NYTCL-8081,NYTCL-8082,NYTCL-8260HLW,NYTCL-8270,TAL,AG-TI,AL-TI,AS-TI,BA-TI,BE-TI,CA-TI,CD-TI,CO-TI,CR-TI,CU-TI,FE-TI,HG-T,K-TI,MG-TI,MN-TI,NA-TI,NI-TI,PB-TI,PREPT,SB-TI,SE-TI,TL-TI,V-TI,ZN-TI,TS

L2155380-08 SB008_6-8 3 S0 11OCT21 13:45
| Package Due Date: 10/25/21

HERB-APA,NYTCL-8081,NYTCL-8082,NYTCL-8260HLW,NYTCL-8270,TAL,AG-TI,AL-TI,AS-TI,BA-TI,BE-TI,CA-TI,CD-TI,CO-TI,CR-TI,CU-TI,FE-TI,HG-T,K-TI,MG-TI,MN-TI,NA-TI,NI-TI,PB-TI,PREPT,SB-TI,SE-TI,TL-TI,V-TI,ZN-TI,TS

L2155380-09 SB009_2-4 3 S0 11OCT21 14:05
| Package Due Date: 10/25/21

HERB-APA,NYTCL-8081,NYTCL-8082,NYTCL-8260HLW,NYTCL-8270,TAL,AG-TI,AL-TI,AS-TI,BA-TI,BE-TI,CA-TI,CD-TI,CO-TI,CR-TI,CU-TI,FE-TI,HG-T,K-TI,MG-TI,MN-TI,NA-TI,NI-TI,PB-TI,PREPT,SB-TI,SE-TI,TL-TI,V-TI,ZN-TI,TS

ALPHA ANALYTICAL LABORATORIES, INC.
LOGIN CHAIN OF CUSTODY REPORT
Oct 25 2021, 04:54 pm

Login Number: L2155380
Account: PWGROSSER P. W. GrosserProject: HKV2101
Received: 11OCT21 Due Date: 25OCT21

Sample #	Client ID	Mat	PR	Collected
L2155380-10	SB010_6-8	S0	3	11OCT21 14:25

| Package Due Date: 10/25/21

HERB-APA,NYTCL-8081,NYTCL-8082,NYTCL-8260HLW,NYTCL-8270,TAL,AG-TI,AL-TI,AS-TI,BA-TI,BE-TI,CA-TI,CD-TI,CO-TI,CR-TI,CU-TI,FE-TI,HG-T,K-TI,MG-TI,MN-TI,NA-TI,NI-TI,PB-TI,PREPT,SB-TI,SE-TI,TL-TI,V-TI,ZN-TI,TS

Logged By: Kylie Morse

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 10/12/21

ALPHA Job #: L2155380

Client Information
Client: PWGC
Address: 630 Johnson Ave Bohemia, NY 11716
Phone: 631-589-6553
Fax:
Email: thomasm@pwgrosser.com

Project Information
Project Name: HK Ventures - Calverton
Project Location: 4255 Middle Country Rd, Calverton, NY
Project #: HKV2101
(Use Project name as Project #) ☐
Project Manager: Tom Melia
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☒ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☐ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	PCBs (8082)	Herbicides (8151)	Pesticides (8081)	TAL metals (6010/7471)			Total Bottle
L2155380 -01	SB001_0-2	10/11/21	1110	S	MPP	X	X	X	X	X	X			
-02	SB002_3-5		1130			X	X	X	X	X	X			
-03	SB003_2-4		1150			X	X	X	X	X	X			
-04	SB004_4-6		1215			X	X	X	X	X	X			
-05	SB005_1-3		1235			X	X	X	X	X	X			
-06	SB006_2-4		1255			X	X	X	X	X	X			
-07	SB007_5-7		1320			X	X	X	X	X	X			
-08	SB008_6-8		1345			X	X	X	X	X	X			
-09	SB009_2-4		1405			X	X	X	X	X	X			
-10	SB010_6-8	↓	1425	↓	↓	X	X	X	X	X	X			
					Container Type									
					Preservative									

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Michael Pecoraro	10/11/21 16:55		10/11/21 16:55
	10/11/21 19:10		10/11/21 20:18
	10/12/21 0230		10/12/21 0230

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

Organics

Volatiles Data

Volatiles Sample Data

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-01	**Date Collected**	: 10/11/21 11:10
Client ID	: SB001_0-2	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 14:17
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B11	**Instrument ID**	: VOA110
Sample Amount	: 5.6 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 94
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	4.7	2.2	U
75-34-3	1,1-Dichloroethane	ND	0.94	0.14	U
67-66-3	Chloroform	ND	1.4	0.13	U
56-23-5	Carbon tetrachloride	ND	0.94	0.22	U
78-87-5	1,2-Dichloropropane	ND	0.94	0.12	U
124-48-1	Dibromochloromethane	ND	0.94	0.13	U
79-00-5	1,1,2-Trichloroethane	ND	0.94	0.25	U
127-18-4	Tetrachloroethene	ND	0.47	0.18	U
108-90-7	Chlorobenzene	ND	0.47	0.12	U
75-69-4	Trichlorofluoromethane	ND	3.8	0.66	U
107-06-2	1,2-Dichloroethane	ND	0.94	0.24	U
71-55-6	1,1,1-Trichloroethane	ND	0.47	0.16	U
75-27-4	Bromodichloromethane	ND	0.47	0.10	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.94	0.26	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.47	0.15	U
542-75-6	1,3-Dichloropropene, Total	ND	0.47	0.15	U
563-58-6	1,1-Dichloropropene	ND	0.47	0.15	U
75-25-2	Bromoform	ND	3.8	0.23	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.47	0.16	U
71-43-2	Benzene	ND	0.47	0.16	U
108-88-3	Toluene	ND	0.94	0.51	U
100-41-4	Ethylbenzene	ND	0.94	0.13	U
74-87-3	Chloromethane	ND	3.8	0.88	U
74-83-9	Bromomethane	ND	1.9	0.55	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-01	**Date Collected**	: 10/11/21 11:10
Client ID	: SB001_0-2	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 14:17
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B11	**Instrument ID**	: VOA110
Sample Amount	: 5.6 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 94
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-01-4	Vinyl chloride	ND	0.94	0.32	U
75-00-3	Chloroethane	ND	1.9	0.43	U
75-35-4	1,1-Dichloroethene	ND	0.94	0.22	U
156-60-5	trans-1,2-Dichloroethene	ND	1.4	0.13	U
79-01-6	Trichloroethene	ND	0.47	0.13	U
95-50-1	1,2-Dichlorobenzene	ND	1.9	0.14	U
541-73-1	1,3-Dichlorobenzene	ND	1.9	0.14	U
106-46-7	1,4-Dichlorobenzene	ND	1.9	0.16	U
1634-04-4	Methyl tert butyl ether	ND	1.9	0.19	U
179601-23-1	p/m-Xylene	ND	1.9	0.53	U
95-47-6	o-Xylene	ND	0.94	0.27	U
1330-20-7	Xylenes, Total	ND	0.94	0.27	U
156-59-2	cis-1,2-Dichloroethene	ND	0.94	0.16	U
540-59-0	1,2-Dichloroethene, Total	ND	0.94	0.13	U
74-95-3	Dibromomethane	ND	1.9	0.22	U
100-42-5	Styrene	ND	0.94	0.18	U
75-71-8	Dichlorodifluoromethane	ND	9.4	0.86	U
67-64-1	Acetone	ND	9.4	4.5	U
75-15-0	Carbon disulfide	ND	9.4	4.3	U
78-93-3	2-Butanone	ND	9.4	2.1	U
108-05-4	Vinyl acetate	ND	9.4	2.0	U
108-10-1	4-Methyl-2-pentanone	ND	9.4	1.2	U
96-18-4	1,2,3-Trichloropropane	ND	1.9	0.12	U
591-78-6	2-Hexanone	ND	9.4	1.1	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-01	**Date Collected**	: 10/11/21 11:10
Client ID	: SB001_0-2	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 14:17
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B11	**Instrument ID**	: VOA110
Sample Amount	: 5.6 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 94
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
74-97-5	Bromochloromethane	ND	1.9	0.19	U
594-20-7	2,2-Dichloropropane	ND	1.9	0.19	U
106-93-4	1,2-Dibromoethane	ND	0.94	0.26	U
142-28-9	1,3-Dichloropropane	ND	1.9	0.16	U
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.47	0.12	U
108-86-1	Bromobenzene	ND	1.9	0.14	U
104-51-8	n-Butylbenzene	ND	0.94	0.16	U
135-98-8	sec-Butylbenzene	ND	0.94	0.14	U
98-06-6	tert-Butylbenzene	ND	1.9	0.11	U
95-49-8	o-Chlorotoluene	ND	1.9	0.18	U
106-43-4	p-Chlorotoluene	ND	1.9	0.10	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.8	0.94	U
87-68-3	Hexachlorobutadiene	ND	3.8	0.16	U
98-82-8	Isopropylbenzene	ND	0.94	0.10	U
99-87-6	p-Isopropyltoluene	ND	0.94	0.10	U
91-20-3	Naphthalene	ND	3.8	0.61	U
107-13-1	Acrylonitrile	ND	3.8	1.1	U
103-65-1	n-Propylbenzene	ND	0.94	0.16	U
87-61-6	1,2,3-Trichlorobenzene	ND	1.9	0.30	U
120-82-1	1,2,4-Trichlorobenzene	ND	1.9	0.26	U
108-67-8	1,3,5-Trimethylbenzene	ND	1.9	0.18	U
95-63-6	1,2,4-Trimethylbenzene	ND	1.9	0.31	U
123-91-1	1,4-Dioxane	ND	75	33.	U
105-05-5	p-Diethylbenzene	ND	1.9	0.17	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-01	**Date Collected**	: 10/11/21 11:10
Client ID	: SB001_0-2	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 14:17
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B11	**Instrument ID**	: VOA110
Sample Amount	: 5.6 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 94
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
622-96-8	p-Ethyltoluene	ND	1.9	0.36	U
95-93-2	1,2,4,5-Tetramethylbenzene	ND	1.9	0.18	U
60-29-7	Ethyl ether	ND	1.9	0.32	U
110-57-6	trans-1,4-Dichloro-2-butene	ND	4.7	1.3	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-02	**Date Collected**	: 10/11/21 11:30
Client ID	: SB002_3-5	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 14:44
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B12	**Instrument ID**	: VOA110
Sample Amount	: 4.7 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 98
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	5.4	2.5	U
75-34-3	1,1-Dichloroethane	ND	1.1	0.16	U
67-66-3	Chloroform	ND	1.6	0.15	U
56-23-5	Carbon tetrachloride	ND	1.1	0.25	U
78-87-5	1,2-Dichloropropane	ND	1.1	0.14	U
124-48-1	Dibromochloromethane	ND	1.1	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.1	0.29	U
127-18-4	Tetrachloroethene	ND	0.54	0.21	U
108-90-7	Chlorobenzene	ND	0.54	0.14	U
75-69-4	Trichlorofluoromethane	ND	4.3	0.75	U
107-06-2	1,2-Dichloroethane	ND	1.1	0.28	U
71-55-6	1,1,1-Trichloroethane	ND	0.54	0.18	U
75-27-4	Bromodichloromethane	ND	0.54	0.12	U
10061-02-6	trans-1,3-Dichloropropene	ND	1.1	0.30	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.54	0.17	U
542-75-6	1,3-Dichloropropene, Total	ND	0.54	0.17	U
563-58-6	1,1-Dichloropropene	ND	0.54	0.17	U
75-25-2	Bromoform	ND	4.3	0.26	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.54	0.18	U
71-43-2	Benzene	ND	0.54	0.18	U
108-88-3	Toluene	ND	1.1	0.59	U
100-41-4	Ethylbenzene	ND	1.1	0.15	U
74-87-3	Chloromethane	ND	4.3	1.0	U
74-83-9	Bromomethane	ND	2.2	0.63	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-02	**Date Collected**	: 10/11/21 11:30
Client ID	: SB002_3-5	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 14:44
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B12	**Instrument ID**	: VOA110
Sample Amount	: 4.7 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 98
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-01-4	Vinyl chloride	ND	1.1	0.36	U
75-00-3	Chloroethane	ND	2.2	0.49	U
75-35-4	1,1-Dichloroethene	ND	1.1	0.26	U
156-60-5	trans-1,2-Dichloroethene	ND	1.6	0.15	U
79-01-6	Trichloroethene	ND	0.54	0.15	U
95-50-1	1,2-Dichlorobenzene	ND	2.2	0.16	U
541-73-1	1,3-Dichlorobenzene	ND	2.2	0.16	U
106-46-7	1,4-Dichlorobenzene	ND	2.2	0.18	U
1634-04-4	Methyl tert butyl ether	ND	2.2	0.22	U
179601-23-1	p/m-Xylene	ND	2.2	0.60	U
95-47-6	o-Xylene	ND	1.1	0.31	U
1330-20-7	Xylenes, Total	ND	1.1	0.31	U
156-59-2	cis-1,2-Dichloroethene	ND	1.1	0.19	U
540-59-0	1,2-Dichloroethene, Total	ND	1.1	0.15	U
74-95-3	Dibromomethane	ND	2.2	0.26	U
100-42-5	Styrene	ND	1.1	0.21	U
75-71-8	Dichlorodifluoromethane	ND	11	0.99	U
67-64-1	Acetone	ND	11	5.2	U
75-15-0	Carbon disulfide	ND	11	4.9	U
78-93-3	2-Butanone	ND	11	2.4	U
108-05-4	Vinyl acetate	ND	11	2.3	U
108-10-1	4-Methyl-2-pentanone	ND	11	1.4	U
96-18-4	1,2,3-Trichloropropane	ND	2.2	0.14	U
591-78-6	2-Hexanone	ND	11	1.3	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-02	**Date Collected**	: 10/11/21 11:30
Client ID	: SB002_3-5	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 14:44
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B12	**Instrument ID**	: VOA110
Sample Amount	: 4.7 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 98
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
74-97-5	Bromochloromethane	ND	2.2	0.22	U
594-20-7	2,2-Dichloropropane	ND	2.2	0.22	U
106-93-4	1,2-Dibromoethane	ND	1.1	0.30	U
142-28-9	1,3-Dichloropropane	ND	2.2	0.18	U
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.54	0.14	U
108-86-1	Bromobenzene	ND	2.2	0.16	U
104-51-8	n-Butylbenzene	ND	1.1	0.18	U
135-98-8	sec-Butylbenzene	ND	1.1	0.16	U
98-06-6	tert-Butylbenzene	ND	2.2	0.13	U
95-49-8	o-Chlorotoluene	ND	2.2	0.21	U
106-43-4	p-Chlorotoluene	ND	2.2	0.12	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.2	1.1	U
87-68-3	Hexachlorobutadiene	ND	4.3	0.18	U
98-82-8	Isopropylbenzene	ND	1.1	0.12	U
99-87-6	p-Isopropyltoluene	ND	1.1	0.12	U
91-20-3	Naphthalene	ND	4.3	0.70	U
107-13-1	Acrylonitrile	ND	4.3	1.2	U
103-65-1	n-Propylbenzene	ND	1.1	0.18	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.2	0.35	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.2	0.29	U
108-67-8	1,3,5-Trimethylbenzene	ND	2.2	0.21	U
95-63-6	1,2,4-Trimethylbenzene	ND	2.2	0.36	U
123-91-1	1,4-Dioxane	ND	86	38.	U
105-05-5	p-Diethylbenzene	ND	2.2	0.19	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-02	**Date Collected**	: 10/11/21 11:30
Client ID	: SB002_3-5	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 14:44
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B12	**Instrument ID**	: VOA110
Sample Amount	: 4.7 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 98
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
622-96-8	p-Ethyltoluene	ND	2.2	0.42	U
95-93-2	1,2,4,5-Tetramethylbenzene	ND	2.2	0.21	U
60-29-7	Ethyl ether	ND	2.2	0.37	U
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.4	1.5	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-03	**Date Collected**	: 10/11/21 11:50
Client ID	: SB003_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 15:12
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B13	**Instrument ID**	: VOA110
Sample Amount	: 6.2 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 89
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	4.5	2.1	U
75-34-3	1,1-Dichloroethane	ND	0.90	0.13	U
67-66-3	Chloroform	ND	1.4	0.13	U
56-23-5	Carbon tetrachloride	ND	0.90	0.21	U
78-87-5	1,2-Dichloropropane	ND	0.90	0.11	U
124-48-1	Dibromochloromethane	ND	0.90	0.13	U
79-00-5	1,1,2-Trichloroethane	ND	0.90	0.24	U
127-18-4	Tetrachloroethene	ND	0.45	0.18	U
108-90-7	Chlorobenzene	ND	0.45	0.12	U
75-69-4	Trichlorofluoromethane	ND	3.6	0.63	U
107-06-2	1,2-Dichloroethane	ND	0.90	0.23	U
71-55-6	1,1,1-Trichloroethane	ND	0.45	0.15	U
75-27-4	Bromodichloromethane	ND	0.45	0.10	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.90	0.25	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.45	0.14	U
542-75-6	1,3-Dichloropropene, Total	ND	0.45	0.14	U
563-58-6	1,1-Dichloropropene	ND	0.45	0.14	U
75-25-2	Bromoform	ND	3.6	0.22	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.45	0.15	U
71-43-2	Benzene	ND	0.45	0.15	U
108-88-3	Toluene	ND	0.90	0.49	U
100-41-4	Ethylbenzene	ND	0.90	0.13	U
74-87-3	Chloromethane	ND	3.6	0.84	U
74-83-9	Bromomethane	ND	1.8	0.53	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-03	**Date Collected**	: 10/11/21 11:50
Client ID	: SB003_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 15:12
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B13	**Instrument ID**	: VOA110
Sample Amount	: 6.2 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 89
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-01-4	Vinyl chloride	ND	0.90	0.30	U
75-00-3	Chloroethane	ND	1.8	0.41	U
75-35-4	1,1-Dichloroethene	ND	0.90	0.22	U
156-60-5	trans-1,2-Dichloroethene	ND	1.4	0.12	U
79-01-6	Trichloroethene	ND	0.45	0.12	U
95-50-1	1,2-Dichlorobenzene	ND	1.8	0.13	U
541-73-1	1,3-Dichlorobenzene	ND	1.8	0.13	U
106-46-7	1,4-Dichlorobenzene	ND	1.8	0.15	U
1634-04-4	Methyl tert butyl ether	ND	1.8	0.18	U
179601-23-1	p/m-Xylene	ND	1.8	0.51	U
95-47-6	o-Xylene	ND	0.90	0.26	U
1330-20-7	Xylenes, Total	ND	0.90	0.26	U
156-59-2	cis-1,2-Dichloroethene	ND	0.90	0.16	U
540-59-0	1,2-Dichloroethene, Total	ND	0.90	0.12	U
74-95-3	Dibromomethane	ND	1.8	0.22	U
100-42-5	Styrene	ND	0.90	0.18	U
75-71-8	Dichlorodifluoromethane	ND	9.0	0.83	U
67-64-1	Acetone	ND	9.0	4.4	U
75-15-0	Carbon disulfide	ND	9.0	4.1	U
78-93-3	2-Butanone	ND	9.0	2.0	U
108-05-4	Vinyl acetate	ND	9.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	9.0	1.2	U
96-18-4	1,2,3-Trichloropropane	ND	1.8	0.12	U
591-78-6	2-Hexanone	ND	9.0	1.1	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-03	**Date Collected**	: 10/11/21 11:50
Client ID	: SB003_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 15:12
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B13	**Instrument ID**	: VOA110
Sample Amount	: 6.2 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 89
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
74-97-5	Bromochloromethane	ND	1.8	0.18	U
594-20-7	2,2-Dichloropropane	ND	1.8	0.18	U
106-93-4	1,2-Dibromoethane	ND	0.90	0.25	U
142-28-9	1,3-Dichloropropane	ND	1.8	0.15	U
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.45	0.12	U
108-86-1	Bromobenzene	ND	1.8	0.13	U
104-51-8	n-Butylbenzene	ND	0.90	0.15	U
135-98-8	sec-Butylbenzene	ND	0.90	0.13	U
98-06-6	tert-Butylbenzene	ND	1.8	0.11	U
95-49-8	o-Chlorotoluene	ND	1.8	0.17	U
106-43-4	p-Chlorotoluene	ND	1.8	0.10	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.7	0.90	U
87-68-3	Hexachlorobutadiene	ND	3.6	0.15	U
98-82-8	Isopropylbenzene	ND	0.90	0.10	U
99-87-6	p-Isopropyltoluene	ND	0.90	0.10	U
91-20-3	Naphthalene	ND	3.6	0.59	U
107-13-1	Acrylonitrile	ND	3.6	1.0	U
103-65-1	n-Propylbenzene	ND	0.90	0.15	U
87-61-6	1,2,3-Trichlorobenzene	ND	1.8	0.29	U
120-82-1	1,2,4-Trichlorobenzene	ND	1.8	0.25	U
108-67-8	1,3,5-Trimethylbenzene	ND	1.8	0.17	U
95-63-6	1,2,4-Trimethylbenzene	ND	1.8	0.30	U
123-91-1	1,4-Dioxane	ND	72	32.	U
105-05-5	p-Diethylbenzene	ND	1.8	0.16	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-03	**Date Collected**	: 10/11/21 11:50
Client ID	: SB003_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 15:12
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B13	**Instrument ID**	: VOA110
Sample Amount	: 6.2 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 89
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
622-96-8	p-Ethyltoluene	ND	1.8	0.35	U
95-93-2	1,2,4,5-Tetramethylbenzene	ND	1.8	0.17	U
60-29-7	Ethyl ether	ND	1.8	0.31	U
110-57-6	trans-1,4-Dichloro-2-butene	ND	4.5	1.3	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-04	**Date Collected**	: 10/11/21 12:15
Client ID	: SB004_4-6	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 15:40
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B14	**Instrument ID**	: VOA110
Sample Amount	: 5.4 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 96
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	4.8	2.2	U
75-34-3	1,1-Dichloroethane	ND	0.96	0.14	U
67-66-3	Chloroform	ND	1.4	0.13	U
56-23-5	Carbon tetrachloride	ND	0.96	0.22	U
78-87-5	1,2-Dichloropropane	ND	0.96	0.12	U
124-48-1	Dibromochloromethane	ND	0.96	0.13	U
79-00-5	1,1,2-Trichloroethane	ND	0.96	0.26	U
127-18-4	Tetrachloroethene	ND	0.48	0.19	U
108-90-7	Chlorobenzene	ND	0.48	0.12	U
75-69-4	Trichlorofluoromethane	ND	3.8	0.67	U
107-06-2	1,2-Dichloroethane	ND	0.96	0.25	U
71-55-6	1,1,1-Trichloroethane	ND	0.48	0.16	U
75-27-4	Bromodichloromethane	ND	0.48	0.10	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.96	0.26	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.48	0.15	U
542-75-6	1,3-Dichloropropene, Total	ND	0.48	0.15	U
563-58-6	1,1-Dichloropropene	ND	0.48	0.15	U
75-25-2	Bromoform	ND	3.8	0.24	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.48	0.16	U
71-43-2	Benzene	ND	0.48	0.16	U
108-88-3	Toluene	ND	0.96	0.52	U
100-41-4	Ethylbenzene	ND	0.96	0.14	U
74-87-3	Chloromethane	ND	3.8	0.89	U
74-83-9	Bromomethane	ND	1.9	0.56	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-04	**Date Collected**	: 10/11/21 12:15
Client ID	: SB004_4-6	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 15:40
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B14	**Instrument ID**	: VOA110
Sample Amount	: 5.4 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 96
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-01-4	Vinyl chloride	ND	0.96	0.32	U
75-00-3	Chloroethane	ND	1.9	0.43	U
75-35-4	1,1-Dichloroethene	ND	0.96	0.23	U
156-60-5	trans-1,2-Dichloroethene	ND	1.4	0.13	U
79-01-6	Trichloroethene	ND	0.48	0.13	U
95-50-1	1,2-Dichlorobenzene	ND	1.9	0.14	U
541-73-1	1,3-Dichlorobenzene	ND	1.9	0.14	U
106-46-7	1,4-Dichlorobenzene	ND	1.9	0.16	U
1634-04-4	Methyl tert butyl ether	ND	1.9	0.19	U
179601-23-1	p/m-Xylene	ND	1.9	0.54	U
95-47-6	o-Xylene	ND	0.96	0.28	U
1330-20-7	Xylenes, Total	ND	0.96	0.28	U
156-59-2	cis-1,2-Dichloroethene	ND	0.96	0.17	U
540-59-0	1,2-Dichloroethene, Total	ND	0.96	0.13	U
74-95-3	Dibromomethane	ND	1.9	0.23	U
100-42-5	Styrene	ND	0.96	0.19	U
75-71-8	Dichlorodifluoromethane	ND	9.6	0.88	U
67-64-1	Acetone	ND	9.6	4.6	U
75-15-0	Carbon disulfide	ND	9.6	4.4	U
78-93-3	2-Butanone	ND	9.6	2.1	U
108-05-4	Vinyl acetate	ND	9.6	2.1	U
108-10-1	4-Methyl-2-pentanone	ND	9.6	1.2	U
96-18-4	1,2,3-Trichloropropane	ND	1.9	0.12	U
591-78-6	2-Hexanone	ND	9.6	1.1	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-04	**Date Collected**	: 10/11/21 12:15
Client ID	: SB004_4-6	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 15:40
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B14	**Instrument ID**	: VOA110
Sample Amount	: 5.4 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 96
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
74-97-5	Bromochloromethane	ND	1.9	0.20	U
594-20-7	2,2-Dichloropropane	ND	1.9	0.19	U
106-93-4	1,2-Dibromoethane	ND	0.96	0.27	U
142-28-9	1,3-Dichloropropane	ND	1.9	0.16	U
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.48	0.13	U
108-86-1	Bromobenzene	ND	1.9	0.14	U
104-51-8	n-Butylbenzene	ND	0.96	0.16	U
135-98-8	sec-Butylbenzene	ND	0.96	0.14	U
98-06-6	tert-Butylbenzene	ND	1.9	0.11	U
95-49-8	o-Chlorotoluene	ND	1.9	0.18	U
106-43-4	p-Chlorotoluene	ND	1.9	0.10	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.9	0.96	U
87-68-3	Hexachlorobutadiene	ND	3.8	0.16	U
98-82-8	Isopropylbenzene	ND	0.96	0.10	U
99-87-6	p-Isopropyltoluene	ND	0.96	0.10	U
91-20-3	Naphthalene	ND	3.8	0.62	U
107-13-1	Acrylonitrile	ND	3.8	1.1	U
103-65-1	n-Propylbenzene	ND	0.96	0.16	U
87-61-6	1,2,3-Trichlorobenzene	ND	1.9	0.31	U
120-82-1	1,2,4-Trichlorobenzene	ND	1.9	0.26	U
108-67-8	1,3,5-Trimethylbenzene	ND	1.9	0.18	U
95-63-6	1,2,4-Trimethylbenzene	ND	1.9	0.32	U
123-91-1	1,4-Dioxane	ND	77	34.	U
105-05-5	p-Diethylbenzene	ND	1.9	0.17	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-04	**Date Collected**	: 10/11/21 12:15
Client ID	: SB004_4-6	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 15:40
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B14	**Instrument ID**	: VOA110
Sample Amount	: 5.4 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 96
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
622-96-8	p-Ethyltoluene	ND	1.9	0.37	U
95-93-2	1,2,4,5-Tetramethylbenzene	ND	1.9	0.18	U
60-29-7	Ethyl ether	ND	1.9	0.33	U
110-57-6	trans-1,4-Dichloro-2-butene	ND	4.8	1.4	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-05	**Date Collected**	: 10/11/21 12:35
Client ID	: SB005_1-3	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 16:07
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B15	**Instrument ID**	: VOA110
Sample Amount	: 5.1 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 91
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	5.3	2.4	U
75-34-3	1,1-Dichloroethane	ND	1.1	0.15	U
67-66-3	Chloroform	ND	1.6	0.15	U
56-23-5	Carbon tetrachloride	ND	1.1	0.24	U
78-87-5	1,2-Dichloropropane	ND	1.1	0.13	U
124-48-1	Dibromochloromethane	ND	1.1	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.1	0.28	U
127-18-4	Tetrachloroethene	ND	0.53	0.21	U
108-90-7	Chlorobenzene	ND	0.53	0.14	U
75-69-4	Trichlorofluoromethane	ND	4.3	0.74	U
107-06-2	1,2-Dichloroethane	ND	1.1	0.27	U
71-55-6	1,1,1-Trichloroethane	ND	0.53	0.18	U
75-27-4	Bromodichloromethane	ND	0.53	0.12	U
10061-02-6	trans-1,3-Dichloropropene	ND	1.1	0.29	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.53	0.17	U
542-75-6	1,3-Dichloropropene, Total	ND	0.53	0.17	U
563-58-6	1,1-Dichloropropene	ND	0.53	0.17	U
75-25-2	Bromoform	ND	4.3	0.26	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.53	0.18	U
71-43-2	Benzene	ND	0.53	0.18	U
108-88-3	Toluene	ND	1.1	0.58	U
100-41-4	Ethylbenzene	ND	1.1	0.15	U
74-87-3	Chloromethane	ND	4.3	1.0	U
74-83-9	Bromomethane	ND	2.1	0.62	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-05	**Date Collected**	: 10/11/21 12:35
Client ID	: SB005_1-3	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 16:07
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B15	**Instrument ID**	: VOA110
Sample Amount	: 5.1 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 91
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-01-4	Vinyl chloride	ND	1.1	0.36	U
75-00-3	Chloroethane	ND	2.1	0.48	U
75-35-4	1,1-Dichloroethene	ND	1.1	0.25	U
156-60-5	trans-1,2-Dichloroethene	ND	1.6	0.15	U
79-01-6	Trichloroethene	ND	0.53	0.15	U
95-50-1	1,2-Dichlorobenzene	ND	2.1	0.15	U
541-73-1	1,3-Dichlorobenzene	ND	2.1	0.16	U
106-46-7	1,4-Dichlorobenzene	ND	2.1	0.18	U
1634-04-4	Methyl tert butyl ether	ND	2.1	0.21	U
179601-23-1	p/m-Xylene	ND	2.1	0.60	U
95-47-6	o-Xylene	ND	1.1	0.31	U
1330-20-7	Xylenes, Total	ND	1.1	0.31	U
156-59-2	cis-1,2-Dichloroethene	ND	1.1	0.19	U
540-59-0	1,2-Dichloroethene, Total	ND	1.1	0.15	U
74-95-3	Dibromomethane	ND	2.1	0.25	U
100-42-5	Styrene	ND	1.1	0.21	U
75-71-8	Dichlorodifluoromethane	ND	11	0.98	U
67-64-1	Acetone	7.3	11	5.1	J
75-15-0	Carbon disulfide	ND	11	4.9	U
78-93-3	2-Butanone	ND	11	2.4	U
108-05-4	Vinyl acetate	ND	11	2.3	U
108-10-1	4-Methyl-2-pentanone	ND	11	1.4	U
96-18-4	1,2,3-Trichloropropane	ND	2.1	0.14	U
591-78-6	2-Hexanone	ND	11	1.3	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-05	**Date Collected**	: 10/11/21 12:35
Client ID	: SB005_1-3	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 16:07
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B15	**Instrument ID**	: VOA110
Sample Amount	: 5.1 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 91
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
74-97-5	Bromochloromethane	ND	2.1	0.22	U
594-20-7	2,2-Dichloropropane	ND	2.1	0.22	U
106-93-4	1,2-Dibromoethane	ND	1.1	0.30	U
142-28-9	1,3-Dichloropropane	ND	2.1	0.18	U
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.53	0.14	U
108-86-1	Bromobenzene	ND	2.1	0.15	U
104-51-8	n-Butylbenzene	ND	1.1	0.18	U
135-98-8	sec-Butylbenzene	ND	1.1	0.16	U
98-06-6	tert-Butylbenzene	ND	2.1	0.13	U
95-49-8	o-Chlorotoluene	ND	2.1	0.20	U
106-43-4	p-Chlorotoluene	ND	2.1	0.12	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.2	1.1	U
87-68-3	Hexachlorobutadiene	ND	4.3	0.18	U
98-82-8	Isopropylbenzene	ND	1.1	0.12	U
99-87-6	p-Isopropyltoluene	ND	1.1	0.12	U
91-20-3	Naphthalene	ND	4.3	0.69	U
107-13-1	Acrylonitrile	ND	4.3	1.2	U
103-65-1	n-Propylbenzene	ND	1.1	0.18	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.1	0.34	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.1	0.29	U
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.21	U
95-63-6	1,2,4-Trimethylbenzene	ND	2.1	0.36	U
123-91-1	1,4-Dioxane	ND	85	38.	U
105-05-5	p-Diethylbenzene	ND	2.1	0.19	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-05	**Date Collected**	: 10/11/21 12:35
Client ID	: SB005_1-3	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 16:07
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B15	**Instrument ID**	: VOA110
Sample Amount	: 5.1 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 91
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
622-96-8	p-Ethyltoluene	ND	2.1	0.41	U
95-93-2	1,2,4,5-Tetramethylbenzene	ND	2.1	0.20	U
60-29-7	Ethyl ether	ND	2.1	0.36	U
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.3	1.5	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-06	**Date Collected**	: 10/11/21 12:55
Client ID	: SB006_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 16:35
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B16	**Instrument ID**	: VOA110
Sample Amount	: 6.1 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 92
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	4.5	2.0	U
75-34-3	1,1-Dichloroethane	ND	0.90	0.13	U
67-66-3	Chloroform	ND	1.3	0.12	U
56-23-5	Carbon tetrachloride	ND	0.90	0.21	U
78-87-5	1,2-Dichloropropane	ND	0.90	0.11	U
124-48-1	Dibromochloromethane	ND	0.90	0.12	U
79-00-5	1,1,2-Trichloroethane	ND	0.90	0.24	U
127-18-4	Tetrachloroethene	ND	0.45	0.18	U
108-90-7	Chlorobenzene	ND	0.45	0.11	U
75-69-4	Trichlorofluoromethane	ND	3.6	0.62	U
107-06-2	1,2-Dichloroethane	ND	0.90	0.23	U
71-55-6	1,1,1-Trichloroethane	ND	0.45	0.15	U
75-27-4	Bromodichloromethane	ND	0.45	0.10	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.90	0.24	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.45	0.14	U
542-75-6	1,3-Dichloropropene, Total	ND	0.45	0.14	U
563-58-6	1,1-Dichloropropene	ND	0.45	0.14	U
75-25-2	Bromoform	ND	3.6	0.22	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.45	0.15	U
71-43-2	Benzene	ND	0.45	0.15	U
108-88-3	Toluene	ND	0.90	0.49	U
100-41-4	Ethylbenzene	ND	0.90	0.13	U
74-87-3	Chloromethane	ND	3.6	0.84	U
74-83-9	Bromomethane	ND	1.8	0.52	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-06	**Date Collected**	: 10/11/21 12:55
Client ID	: SB006_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 16:35
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B16	**Instrument ID**	: VOA110
Sample Amount	: 6.1 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 92
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-01-4	Vinyl chloride	ND	0.90	0.30	U
75-00-3	Chloroethane	ND	1.8	0.40	U
75-35-4	1,1-Dichloroethene	ND	0.90	0.21	U
156-60-5	trans-1,2-Dichloroethene	ND	1.3	0.12	U
79-01-6	Trichloroethene	ND	0.45	0.12	U
95-50-1	1,2-Dichlorobenzene	ND	1.8	0.13	U
541-73-1	1,3-Dichlorobenzene	ND	1.8	0.13	U
106-46-7	1,4-Dichlorobenzene	ND	1.8	0.15	U
1634-04-4	Methyl tert butyl ether	ND	1.8	0.18	U
179601-23-1	p/m-Xylene	ND	1.8	0.50	U
95-47-6	o-Xylene	ND	0.90	0.26	U
1330-20-7	Xylenes, Total	ND	0.90	0.26	U
156-59-2	cis-1,2-Dichloroethene	ND	0.90	0.16	U
540-59-0	1,2-Dichloroethene, Total	ND	0.90	0.12	U
74-95-3	Dibromomethane	ND	1.8	0.21	U
100-42-5	Styrene	ND	0.90	0.18	U
75-71-8	Dichlorodifluoromethane	ND	9.0	0.82	U
67-64-1	Acetone	ND	9.0	4.3	U
75-15-0	Carbon disulfide	ND	9.0	4.1	U
78-93-3	2-Butanone	ND	9.0	2.0	U
108-05-4	Vinyl acetate	ND	9.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	9.0	1.1	U
96-18-4	1,2,3-Trichloropropane	ND	1.8	0.11	U
591-78-6	2-Hexanone	ND	9.0	1.0	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-06	**Date Collected**	: 10/11/21 12:55
Client ID	: SB006_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 16:35
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B16	**Instrument ID**	: VOA110
Sample Amount	: 6.1 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 92
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
74-97-5	Bromochloromethane	ND	1.8	0.18	U
594-20-7	2,2-Dichloropropane	ND	1.8	0.18	U
106-93-4	1,2-Dibromoethane	ND	0.90	0.25	U
142-28-9	1,3-Dichloropropane	ND	1.8	0.15	U
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.45	0.12	U
108-86-1	Bromobenzene	ND	1.8	0.13	U
104-51-8	n-Butylbenzene	ND	0.90	0.15	U
135-98-8	sec-Butylbenzene	ND	0.90	0.13	U
98-06-6	tert-Butylbenzene	ND	1.8	0.10	U
95-49-8	o-Chlorotoluene	ND	1.8	0.17	U
106-43-4	p-Chlorotoluene	ND	1.8	0.10	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.7	0.90	U
87-68-3	Hexachlorobutadiene	ND	3.6	0.15	U
98-82-8	Isopropylbenzene	ND	0.90	0.10	U
99-87-6	p-Isopropyltoluene	ND	0.90	0.10	U
91-20-3	Naphthalene	ND	3.6	0.58	U
107-13-1	Acrylonitrile	ND	3.6	1.0	U
103-65-1	n-Propylbenzene	ND	0.90	0.15	U
87-61-6	1,2,3-Trichlorobenzene	ND	1.8	0.29	U
120-82-1	1,2,4-Trichlorobenzene	ND	1.8	0.24	U
108-67-8	1,3,5-Trimethylbenzene	ND	1.8	0.17	U
95-63-6	1,2,4-Trimethylbenzene	ND	1.8	0.30	U
123-91-1	1,4-Dioxane	ND	72	31.	U
105-05-5	p-Diethylbenzene	ND	1.8	0.16	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-06	**Date Collected**	: 10/11/21 12:55
Client ID	: SB006_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 16:35
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B16	**Instrument ID**	: VOA110
Sample Amount	: 6.1 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 92
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
622-96-8	p-Ethyltoluene	ND	1.8	0.34	U
95-93-2	1,2,4,5-Tetramethylbenzene	ND	1.8	0.17	U
60-29-7	Ethyl ether	ND	1.8	0.30	U
110-57-6	trans-1,4-Dichloro-2-butene	ND	4.5	1.3	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-07	**Date Collected**	: 10/11/21 13:20
Client ID	: SB007_5-7	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 17:03
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B17	**Instrument ID**	: VOA110
Sample Amount	: 4.8 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 99
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	5.2	2.4	U
75-34-3	1,1-Dichloroethane	ND	1.0	0.15	U
67-66-3	Chloroform	ND	1.6	0.15	U
56-23-5	Carbon tetrachloride	ND	1.0	0.24	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.13	U
124-48-1	Dibromochloromethane	ND	1.0	0.15	U
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.28	U
127-18-4	Tetrachloroethene	ND	0.52	0.20	U
108-90-7	Chlorobenzene	ND	0.52	0.13	U
75-69-4	Trichlorofluoromethane	ND	4.2	0.73	U
107-06-2	1,2-Dichloroethane	ND	1.0	0.27	U
71-55-6	1,1,1-Trichloroethane	ND	0.52	0.17	U
75-27-4	Bromodichloromethane	ND	0.52	0.11	U
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.28	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.52	0.16	U
542-75-6	1,3-Dichloropropene, Total	ND	0.52	0.16	U
563-58-6	1,1-Dichloropropene	ND	0.52	0.17	U
75-25-2	Bromoform	ND	4.2	0.26	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.52	0.17	U
71-43-2	Benzene	ND	0.52	0.17	U
108-88-3	Toluene	ND	1.0	0.57	U
100-41-4	Ethylbenzene	ND	1.0	0.15	U
74-87-3	Chloromethane	ND	4.2	0.97	U
74-83-9	Bromomethane	ND	2.1	0.61	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-07	**Date Collected**	: 10/11/21 13:20
Client ID	: SB007_5-7	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 17:03
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B17	**Instrument ID**	: VOA110
Sample Amount	: 4.8 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 99
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-01-4	Vinyl chloride	ND	1.0	0.35	U
75-00-3	Chloroethane	ND	2.1	0.47	U
75-35-4	1,1-Dichloroethene	ND	1.0	0.25	U
156-60-5	trans-1,2-Dichloroethene	ND	1.6	0.14	U
79-01-6	Trichloroethene	ND	0.52	0.14	U
95-50-1	1,2-Dichlorobenzene	ND	2.1	0.15	U
541-73-1	1,3-Dichlorobenzene	ND	2.1	0.15	U
106-46-7	1,4-Dichlorobenzene	ND	2.1	0.18	U
1634-04-4	Methyl tert butyl ether	ND	2.1	0.21	U
179601-23-1	p/m-Xylene	ND	2.1	0.58	U
95-47-6	o-Xylene	ND	1.0	0.30	U
1330-20-7	Xylenes, Total	ND	1.0	0.30	U
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.18	U
540-59-0	1,2-Dichloroethene, Total	ND	1.0	0.14	U
74-95-3	Dibromomethane	ND	2.1	0.25	U
100-42-5	Styrene	ND	1.0	0.20	U
75-71-8	Dichlorodifluoromethane	ND	10	0.96	U
67-64-1	Acetone	5.1	10	5.0	J
75-15-0	Carbon disulfide	ND	10	4.8	U
78-93-3	2-Butanone	ND	10	2.3	U
108-05-4	Vinyl acetate	ND	10	2.2	U
108-10-1	4-Methyl-2-pentanone	ND	10	1.3	U
96-18-4	1,2,3-Trichloropropane	ND	2.1	0.13	U
591-78-6	2-Hexanone	ND	10	1.2	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-07	**Date Collected**	: 10/11/21 13:20
Client ID	: SB007_5-7	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 17:03
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B17	**Instrument ID**	: VOA110
Sample Amount	: 4.8 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 99
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
74-97-5	Bromochloromethane	ND	2.1	0.21	U
594-20-7	2,2-Dichloropropane	ND	2.1	0.21	U
106-93-4	1,2-Dibromoethane	ND	1.0	0.29	U
142-28-9	1,3-Dichloropropane	ND	2.1	0.17	U
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.52	0.14	U
108-86-1	Bromobenzene	ND	2.1	0.15	U
104-51-8	n-Butylbenzene	ND	1.0	0.17	U
135-98-8	sec-Butylbenzene	ND	1.0	0.15	U
98-06-6	tert-Butylbenzene	ND	2.1	0.12	U
95-49-8	o-Chlorotoluene	ND	2.1	0.20	U
106-43-4	p-Chlorotoluene	ND	2.1	0.11	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.1	1.0	U
87-68-3	Hexachlorobutadiene	ND	4.2	0.18	U
98-82-8	Isopropylbenzene	ND	1.0	0.11	U
99-87-6	p-Isopropyltoluene	ND	1.0	0.11	U
91-20-3	Naphthalene	ND	4.2	0.68	U
107-13-1	Acrylonitrile	ND	4.2	1.2	U
103-65-1	n-Propylbenzene	ND	1.0	0.18	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.1	0.34	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.1	0.28	U
108-67-8	1,3,5-Trimethylbenzene	ND	2.1	0.20	U
95-63-6	1,2,4-Trimethylbenzene	ND	2.1	0.35	U
123-91-1	1,4-Dioxane	ND	84	37.	U
105-05-5	p-Diethylbenzene	ND	2.1	0.18	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-07	**Date Collected**	: 10/11/21 13:20
Client ID	: SB007_5-7	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 17:03
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B17	**Instrument ID**	: VOA110
Sample Amount	: 4.8 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 99
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
622-96-8	p-Ethyltoluene	ND	2.1	0.40	U
95-93-2	1,2,4,5-Tetramethylbenzene	ND	2.1	0.20	U
60-29-7	Ethyl ether	ND	2.1	0.36	U
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.2	1.5	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-08	**Date Collected**	: 10/11/21 13:45
Client ID	: SB008_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 17:30
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B18	**Instrument ID**	: VOA110
Sample Amount	: 6.3 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 84
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	4.8	2.2	U
75-34-3	1,1-Dichloroethane	ND	0.95	0.14	U
67-66-3	Chloroform	ND	1.4	0.13	U
56-23-5	Carbon tetrachloride	ND	0.95	0.22	U
78-87-5	1,2-Dichloropropane	ND	0.95	0.12	U
124-48-1	Dibromochloromethane	ND	0.95	0.13	U
79-00-5	1,1,2-Trichloroethane	ND	0.95	0.25	U
127-18-4	Tetrachloroethene	ND	0.48	0.19	U
108-90-7	Chlorobenzene	ND	0.48	0.12	U
75-69-4	Trichlorofluoromethane	ND	3.8	0.66	U
107-06-2	1,2-Dichloroethane	ND	0.95	0.24	U
71-55-6	1,1,1-Trichloroethane	ND	0.48	0.16	U
75-27-4	Bromodichloromethane	ND	0.48	0.10	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.95	0.26	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.48	0.15	U
542-75-6	1,3-Dichloropropene, Total	ND	0.48	0.15	U
563-58-6	1,1-Dichloropropene	ND	0.48	0.15	U
75-25-2	Bromoform	ND	3.8	0.23	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.48	0.16	U
71-43-2	Benzene	ND	0.48	0.16	U
108-88-3	Toluene	ND	0.95	0.52	U
100-41-4	Ethylbenzene	ND	0.95	0.13	U
74-87-3	Chloromethane	ND	3.8	0.89	U
74-83-9	Bromomethane	ND	1.9	0.55	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-08	**Date Collected**	: 10/11/21 13:45
Client ID	: SB008_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 17:30
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B18	**Instrument ID**	: VOA110
Sample Amount	: 6.3 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 84
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-01-4	Vinyl chloride	ND	0.95	0.32	U
75-00-3	Chloroethane	ND	1.9	0.43	U
75-35-4	1,1-Dichloroethene	ND	0.95	0.23	U
156-60-5	trans-1,2-Dichloroethene	ND	1.4	0.13	U
79-01-6	Trichloroethene	ND	0.48	0.13	U
95-50-1	1,2-Dichlorobenzene	ND	1.9	0.14	U
541-73-1	1,3-Dichlorobenzene	ND	1.9	0.14	U
106-46-7	1,4-Dichlorobenzene	ND	1.9	0.16	U
1634-04-4	Methyl tert butyl ether	ND	1.9	0.19	U
179601-23-1	p/m-Xylene	ND	1.9	0.53	U
95-47-6	o-Xylene	ND	0.95	0.28	U
1330-20-7	Xylenes, Total	ND	0.95	0.28	U
156-59-2	cis-1,2-Dichloroethene	ND	0.95	0.17	U
540-59-0	1,2-Dichloroethene, Total	ND	0.95	0.13	U
74-95-3	Dibromomethane	ND	1.9	0.23	U
100-42-5	Styrene	ND	0.95	0.19	U
75-71-8	Dichlorodifluoromethane	ND	9.5	0.87	U
67-64-1	Acetone	ND	9.5	4.6	U
75-15-0	Carbon disulfide	ND	9.5	4.3	U
78-93-3	2-Butanone	ND	9.5	2.1	U
108-05-4	Vinyl acetate	ND	9.5	2.0	U
108-10-1	4-Methyl-2-pentanone	ND	9.5	1.2	U
96-18-4	1,2,3-Trichloropropane	ND	1.9	0.12	U
591-78-6	2-Hexanone	ND	9.5	1.1	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-08	**Date Collected**	: 10/11/21 13:45
Client ID	: SB008_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 17:30
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B18	**Instrument ID**	: VOA110
Sample Amount	: 6.3 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 84
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
74-97-5	Bromochloromethane	ND	1.9	0.20	U
594-20-7	2,2-Dichloropropane	ND	1.9	0.19	U
106-93-4	1,2-Dibromoethane	ND	0.95	0.27	U
142-28-9	1,3-Dichloropropane	ND	1.9	0.16	U
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.48	0.12	U
108-86-1	Bromobenzene	ND	1.9	0.14	U
104-51-8	n-Butylbenzene	ND	0.95	0.16	U
135-98-8	sec-Butylbenzene	ND	0.95	0.14	U
98-06-6	tert-Butylbenzene	ND	1.9	0.11	U
95-49-8	o-Chlorotoluene	ND	1.9	0.18	U
106-43-4	p-Chlorotoluene	ND	1.9	0.10	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.9	0.95	U
87-68-3	Hexachlorobutadiene	ND	3.8	0.16	U
98-82-8	Isopropylbenzene	ND	0.95	0.10	U
99-87-6	p-Isopropyltoluene	ND	0.95	0.10	U
91-20-3	Naphthalene	ND	3.8	0.62	U
107-13-1	Acrylonitrile	ND	3.8	1.1	U
103-65-1	n-Propylbenzene	ND	0.95	0.16	U
87-61-6	1,2,3-Trichlorobenzene	ND	1.9	0.31	U
120-82-1	1,2,4-Trichlorobenzene	ND	1.9	0.26	U
108-67-8	1,3,5-Trimethylbenzene	ND	1.9	0.18	U
95-63-6	1,2,4-Trimethylbenzene	ND	1.9	0.32	U
123-91-1	1,4-Dioxane	ND	76	33.	U
105-05-5	p-Diethylbenzene	ND	1.9	0.17	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-08	**Date Collected**	: 10/11/21 13:45
Client ID	: SB008_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 17:30
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B18	**Instrument ID**	: VOA110
Sample Amount	: 6.3 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 84
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
622-96-8	p-Ethyltoluene	ND	1.9	0.37	U
95-93-2	1,2,4,5-Tetramethylbenzene	ND	1.9	0.18	U
60-29-7	Ethyl ether	ND	1.9	0.32	U
110-57-6	trans-1,4-Dichloro-2-butene	ND	4.8	1.4	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-09	**Date Collected**	: 10/11/21 14:05
Client ID	: SB009_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 17:58
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B19	**Instrument ID**	: VOA110
Sample Amount	: 6.1 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 91
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	4.5	2.1	U
75-34-3	1,1-Dichloroethane	ND	0.90	0.13	U
67-66-3	Chloroform	ND	1.4	0.13	U
56-23-5	Carbon tetrachloride	ND	0.90	0.21	U
78-87-5	1,2-Dichloropropane	ND	0.90	0.11	U
124-48-1	Dibromochloromethane	ND	0.90	0.13	U
79-00-5	1,1,2-Trichloroethane	ND	0.90	0.24	U
127-18-4	Tetrachloroethene	1.8	0.45	0.18	
108-90-7	Chlorobenzene	ND	0.45	0.11	U
75-69-4	Trichlorofluoromethane	ND	3.6	0.63	U
107-06-2	1,2-Dichloroethane	ND	0.90	0.23	U
71-55-6	1,1,1-Trichloroethane	ND	0.45	0.15	U
75-27-4	Bromodichloromethane	ND	0.45	0.10	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.90	0.25	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.45	0.14	U
542-75-6	1,3-Dichloropropene, Total	ND	0.45	0.14	U
563-58-6	1,1-Dichloropropene	ND	0.45	0.14	U
75-25-2	Bromoform	ND	3.6	0.22	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.45	0.15	U
71-43-2	Benzene	0.16	0.45	0.15	J
108-88-3	Toluene	ND	0.90	0.49	U
100-41-4	Ethylbenzene	ND	0.90	0.13	U
74-87-3	Chloromethane	ND	3.6	0.84	U
74-83-9	Bromomethane	ND	1.8	0.52	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-09	**Date Collected**	: 10/11/21 14:05
Client ID	: SB009_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 17:58
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B19	**Instrument ID**	: VOA110
Sample Amount	: 6.1 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 91
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-01-4	Vinyl chloride	ND	0.90	0.30	U
75-00-3	Chloroethane	ND	1.8	0.41	U
75-35-4	1,1-Dichloroethene	ND	0.90	0.21	U
156-60-5	trans-1,2-Dichloroethene	ND	1.4	0.12	U
79-01-6	Trichloroethene	ND	0.45	0.12	U
95-50-1	1,2-Dichlorobenzene	ND	1.8	0.13	U
541-73-1	1,3-Dichlorobenzene	ND	1.8	0.13	U
106-46-7	1,4-Dichlorobenzene	ND	1.8	0.15	U
1634-04-4	Methyl tert butyl ether	ND	1.8	0.18	U
179601-23-1	p/m-Xylene	ND	1.8	0.50	U
95-47-6	o-Xylene	ND	0.90	0.26	U
1330-20-7	Xylenes, Total	ND	0.90	0.26	U
156-59-2	cis-1,2-Dichloroethene	ND	0.90	0.16	U
540-59-0	1,2-Dichloroethene, Total	ND	0.90	0.12	U
74-95-3	Dibromomethane	ND	1.8	0.21	U
100-42-5	Styrene	ND	0.90	0.18	U
75-71-8	Dichlorodifluoromethane	ND	9.0	0.83	U
67-64-1	Acetone	ND	9.0	4.3	U
75-15-0	Carbon disulfide	ND	9.0	4.1	U
78-93-3	2-Butanone	ND	9.0	2.0	U
108-05-4	Vinyl acetate	ND	9.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	9.0	1.2	U
96-18-4	1,2,3-Trichloropropane	ND	1.8	0.11	U
591-78-6	2-Hexanone	ND	9.0	1.1	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-09	**Date Collected**	: 10/11/21 14:05
Client ID	: SB009_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 17:58
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B19	**Instrument ID**	: VOA110
Sample Amount	: 6.1 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 91
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
74-97-5	Bromochloromethane	ND	1.8	0.18	U
594-20-7	2,2-Dichloropropane	ND	1.8	0.18	U
106-93-4	1,2-Dibromoethane	ND	0.90	0.25	U
142-28-9	1,3-Dichloropropane	ND	1.8	0.15	U
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.45	0.12	U
108-86-1	Bromobenzene	ND	1.8	0.13	U
104-51-8	n-Butylbenzene	ND	0.90	0.15	U
135-98-8	sec-Butylbenzene	ND	0.90	0.13	U
98-06-6	tert-Butylbenzene	ND	1.8	0.11	U
95-49-8	o-Chlorotoluene	ND	1.8	0.17	U
106-43-4	p-Chlorotoluene	ND	1.8	0.10	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.7	0.90	U
87-68-3	Hexachlorobutadiene	ND	3.6	0.15	U
98-82-8	Isopropylbenzene	ND	0.90	0.10	U
99-87-6	p-Isopropyltoluene	ND	0.90	0.10	U
91-20-3	Naphthalene	9.2	3.6	0.59	
107-13-1	Acrylonitrile	ND	3.6	1.0	U
103-65-1	n-Propylbenzene	ND	0.90	0.15	U
87-61-6	1,2,3-Trichlorobenzene	ND	1.8	0.29	U
120-82-1	1,2,4-Trichlorobenzene	ND	1.8	0.24	U
108-67-8	1,3,5-Trimethylbenzene	ND	1.8	0.17	U
95-63-6	1,2,4-Trimethylbenzene	ND	1.8	0.30	U
123-91-1	1,4-Dioxane	ND	72	32.	U
105-05-5	p-Diethylbenzene	ND	1.8	0.16	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-09	**Date Collected**	: 10/11/21 14:05
Client ID	: SB009_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 17:58
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B19	**Instrument ID**	: VOA110
Sample Amount	: 6.1 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 91
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
622-96-8	p-Ethyltoluene	ND	1.8	0.35	U
95-93-2	1,2,4,5-Tetramethylbenzene	ND	1.8	0.17	U
60-29-7	Ethyl ether	ND	1.8	0.31	U
110-57-6	trans-1,4-Dichloro-2-butene	ND	4.5	1.3	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-10	**Date Collected**	: 10/11/21 14:25
Client ID	: SB010_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 18:26
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B20	**Instrument ID**	: VOA110
Sample Amount	: 6.1 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 91
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	4.5	2.1	U
75-34-3	1,1-Dichloroethane	ND	0.90	0.13	U
67-66-3	Chloroform	ND	1.4	0.13	U
56-23-5	Carbon tetrachloride	ND	0.90	0.21	U
78-87-5	1,2-Dichloropropane	ND	0.90	0.11	U
124-48-1	Dibromochloromethane	ND	0.90	0.13	U
79-00-5	1,1,2-Trichloroethane	ND	0.90	0.24	U
127-18-4	Tetrachloroethene	ND	0.45	0.18	U
108-90-7	Chlorobenzene	ND	0.45	0.11	U
75-69-4	Trichlorofluoromethane	ND	3.6	0.63	U
107-06-2	1,2-Dichloroethane	ND	0.90	0.23	U
71-55-6	1,1,1-Trichloroethane	ND	0.45	0.15	U
75-27-4	Bromodichloromethane	ND	0.45	0.10	U
10061-02-6	trans-1,3-Dichloropropene	ND	0.90	0.25	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.45	0.14	U
542-75-6	1,3-Dichloropropene, Total	ND	0.45	0.14	U
563-58-6	1,1-Dichloropropene	ND	0.45	0.14	U
75-25-2	Bromoform	ND	3.6	0.22	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.45	0.15	U
71-43-2	Benzene	0.30	0.45	0.15	J
108-88-3	Toluene	ND	0.90	0.49	U
100-41-4	Ethylbenzene	ND	0.90	0.13	U
74-87-3	Chloromethane	ND	3.6	0.84	U
74-83-9	Bromomethane	ND	1.8	0.52	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-10	**Date Collected**	: 10/11/21 14:25
Client ID	: SB010_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 18:26
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B20	**Instrument ID**	: VOA110
Sample Amount	: 6.1 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 91
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-01-4	Vinyl chloride	ND	0.90	0.30	U
75-00-3	Chloroethane	ND	1.8	0.41	U
75-35-4	1,1-Dichloroethene	ND	0.90	0.22	U
156-60-5	trans-1,2-Dichloroethene	ND	1.4	0.12	U
79-01-6	Trichloroethene	ND	0.45	0.12	U
95-50-1	1,2-Dichlorobenzene	ND	1.8	0.13	U
541-73-1	1,3-Dichlorobenzene	ND	1.8	0.13	U
106-46-7	1,4-Dichlorobenzene	ND	1.8	0.15	U
1634-04-4	Methyl tert butyl ether	ND	1.8	0.18	U
179601-23-1	p/m-Xylene	ND	1.8	0.51	U
95-47-6	o-Xylene	ND	0.90	0.26	U
1330-20-7	Xylenes, Total	ND	0.90	0.26	U
156-59-2	cis-1,2-Dichloroethene	ND	0.90	0.16	U
540-59-0	1,2-Dichloroethene, Total	ND	0.90	0.12	U
74-95-3	Dibromomethane	ND	1.8	0.22	U
100-42-5	Styrene	ND	0.90	0.18	U
75-71-8	Dichlorodifluoromethane	ND	9.0	0.83	U
67-64-1	Acetone	210	9.0	4.4	
75-15-0	Carbon disulfide	ND	9.0	4.1	U
78-93-3	2-Butanone	29	9.0	2.0	
108-05-4	Vinyl acetate	ND	9.0	1.9	U
108-10-1	4-Methyl-2-pentanone	ND	9.0	1.2	U
96-18-4	1,2,3-Trichloropropane	ND	1.8	0.11	U
591-78-6	2-Hexanone	ND	9.0	1.1	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-10	**Date Collected**	: 10/11/21 14:25
Client ID	: SB010_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 18:26
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B20	**Instrument ID**	: VOA110
Sample Amount	: 6.1 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 91
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
74-97-5	Bromochloromethane	ND	1.8	0.18	U
594-20-7	2,2-Dichloropropane	ND	1.8	0.18	U
106-93-4	1,2-Dibromoethane	ND	0.90	0.25	U
142-28-9	1,3-Dichloropropane	ND	1.8	0.15	U
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.45	0.12	U
108-86-1	Bromobenzene	ND	1.8	0.13	U
104-51-8	n-Butylbenzene	ND	0.90	0.15	U
135-98-8	sec-Butylbenzene	ND	0.90	0.13	U
98-06-6	tert-Butylbenzene	ND	1.8	0.11	U
95-49-8	o-Chlorotoluene	ND	1.8	0.17	U
106-43-4	p-Chlorotoluene	ND	1.8	0.10	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	2.7	0.90	U
87-68-3	Hexachlorobutadiene	ND	3.6	0.15	U
98-82-8	Isopropylbenzene	ND	0.90	0.10	U
99-87-6	p-Isopropyltoluene	ND	0.90	0.10	U
91-20-3	Naphthalene	ND	3.6	0.59	U
107-13-1	Acrylonitrile	ND	3.6	1.0	U
103-65-1	n-Propylbenzene	ND	0.90	0.15	U
87-61-6	1,2,3-Trichlorobenzene	ND	1.8	0.29	U
120-82-1	1,2,4-Trichlorobenzene	ND	1.8	0.25	U
108-67-8	1,3,5-Trimethylbenzene	ND	1.8	0.17	U
95-63-6	1,2,4-Trimethylbenzene	ND	1.8	0.30	U
123-91-1	1,4-Dioxane	ND	72	32.	U
105-05-5	p-Diethylbenzene	ND	1.8	0.16	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-10	**Date Collected**	: 10/11/21 14:25
Client ID	: SB010_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 18:26
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: NLK
Lab File ID	: V10211022B20	**Instrument ID**	: VOA110
Sample Amount	: 6.1 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: 91
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
622-96-8	p-Ethyltoluene	ND	1.8	0.35	U
95-93-2	1,2,4,5-Tetramethylbenzene	ND	1.8	0.17	U
60-29-7	Ethyl ether	ND	1.8	0.31	U
110-57-6	trans-1,4-Dichloro-2-butene	ND	4.5	1.3	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: WG1562024-5	**Date Collected**	: NA
Client ID	: WG1562024-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/22/21 11:05
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: AJK
Lab File ID	: V10211022B04	**Instrument ID**	: VOA110
Sample Amount	: 5.0 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: NA
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-09-2	Methylene chloride	ND	5.0	2.3	U
75-34-3	1,1-Dichloroethane	ND	1.0	0.14	U
67-66-3	Chloroform	ND	1.5	0.14	U
56-23-5	Carbon tetrachloride	ND	1.0	0.23	U
78-87-5	1,2-Dichloropropane	ND	1.0	0.12	U
124-48-1	Dibromochloromethane	ND	1.0	0.14	U
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.27	U
127-18-4	Tetrachloroethene	ND	0.50	0.20	U
108-90-7	Chlorobenzene	ND	0.50	0.13	U
75-69-4	Trichlorofluoromethane	ND	4.0	0.70	U
107-06-2	1,2-Dichloroethane	ND	1.0	0.26	U
71-55-6	1,1,1-Trichloroethane	ND	0.50	0.17	U
75-27-4	Bromodichloromethane	ND	0.50	0.11	U
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	0.27	U
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.16	U
542-75-6	1,3-Dichloropropene, Total	ND	0.50	0.16	U
563-58-6	1,1-Dichloropropene	ND	0.50	0.16	U
75-25-2	Bromoform	ND	4.0	0.25	U
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	0.17	U
71-43-2	Benzene	ND	0.50	0.17	U
108-88-3	Toluene	ND	1.0	0.54	U
100-41-4	Ethylbenzene	ND	1.0	0.14	U
74-87-3	Chloromethane	ND	4.0	0.93	U
74-83-9	Bromomethane	ND	2.0	0.58	U
75-01-4	Vinyl chloride	ND	1.0	0.34	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: WG1562024-5	**Date Collected**	: NA
Client ID	: WG1562024-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/22/21 11:05
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: AJK
Lab File ID	: V10211022B04	**Instrument ID**	: VOA110
Sample Amount	: 5.0 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: NA
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
75-00-3	Chloroethane	ND	2.0	0.45	U
75-35-4	1,1-Dichloroethene	ND	1.0	0.24	U
156-60-5	trans-1,2-Dichloroethene	ND	1.5	0.14	U
79-01-6	Trichloroethene	ND	0.50	0.14	U
95-50-1	1,2-Dichlorobenzene	ND	2.0	0.14	U
541-73-1	1,3-Dichlorobenzene	ND	2.0	0.15	U
106-46-7	1,4-Dichlorobenzene	ND	2.0	0.17	U
1634-04-4	Methyl tert butyl ether	ND	2.0	0.20	U
179601-23-1	p/m-Xylene	ND	2.0	0.56	U
95-47-6	o-Xylene	ND	1.0	0.29	U
1330-20-7	Xylenes, Total	ND	1.0	0.29	U
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.18	U
540-59-0	1,2-Dichloroethene, Total	ND	1.0	0.14	U
74-95-3	Dibromomethane	ND	2.0	0.24	U
100-42-5	Styrene	0.78	1.0	0.20	J
75-71-8	Dichlorodifluoromethane	ND	10	0.92	U
67-64-1	Acetone	ND	10	4.8	U
75-15-0	Carbon disulfide	ND	10	4.6	U
78-93-3	2-Butanone	ND	10	2.2	U
108-05-4	Vinyl acetate	ND	10	2.2	U
108-10-1	4-Methyl-2-pentanone	ND	10	1.3	U
96-18-4	1,2,3-Trichloropropane	ND	2.0	0.13	U
591-78-6	2-Hexanone	ND	10	1.2	U
74-97-5	Bromochloromethane	ND	2.0	0.20	U
594-20-7	2,2-Dichloropropane	ND	2.0	0.20	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: WG1562024-5	**Date Collected**	: NA
Client ID	: WG1562024-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/22/21 11:05
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: AJK
Lab File ID	: V10211022B04	**Instrument ID**	: VOA110
Sample Amount	: 5.0 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: NA
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
106-93-4	1,2-Dibromoethane	ND	1.0	0.28	U
142-28-9	1,3-Dichloropropane	ND	2.0	0.17	U
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.50	0.13	U
108-86-1	Bromobenzene	ND	2.0	0.14	U
104-51-8	n-Butylbenzene	ND	1.0	0.17	U
135-98-8	sec-Butylbenzene	ND	1.0	0.15	U
98-06-6	tert-Butylbenzene	ND	2.0	0.12	U
95-49-8	o-Chlorotoluene	ND	2.0	0.19	U
106-43-4	p-Chlorotoluene	ND	2.0	0.11	U
96-12-8	1,2-Dibromo-3-chloropropane	ND	3.0	1.0	U
87-68-3	Hexachlorobutadiene	ND	4.0	0.17	U
98-82-8	Isopropylbenzene	ND	1.0	0.11	U
99-87-6	p-Isopropyltoluene	ND	1.0	0.11	U
91-20-3	Naphthalene	ND	4.0	0.65	U
107-13-1	Acrylonitrile	ND	4.0	1.2	U
103-65-1	n-Propylbenzene	ND	1.0	0.17	U
87-61-6	1,2,3-Trichlorobenzene	ND	2.0	0.32	U
120-82-1	1,2,4-Trichlorobenzene	ND	2.0	0.27	U
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.19	U
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.33	U
123-91-1	1,4-Dioxane	ND	80	35.	U
105-05-5	p-Diethylbenzene	ND	2.0	0.18	U
622-96-8	p-Ethyltoluene	ND	2.0	0.38	U
95-93-2	1,2,4,5-Tetramethylbenzene	ND	2.0	0.19	U
60-29-7	Ethyl ether	ND	2.0	0.34	U

Results Summary
Form 1
Volatile Organics by EPA 5035

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: WG1562024-5	**Date Collected**	: NA
Client ID	: WG1562024-5BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/22/21 11:05
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,8260C	**Analyst**	: AJK
Lab File ID	: V10211022B04	**Instrument ID**	: VOA110
Sample Amount	: 5.0 g	**GC Column**	: RTX-VMS
Level	: LOW	**%Solids**	: NA
Extract Volume (MeOH)	: N/A	**Injection Volume**	: N/A

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
110-57-6	trans-1,4-Dichloro-2-butene	ND	5.0	1.4	U

Semivolatiles Data- Method 8270D

Semivolatile Sample Data

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-01	**Date Collected**	: 10/11/21 11:10
Client ID	: SB001_0-2	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 16:42
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-01	**Analyst**	: JG
Sample Amount	: 30.29 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 94
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
83-32-9	Acenaphthene	ND	140	18.	U
120-82-1	1,2,4-Trichlorobenzene	ND	180	20.	U
118-74-1	Hexachlorobenzene	ND	100	20.	U
111-44-4	Bis(2-chloroethyl)ether	ND	160	24.	U
91-58-7	2-Chloronaphthalene	ND	180	17.	U
95-50-1	1,2-Dichlorobenzene	ND	180	31.	U
541-73-1	1,3-Dichlorobenzene	ND	180	30.	U
106-46-7	1,4-Dichlorobenzene	ND	180	30.	U
91-94-1	3,3'-Dichlorobenzidine	ND	180	47.	U
121-14-2	2,4-Dinitrotoluene	ND	180	35.	U
606-20-2	2,6-Dinitrotoluene	ND	180	30.	U
206-44-0	Fluoranthene	ND	100	20.	U
7005-72-3	4-Chlorophenyl phenyl ether	ND	180	19.	U
101-55-3	4-Bromophenyl phenyl ether	ND	180	27.	U
108-60-1	Bis(2-chloroisopropyl)ether	ND	210	30.	U
111-91-1	Bis(2-chloroethoxy)methane	ND	190	18.	U
87-68-3	Hexachlorobutadiene	ND	180	26.	U
77-47-4	Hexachlorocyclopentadiene	ND	500	160	U
67-72-1	Hexachloroethane	ND	140	28.	U
78-59-1	Isophorone	ND	160	23.	U
91-20-3	Naphthalene	ND	180	21.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-01	Date Collected	: 10/11/21 11:10
Client ID	: SB001_0-2	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/13/21 16:42
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8270D	Dilution Factor	: 1
Lab File ID	: 55380-01	Analyst	: JG
Sample Amount	: 30.29 g	Instrument ID	: SV112
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 94
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
98-95-3	Nitrobenzene	ND	160	26.	U
86-30-6	NDPA/DPA	ND	140	20.	U
621-64-7	n-Nitrosodi-n-propylamine	ND	180	27.	U
117-81-7	Bis(2-ethylhexyl)phthalate	ND	180	61.	U
85-68-7	Butyl benzyl phthalate	ND	180	44.	U
84-74-2	Di-n-butylphthalate	ND	180	33.	U
117-84-0	Di-n-octylphthalate	ND	180	60.	U
84-66-2	Diethyl phthalate	ND	180	16.	U
131-11-3	Dimethyl phthalate	ND	180	37.	U
56-55-3	Benzo(a)anthracene	ND	100	20.	U
50-32-8	Benzo(a)pyrene	ND	140	43.	U
205-99-2	Benzo(b)fluoranthene	ND	100	30.	U
207-08-9	Benzo(k)fluoranthene	ND	100	28.	U
218-01-9	Chrysene	ND	100	18.	U
208-96-8	Acenaphthylene	ND	140	27.	U
120-12-7	Anthracene	ND	100	34.	U
191-24-2	Benzo(ghi)perylene	ND	140	21.	U
86-73-7	Fluorene	ND	180	17.	U
85-01-8	Phenanthrene	ND	100	21.	U
53-70-3	Dibenzo(a,h)anthracene	ND	100	20.	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	140	24.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-01	Date Collected	: 10/11/21 11:10
Client ID	: SB001_0-2	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/13/21 16:42
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8270D	Dilution Factor	: 1
Lab File ID	: 55380-01	Analyst	: JG
Sample Amount	: 30.29 g	Instrument ID	: SV112
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 94
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
129-00-0	Pyrene	ND	100	17.	U
92-52-4	Biphenyl	ND	400	41.	U
106-47-8	4-Chloroaniline	ND	180	32.	U
88-74-4	2-Nitroaniline	ND	180	34.	U
99-09-2	3-Nitroaniline	ND	180	33.	U
100-01-6	4-Nitroaniline	ND	180	72.	U
132-64-9	Dibenzofuran	ND	180	16.	U
91-57-6	2-Methylnaphthalene	ND	210	21.	U
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	180	18.	U
98-86-2	Acetophenone	ND	180	22.	U
88-06-2	2,4,6-Trichlorophenol	ND	100	33.	U
59-50-7	p-Chloro-m-cresol	ND	180	26.	U
95-57-8	2-Chlorophenol	ND	180	21.	U
120-83-2	2,4-Dichlorophenol	ND	160	28.	U
105-67-9	2,4-Dimethylphenol	ND	180	58.	U
88-75-5	2-Nitrophenol	ND	380	66.	U
100-02-7	4-Nitrophenol	ND	240	71.	U
51-28-5	2,4-Dinitrophenol	ND	840	82.	U
534-52-1	4,6-Dinitro-o-cresol	ND	460	84.	U
87-86-5	Pentachlorophenol	ND	140	38.	U
108-95-2	Phenol	ND	180	26.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-01	**Date Collected**	: 10/11/21 11:10
Client ID	: SB001_0-2	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 16:42
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-01	**Analyst**	: JG
Sample Amount	: 30.29 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 94
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
95-48-7	2-Methylphenol	ND	180	27.	U
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	ND	250	27.	U
95-95-4	2,4,5-Trichlorophenol	ND	180	34.	U
65-85-0	Benzoic Acid	ND	570	180	U
100-51-6	Benzyl Alcohol	ND	180	54.	U
86-74-8	Carbazole	ND	180	17.	U
123-91-1	1,4-Dioxane	ND	26	8.1	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-02	**Date Collected**	: 10/11/21 11:30
Client ID	: SB002_3-5	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 17:04
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-02	**Analyst**	: JG
Sample Amount	: 30.84 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 98
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
83-32-9	Acenaphthene	ND	130	17.	U
120-82-1	1,2,4-Trichlorobenzene	ND	160	19.	U
118-74-1	Hexachlorobenzene	ND	99	18.	U
111-44-4	Bis(2-chloroethyl)ether	ND	150	22.	U
91-58-7	2-Chloronaphthalene	ND	160	16.	U
95-50-1	1,2-Dichlorobenzene	ND	160	30.	U
541-73-1	1,3-Dichlorobenzene	ND	160	28.	U
106-46-7	1,4-Dichlorobenzene	ND	160	29.	U
91-94-1	3,3'-Dichlorobenzidine	ND	160	44.	U
121-14-2	2,4-Dinitrotoluene	ND	160	33.	U
606-20-2	2,6-Dinitrotoluene	ND	160	28.	U
206-44-0	Fluoranthene	ND	99	19.	U
7005-72-3	4-Chlorophenyl phenyl ether	ND	160	18.	U
101-55-3	4-Bromophenyl phenyl ether	ND	160	25.	U
108-60-1	Bis(2-chloroisopropyl)ether	ND	200	28.	U
111-91-1	Bis(2-chloroethoxy)methane	ND	180	17.	U
87-68-3	Hexachlorobutadiene	ND	160	24.	U
77-47-4	Hexachlorocyclopentadiene	ND	470	150	U
67-72-1	Hexachloroethane	ND	130	27.	U
78-59-1	Isophorone	ND	150	22.	U
91-20-3	Naphthalene	ND	160	20.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-02	**Date Collected**	: 10/11/21 11:30
Client ID	: SB002_3-5	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 17:04
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-02	**Analyst**	: JG
Sample Amount	: 30.84 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 98
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
98-95-3	Nitrobenzene	ND	150	24.	U
86-30-6	NDPA/DPA	ND	130	19.	U
621-64-7	n-Nitrosodi-n-propylamine	ND	160	26.	U
117-81-7	Bis(2-ethylhexyl)phthalate	ND	160	57.	U
85-68-7	Butyl benzyl phthalate	ND	160	42.	U
84-74-2	Di-n-butylphthalate	ND	160	31.	U
117-84-0	Di-n-octylphthalate	ND	160	56.	U
84-66-2	Diethyl phthalate	ND	160	15.	U
131-11-3	Dimethyl phthalate	ND	160	35.	U
56-55-3	Benzo(a)anthracene	ND	99	19.	U
50-32-8	Benzo(a)pyrene	ND	130	40.	U
205-99-2	Benzo(b)fluoranthene	ND	99	28.	U
207-08-9	Benzo(k)fluoranthene	ND	99	26.	U
218-01-9	Chrysene	ND	99	17.	U
208-96-8	Acenaphthylene	ND	130	26.	U
120-12-7	Anthracene	ND	99	32.	U
191-24-2	Benzo(ghi)perylene	ND	130	19.	U
86-73-7	Fluorene	ND	160	16.	U
85-01-8	Phenanthrene	ND	99	20.	U
53-70-3	Dibenzo(a,h)anthracene	ND	99	19.	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	130	23.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-02	Date Collected	: 10/11/21 11:30
Client ID	: SB002_3-5	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/22/21 17:04
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8270D	Dilution Factor	: 1
Lab File ID	: 55380-02	Analyst	: JG
Sample Amount	: 30.84 g	Instrument ID	: SV112
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 98
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
129-00-0	Pyrene	ND	99	16.	U
92-52-4	Biphenyl	ND	380	38.	U
106-47-8	4-Chloroaniline	ND	160	30.	U
88-74-4	2-Nitroaniline	ND	160	32.	U
99-09-2	3-Nitroaniline	ND	160	31.	U
100-01-6	4-Nitroaniline	ND	160	69.	U
132-64-9	Dibenzofuran	ND	160	16.	U
91-57-6	2-Methylnaphthalene	ND	200	20.	U
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	160	17.	U
98-86-2	Acetophenone	ND	160	20.	U
88-06-2	2,4,6-Trichlorophenol	ND	99	31.	U
59-50-7	p-Chloro-m-cresol	ND	160	25.	U
95-57-8	2-Chlorophenol	ND	160	20.	U
120-83-2	2,4-Dichlorophenol	ND	150	27.	U
105-67-9	2,4-Dimethylphenol	ND	160	55.	U
88-75-5	2-Nitrophenol	ND	360	62.	U
100-02-7	4-Nitrophenol	ND	230	68.	U
51-28-5	2,4-Dinitrophenol	ND	800	77.	U
534-52-1	4,6-Dinitro-o-cresol	ND	430	80.	U
87-86-5	Pentachlorophenol	ND	130	36.	U
108-95-2	Phenol	ND	160	25.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-02	**Date Collected**	: 10/11/21 11:30
Client ID	: SB002_3-5	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 17:04
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-02	**Analyst**	: JG
Sample Amount	: 30.84 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 98
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
95-48-7	2-Methylphenol	ND	160	26.	U
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	ND	240	26.	U
95-95-4	2,4,5-Trichlorophenol	ND	160	32.	U
65-85-0	Benzoic Acid	ND	540	170	U
100-51-6	Benzyl Alcohol	ND	160	51.	U
86-74-8	Carbazole	ND	160	16.	U
123-91-1	1,4-Dioxane	ND	25	7.6	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-03	**Date Collected**	: 10/11/21 11:50
Client ID	: SB003_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/23/21 03:11
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-03	**Analyst**	: IM
Sample Amount	: 30.33 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 89
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
83-32-9	Acenaphthene	ND	150	19.	U
120-82-1	1,2,4-Trichlorobenzene	ND	180	21.	U
118-74-1	Hexachlorobenzene	ND	110	21.	U
111-44-4	Bis(2-chloroethyl)ether	ND	170	25.	U
91-58-7	2-Chloronaphthalene	ND	180	18.	U
95-50-1	1,2-Dichlorobenzene	ND	180	33.	U
541-73-1	1,3-Dichlorobenzene	ND	180	32.	U
106-46-7	1,4-Dichlorobenzene	ND	180	32.	U
91-94-1	3,3'-Dichlorobenzidine	ND	180	49.	U
121-14-2	2,4-Dinitrotoluene	ND	180	37.	U
606-20-2	2,6-Dinitrotoluene	ND	180	32.	U
206-44-0	Fluoranthene	ND	110	21.	U
7005-72-3	4-Chlorophenyl phenyl ether	ND	180	20.	U
101-55-3	4-Bromophenyl phenyl ether	ND	180	28.	U
108-60-1	Bis(2-chloroisopropyl)ether	ND	220	32.	U
111-91-1	Bis(2-chloroethoxy)methane	ND	200	18.	U
87-68-3	Hexachlorobutadiene	ND	180	27.	U
77-47-4	Hexachlorocyclopentadiene	ND	530	170	U
67-72-1	Hexachloroethane	ND	150	30.	U
78-59-1	Isophorone	ND	170	24.	U
91-20-3	Naphthalene	ND	180	22.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-03	Date Collected	: 10/11/21 11:50
Client ID	: SB003_2-4	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/23/21 03:11
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8270D	Dilution Factor	: 1
Lab File ID	: 55380-03	Analyst	: IM
Sample Amount	: 30.33 g	Instrument ID	: SV112
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 89
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
98-95-3	Nitrobenzene	ND	170	27.	U
86-30-6	NDPA/DPA	ND	150	21.	U
621-64-7	n-Nitrosodi-n-propylamine	ND	180	29.	U
117-81-7	Bis(2-ethylhexyl)phthalate	ND	180	64.	U
85-68-7	Butyl benzyl phthalate	ND	180	47.	U
84-74-2	Di-n-butylphthalate	ND	180	35.	U
117-84-0	Di-n-octylphthalate	ND	180	63.	U
84-66-2	Diethyl phthalate	ND	180	17.	U
131-11-3	Dimethyl phthalate	ND	180	39.	U
56-55-3	Benzo(a)anthracene	ND	110	21.	U
50-32-8	Benzo(a)pyrene	ND	150	45.	U
205-99-2	Benzo(b)fluoranthene	ND	110	31.	U
207-08-9	Benzo(k)fluoranthene	ND	110	30.	U
218-01-9	Chrysene	ND	110	19.	U
208-96-8	Acenaphthylene	ND	150	29.	U
120-12-7	Anthracene	ND	110	36.	U
191-24-2	Benzo(ghi)perylene	ND	150	22.	U
86-73-7	Fluorene	ND	180	18.	U
85-01-8	Phenanthrene	ND	110	22.	U
53-70-3	Dibenzo(a,h)anthracene	ND	110	21.	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	150	26.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-03	**Date Collected**	: 10/11/21 11:50
Client ID	: SB003_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/23/21 03:11
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-03	**Analyst**	: IM
Sample Amount	: 30.33 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 89
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
129-00-0	Pyrene	ND	110	18.	U
92-52-4	Biphenyl	ND	420	43.	U
106-47-8	4-Chloroaniline	ND	180	34.	U
88-74-4	2-Nitroaniline	ND	180	36.	U
99-09-2	3-Nitroaniline	ND	180	35.	U
100-01-6	4-Nitroaniline	ND	180	77.	U
132-64-9	Dibenzofuran	ND	180	18.	U
91-57-6	2-Methylnaphthalene	ND	220	22.	U
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	180	19.	U
98-86-2	Acetophenone	ND	180	23.	U
88-06-2	2,4,6-Trichlorophenol	ND	110	35.	U
59-50-7	p-Chloro-m-cresol	ND	180	28.	U
95-57-8	2-Chlorophenol	ND	180	22.	U
120-83-2	2,4-Dichlorophenol	ND	170	30.	U
105-67-9	2,4-Dimethylphenol	ND	180	61.	U
88-75-5	2-Nitrophenol	ND	400	70.	U
100-02-7	4-Nitrophenol	ND	260	76.	U
51-28-5	2,4-Dinitrophenol	ND	890	86.	U
534-52-1	4,6-Dinitro-o-cresol	ND	480	89.	U
87-86-5	Pentachlorophenol	ND	150	41.	U
108-95-2	Phenol	ND	180	28.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-03	**Date Collected**	: 10/11/21 11:50
Client ID	: SB003_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/23/21 03:11
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-03	**Analyst**	: IM
Sample Amount	: 30.33 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 89
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
95-48-7	2-Methylphenol	ND	180	29.	U
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	ND	270	29.	U
95-95-4	2,4,5-Trichlorophenol	ND	180	36.	U
65-85-0	Benzoic Acid	ND	600	190	U
100-51-6	Benzyl Alcohol	ND	180	57.	U
86-74-8	Carbazole	ND	180	18.	U
123-91-1	1,4-Dioxane	ND	28	8.5	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-04	Date Collected	: 10/11/21 12:15
Client ID	: SB004_4-6	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/13/21 17:05
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8270D	Dilution Factor	: 1
Lab File ID	: 55380-04	Analyst	: JG
Sample Amount	: 30.24 g	Instrument ID	: SV112
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 96
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
83-32-9	Acenaphthene	ND	140	18.	U
120-82-1	1,2,4-Trichlorobenzene	ND	170	20.	U
118-74-1	Hexachlorobenzene	ND	100	19.	U
111-44-4	Bis(2-chloroethyl)ether	ND	160	23.	U
91-58-7	2-Chloronaphthalene	ND	170	17.	U
95-50-1	1,2-Dichlorobenzene	ND	170	31.	U
541-73-1	1,3-Dichlorobenzene	ND	170	30.	U
106-46-7	1,4-Dichlorobenzene	ND	170	30.	U
91-94-1	3,3'-Dichlorobenzidine	ND	170	46.	U
121-14-2	2,4-Dinitrotoluene	ND	170	34.	U
606-20-2	2,6-Dinitrotoluene	ND	170	30.	U
206-44-0	Fluoranthene	ND	100	20.	U
7005-72-3	4-Chlorophenyl phenyl ether	ND	170	18.	U
101-55-3	4-Bromophenyl phenyl ether	ND	170	26.	U
108-60-1	Bis(2-chloroisopropyl)ether	ND	210	29.	U
111-91-1	Bis(2-chloroethoxy)methane	ND	190	17.	U
87-68-3	Hexachlorobutadiene	ND	170	25.	U
77-47-4	Hexachlorocyclopentadiene	ND	490	160	U
67-72-1	Hexachloroethane	ND	140	28.	U
78-59-1	Isophorone	ND	160	22.	U
91-20-3	Naphthalene	ND	170	21.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-04	Date Collected	: 10/11/21 12:15
Client ID	: SB004_4-6	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/13/21 17:05
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8270D	Dilution Factor	: 1
Lab File ID	: 55380-04	Analyst	: JG
Sample Amount	: 30.24 g	Instrument ID	: SV112
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 96
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
98-95-3	Nitrobenzene	ND	160	26.	U
86-30-6	NDPA/DPA	ND	140	20.	U
621-64-7	n-Nitrosodi-n-propylamine	ND	170	27.	U
117-81-7	Bis(2-ethylhexyl)phthalate	ND	170	60.	U
85-68-7	Butyl benzyl phthalate	ND	170	43.	U
84-74-2	Di-n-butylphthalate	ND	170	33.	U
117-84-0	Di-n-octylphthalate	ND	170	59.	U
84-66-2	Diethyl phthalate	ND	170	16.	U
131-11-3	Dimethyl phthalate	ND	170	36.	U
56-55-3	Benzo(a)anthracene	ND	100	19.	U
50-32-8	Benzo(a)pyrene	ND	140	42.	U
205-99-2	Benzo(b)fluoranthene	ND	100	29.	U
207-08-9	Benzo(k)fluoranthene	ND	100	28.	U
218-01-9	Chrysene	ND	100	18.	U
208-96-8	Acenaphthylene	ND	140	27.	U
120-12-7	Anthracene	ND	100	34.	U
191-24-2	Benzo(ghi)perylene	ND	140	20.	U
86-73-7	Fluorene	17	170	17.	J
85-01-8	Phenanthrene	ND	100	21.	U
53-70-3	Dibenzo(a,h)anthracene	ND	100	20.	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	140	24.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-04	**Date Collected**	: 10/11/21 12:15
Client ID	: SB004_4-6	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 17:05
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-04	**Analyst**	: JG
Sample Amount	: 30.24 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 96
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
129-00-0	Pyrene	ND	100	17.	U
92-52-4	Biphenyl	ND	390	40.	U
106-47-8	4-Chloroaniline	ND	170	31.	U
88-74-4	2-Nitroaniline	ND	170	33.	U
99-09-2	3-Nitroaniline	ND	170	32.	U
100-01-6	4-Nitroaniline	ND	170	71.	U
132-64-9	Dibenzofuran	ND	170	16.	U
91-57-6	2-Methylnaphthalene	ND	210	21.	U
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	170	18.	U
98-86-2	Acetophenone	ND	170	21.	U
88-06-2	2,4,6-Trichlorophenol	ND	100	33.	U
59-50-7	p-Chloro-m-cresol	ND	170	26.	U
95-57-8	2-Chlorophenol	ND	170	20.	U
120-83-2	2,4-Dichlorophenol	ND	160	28.	U
105-67-9	2,4-Dimethylphenol	ND	170	57.	U
88-75-5	2-Nitrophenol	ND	370	65.	U
100-02-7	4-Nitrophenol	ND	240	70.	U
51-28-5	2,4-Dinitrophenol	ND	830	80.	U
534-52-1	4,6-Dinitro-o-cresol	ND	450	83.	U
87-86-5	Pentachlorophenol	ND	140	38.	U
108-95-2	Phenol	ND	170	26.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-04	**Date Collected**	: 10/11/21 12:15
Client ID	: SB004_4-6	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 17:05
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-04	**Analyst**	: JG
Sample Amount	: 30.24 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 96
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
95-48-7	2-Methylphenol	ND	170	27.	U
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	ND	250	27.	U
95-95-4	2,4,5-Trichlorophenol	ND	170	33.	U
65-85-0	Benzoic Acid	ND	560	170	U
100-51-6	Benzyl Alcohol	ND	170	53.	U
86-74-8	Carbazole	ND	170	17.	U
123-91-1	1,4-Dioxane	ND	26	7.9	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-05	**Date Collected**	: 10/11/21 12:35
Client ID	: SB005_1-3	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 17:27
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-05	**Analyst**	: JG
Sample Amount	: 30.84 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
83-32-9	Acenaphthene	ND	140	18.	U
120-82-1	1,2,4-Trichlorobenzene	ND	180	20.	U
118-74-1	Hexachlorobenzene	ND	110	20.	U
111-44-4	Bis(2-chloroethyl)ether	ND	160	24.	U
91-58-7	2-Chloronaphthalene	ND	180	18.	U
95-50-1	1,2-Dichlorobenzene	ND	180	32.	U
541-73-1	1,3-Dichlorobenzene	ND	180	30.	U
106-46-7	1,4-Dichlorobenzene	ND	180	31.	U
91-94-1	3,3'-Dichlorobenzidine	ND	180	47.	U
121-14-2	2,4-Dinitrotoluene	ND	180	36.	U
606-20-2	2,6-Dinitrotoluene	ND	180	30.	U
206-44-0	Fluoranthene	ND	110	20.	U
7005-72-3	4-Chlorophenyl phenyl ether	ND	180	19.	U
101-55-3	4-Bromophenyl phenyl ether	ND	180	27.	U
108-60-1	Bis(2-chloroisopropyl)ether	ND	210	30.	U
111-91-1	Bis(2-chloroethoxy)methane	ND	190	18.	U
87-68-3	Hexachlorobutadiene	ND	180	26.	U
77-47-4	Hexachlorocyclopentadiene	ND	510	160	U
67-72-1	Hexachloroethane	ND	140	29.	U
78-59-1	Isophorone	ND	160	23.	U
91-20-3	Naphthalene	ND	180	22.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-05	Date Collected	: 10/11/21 12:35
Client ID	: SB005_1-3	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/13/21 17:27
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8270D	Dilution Factor	: 1
Lab File ID	: 55380-05	Analyst	: JG
Sample Amount	: 30.84 g	Instrument ID	: SV112
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 91
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
98-95-3	Nitrobenzene	ND	160	26.	U
86-30-6	NDPA/DPA	ND	140	20.	U
621-64-7	n-Nitrosodi-n-propylamine	ND	180	27.	U
117-81-7	Bis(2-ethylhexyl)phthalate	ND	180	62.	U
85-68-7	Butyl benzyl phthalate	ND	180	45.	U
84-74-2	Di-n-butylphthalate	ND	180	34.	U
117-84-0	Di-n-octylphthalate	ND	180	60.	U
84-66-2	Diethyl phthalate	ND	180	16.	U
131-11-3	Dimethyl phthalate	ND	180	37.	U
56-55-3	Benzo(a)anthracene	ND	110	20.	U
50-32-8	Benzo(a)pyrene	ND	140	43.	U
205-99-2	Benzo(b)fluoranthene	ND	110	30.	U
207-08-9	Benzo(k)fluoranthene	ND	110	28.	U
218-01-9	Chrysene	ND	110	18.	U
208-96-8	Acenaphthylene	ND	140	27.	U
120-12-7	Anthracene	ND	110	35.	U
191-24-2	Benzo(ghi)perylene	ND	140	21.	U
86-73-7	Fluorene	ND	180	17.	U
85-01-8	Phenanthrene	ND	110	22.	U
53-70-3	Dibenzo(a,h)anthracene	ND	110	20.	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	140	25.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-05	Date Collected	: 10/11/21 12:35
Client ID	: SB005_1-3	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/13/21 17:27
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8270D	Dilution Factor	: 1
Lab File ID	: 55380-05	Analyst	: JG
Sample Amount	: 30.84 g	Instrument ID	: SV112
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 91
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
129-00-0	Pyrene	ND	110	18.	U
92-52-4	Biphenyl	ND	400	41.	U
106-47-8	4-Chloroaniline	ND	180	32.	U
88-74-4	2-Nitroaniline	ND	180	34.	U
99-09-2	3-Nitroaniline	ND	180	34.	U
100-01-6	4-Nitroaniline	ND	180	74.	U
132-64-9	Dibenzofuran	ND	180	17.	U
91-57-6	2-Methylnaphthalene	ND	210	21.	U
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	180	18.	U
98-86-2	Acetophenone	ND	180	22.	U
88-06-2	2,4,6-Trichlorophenol	ND	110	34.	U
59-50-7	p-Chloro-m-cresol	ND	180	26.	U
95-57-8	2-Chlorophenol	ND	180	21.	U
120-83-2	2,4-Dichlorophenol	ND	160	28.	U
105-67-9	2,4-Dimethylphenol	ND	180	59.	U
88-75-5	2-Nitrophenol	ND	380	67.	U
100-02-7	4-Nitrophenol	ND	250	72.	U
51-28-5	2,4-Dinitrophenol	ND	850	83.	U
534-52-1	4,6-Dinitro-o-cresol	ND	460	85.	U
87-86-5	Pentachlorophenol	ND	140	39.	U
108-95-2	Phenol	ND	180	27.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-05	**Date Collected**	: 10/11/21 12:35
Client ID	: SB005_1-3	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 17:27
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-05	**Analyst**	: JG
Sample Amount	: 30.84 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
95-48-7	2-Methylphenol	ND	180	28.	U
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	ND	260	28.	U
95-95-4	2,4,5-Trichlorophenol	ND	180	34.	U
65-85-0	Benzoic Acid	ND	580	180	U
100-51-6	Benzyl Alcohol	ND	180	54.	U
86-74-8	Carbazole	ND	180	17.	U
123-91-1	1,4-Dioxane	ND	27	8.2	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-06	**Date Collected**	: 10/11/21 12:55
Client ID	: SB006_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/23/21 03:34
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-06	**Analyst**	: IM
Sample Amount	: 30.5 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 92
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
83-32-9	Acenaphthene	ND	140	18.	U
120-82-1	1,2,4-Trichlorobenzene	ND	180	20.	U
118-74-1	Hexachlorobenzene	ND	110	20.	U
111-44-4	Bis(2-chloroethyl)ether	ND	160	24.	U
91-58-7	2-Chloronaphthalene	ND	180	18.	U
95-50-1	1,2-Dichlorobenzene	ND	180	32.	U
541-73-1	1,3-Dichlorobenzene	ND	180	31.	U
106-46-7	1,4-Dichlorobenzene	ND	180	31.	U
91-94-1	3,3'-Dichlorobenzidine	ND	180	47.	U
121-14-2	2,4-Dinitrotoluene	ND	180	36.	U
606-20-2	2,6-Dinitrotoluene	ND	180	30.	U
206-44-0	Fluoranthene	ND	110	20.	U
7005-72-3	4-Chlorophenyl phenyl ether	ND	180	19.	U
101-55-3	4-Bromophenyl phenyl ether	ND	180	27.	U
108-60-1	Bis(2-chloroisopropyl)ether	ND	210	30.	U
111-91-1	Bis(2-chloroethoxy)methane	ND	190	18.	U
87-68-3	Hexachlorobutadiene	ND	180	26.	U
77-47-4	Hexachlorocyclopentadiene	ND	510	160	U
67-72-1	Hexachloroethane	ND	140	29.	U
78-59-1	Isophorone	ND	160	23.	U
91-20-3	Naphthalene	ND	180	22.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-06	Date Collected	: 10/11/21 12:55
Client ID	: SB006_2-4	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/23/21 03:34
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8270D	Dilution Factor	: 1
Lab File ID	: 55380-06	Analyst	: IM
Sample Amount	: 30.5 g	Instrument ID	: SV112
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 92
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
98-95-3	Nitrobenzene	ND	160	26.	U
86-30-6	NDPA/DPA	ND	140	20.	U
621-64-7	n-Nitrosodi-n-propylamine	ND	180	27.	U
117-81-7	Bis(2-ethylhexyl)phthalate	ND	180	62.	U
85-68-7	Butyl benzyl phthalate	ND	180	45.	U
84-74-2	Di-n-butylphthalate	ND	180	34.	U
117-84-0	Di-n-octylphthalate	ND	180	60.	U
84-66-2	Diethyl phthalate	ND	180	16.	U
131-11-3	Dimethyl phthalate	ND	180	37.	U
56-55-3	Benzo(a)anthracene	ND	110	20.	U
50-32-8	Benzo(a)pyrene	ND	140	43.	U
205-99-2	Benzo(b)fluoranthene	ND	110	30.	U
207-08-9	Benzo(k)fluoranthene	ND	110	28.	U
218-01-9	Chrysene	ND	110	18.	U
208-96-8	Acenaphthylene	ND	140	27.	U
120-12-7	Anthracene	ND	110	35.	U
191-24-2	Benzo(ghi)perylene	ND	140	21.	U
86-73-7	Fluorene	ND	180	17.	U
85-01-8	Phenanthrene	ND	110	22.	U
53-70-3	Dibenzo(a,h)anthracene	ND	110	20.	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	140	25.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-06	**Date Collected**	: 10/11/21 12:55
Client ID	: SB006_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/23/21 03:34
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-06	**Analyst**	: IM
Sample Amount	: 30.5 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 92
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
129-00-0	Pyrene	ND	110	18.	U
92-52-4	Biphenyl	ND	400	41.	U
106-47-8	4-Chloroaniline	ND	180	32.	U
88-74-4	2-Nitroaniline	ND	180	34.	U
99-09-2	3-Nitroaniline	ND	180	34.	U
100-01-6	4-Nitroaniline	ND	180	74.	U
132-64-9	Dibenzofuran	ND	180	17.	U
91-57-6	2-Methylnaphthalene	ND	210	22.	U
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	180	18.	U
98-86-2	Acetophenone	ND	180	22.	U
88-06-2	2,4,6-Trichlorophenol	ND	110	34.	U
59-50-7	p-Chloro-m-cresol	ND	180	26.	U
95-57-8	2-Chlorophenol	ND	180	21.	U
120-83-2	2,4-Dichlorophenol	ND	160	29.	U
105-67-9	2,4-Dimethylphenol	ND	180	59.	U
88-75-5	2-Nitrophenol	ND	380	67.	U
100-02-7	4-Nitrophenol	ND	250	73.	U
51-28-5	2,4-Dinitrophenol	ND	850	83.	U
534-52-1	4,6-Dinitro-o-cresol	ND	460	85.	U
87-86-5	Pentachlorophenol	ND	140	39.	U
108-95-2	Phenol	ND	180	27.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-06	**Date Collected**	: 10/11/21 12:55
Client ID	: SB006_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/23/21 03:34
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-06	**Analyst**	: IM
Sample Amount	: 30.5 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 92
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
95-48-7	2-Methylphenol	ND	180	28.	U
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	ND	260	28.	U
95-95-4	2,4,5-Trichlorophenol	ND	180	34.	U
65-85-0	Benzoic Acid	ND	580	180	U
100-51-6	Benzyl Alcohol	ND	180	54.	U
86-74-8	Carbazole	ND	180	17.	U
123-91-1	1,4-Dioxane	ND	27	8.2	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-07	**Date Collected**	: 10/11/21 13:20
Client ID	: SB007_5-7	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/23/21 02:26
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-07	**Analyst**	: IM
Sample Amount	: 30.88 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 99
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
83-32-9	Acenaphthene	ND	130	17.	U
120-82-1	1,2,4-Trichlorobenzene	ND	160	19.	U
118-74-1	Hexachlorobenzene	ND	98	18.	U
111-44-4	Bis(2-chloroethyl)ether	ND	150	22.	U
91-58-7	2-Chloronaphthalene	ND	160	16.	U
95-50-1	1,2-Dichlorobenzene	ND	160	29.	U
541-73-1	1,3-Dichlorobenzene	ND	160	28.	U
106-46-7	1,4-Dichlorobenzene	ND	160	28.	U
91-94-1	3,3'-Dichlorobenzidine	ND	160	43.	U
121-14-2	2,4-Dinitrotoluene	ND	160	33.	U
606-20-2	2,6-Dinitrotoluene	ND	160	28.	U
206-44-0	Fluoranthene	ND	98	19.	U
7005-72-3	4-Chlorophenyl phenyl ether	ND	160	17.	U
101-55-3	4-Bromophenyl phenyl ether	ND	160	25.	U
108-60-1	Bis(2-chloroisopropyl)ether	ND	200	28.	U
111-91-1	Bis(2-chloroethoxy)methane	ND	180	16.	U
87-68-3	Hexachlorobutadiene	ND	160	24.	U
77-47-4	Hexachlorocyclopentadiene	ND	470	150	U
67-72-1	Hexachloroethane	ND	130	26.	U
78-59-1	Isophorone	ND	150	21.	U
91-20-3	Naphthalene	ND	160	20.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-07	**Date Collected**	: 10/11/21 13:20
Client ID	: SB007_5-7	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/23/21 02:26
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-07	**Analyst**	: IM
Sample Amount	: 30.88 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 99
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
98-95-3	Nitrobenzene	ND	150	24.	U
86-30-6	NDPA/DPA	ND	130	18.	U
621-64-7	n-Nitrosodi-n-propylamine	ND	160	25.	U
117-81-7	Bis(2-ethylhexyl)phthalate	ND	160	56.	U
85-68-7	Butyl benzyl phthalate	ND	160	41.	U
84-74-2	Di-n-butylphthalate	ND	160	31.	U
117-84-0	Di-n-octylphthalate	ND	160	55.	U
84-66-2	Diethyl phthalate	ND	160	15.	U
131-11-3	Dimethyl phthalate	ND	160	34.	U
56-55-3	Benzo(a)anthracene	ND	98	18.	U
50-32-8	Benzo(a)pyrene	ND	130	40.	U
205-99-2	Benzo(b)fluoranthene	ND	98	27.	U
207-08-9	Benzo(k)fluoranthene	ND	98	26.	U
218-01-9	Chrysene	ND	98	17.	U
208-96-8	Acenaphthylene	ND	130	25.	U
120-12-7	Anthracene	ND	98	32.	U
191-24-2	Benzo(ghi)perylene	ND	130	19.	U
86-73-7	Fluorene	ND	160	16.	U
85-01-8	Phenanthrene	ND	98	20.	U
53-70-3	Dibenzo(a,h)anthracene	ND	98	19.	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	130	23.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-07	Date Collected	: 10/11/21 13:20
Client ID	: SB007_5-7	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/23/21 02:26
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8270D	Dilution Factor	: 1
Lab File ID	: 55380-07	Analyst	: IM
Sample Amount	: 30.88 g	Instrument ID	: SV112
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 99
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
129-00-0	Pyrene	ND	98	16.	U
92-52-4	Biphenyl	ND	370	38.	U
106-47-8	4-Chloroaniline	ND	160	30.	U
88-74-4	2-Nitroaniline	ND	160	31.	U
99-09-2	3-Nitroaniline	ND	160	31.	U
100-01-6	4-Nitroaniline	ND	160	68.	U
132-64-9	Dibenzofuran	ND	160	15.	U
91-57-6	2-Methylnaphthalene	ND	200	20.	U
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	160	17.	U
98-86-2	Acetophenone	ND	160	20.	U
88-06-2	2,4,6-Trichlorophenol	ND	98	31.	U
59-50-7	p-Chloro-m-cresol	ND	160	24.	U
95-57-8	2-Chlorophenol	ND	160	19.	U
120-83-2	2,4-Dichlorophenol	ND	150	26.	U
105-67-9	2,4-Dimethylphenol	ND	160	54.	U
88-75-5	2-Nitrophenol	ND	350	61.	U
100-02-7	4-Nitrophenol	ND	230	66.	U
51-28-5	2,4-Dinitrophenol	ND	780	76.	U
534-52-1	4,6-Dinitro-o-cresol	ND	420	78.	U
87-86-5	Pentachlorophenol	ND	130	36.	U
108-95-2	Phenol	ND	160	25.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-07	**Date Collected**	: 10/11/21 13:20
Client ID	: SB007_5-7	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/23/21 02:26
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-07	**Analyst**	: IM
Sample Amount	: 30.88 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 99
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
95-48-7	2-Methylphenol	ND	160	25.	U
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	ND	240	26.	U
95-95-4	2,4,5-Trichlorophenol	ND	160	31.	U
65-85-0	Benzoic Acid	ND	530	160	U
100-51-6	Benzyl Alcohol	ND	160	50.	U
86-74-8	Carbazole	ND	160	16.	U
123-91-1	1,4-Dioxane	ND	24	7.5	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-08	Date Collected	: 10/11/21 13:45
Client ID	: SB008_6-8	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/23/21 02:49
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8270D	Dilution Factor	: 1
Lab File ID	: 55380-08	Analyst	: IM
Sample Amount	: 30.15 g	Instrument ID	: SV112
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 84
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
83-32-9	Acenaphthene	ND	160	20.	U
120-82-1	1,2,4-Trichlorobenzene	ND	200	23.	U
118-74-1	Hexachlorobenzene	ND	120	22.	U
111-44-4	Bis(2-chloroethyl)ether	ND	180	27.	U
91-58-7	2-Chloronaphthalene	ND	200	20.	U
95-50-1	1,2-Dichlorobenzene	ND	200	35.	U
541-73-1	1,3-Dichlorobenzene	ND	200	34.	U
106-46-7	1,4-Dichlorobenzene	ND	200	34.	U
91-94-1	3,3'-Dichlorobenzidine	ND	200	52.	U
121-14-2	2,4-Dinitrotoluene	ND	200	40.	U
606-20-2	2,6-Dinitrotoluene	ND	200	34.	U
206-44-0	Fluoranthene	ND	120	23.	U
7005-72-3	4-Chlorophenyl phenyl ether	ND	200	21.	U
101-55-3	4-Bromophenyl phenyl ether	ND	200	30.	U
108-60-1	Bis(2-chloroisopropyl)ether	ND	240	34.	U
111-91-1	Bis(2-chloroethoxy)methane	ND	210	20.	U
87-68-3	Hexachlorobutadiene	ND	200	29.	U
77-47-4	Hexachlorocyclopentadiene	ND	560	180	U
67-72-1	Hexachloroethane	ND	160	32.	U
78-59-1	Isophorone	ND	180	26.	U
91-20-3	Naphthalene	ND	200	24.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-08	Date Collected	: 10/11/21 13:45
Client ID	: SB008_6-8	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/23/21 02:49
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8270D	Dilution Factor	: 1
Lab File ID	: 55380-08	Analyst	: IM
Sample Amount	: 30.15 g	Instrument ID	: SV112
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 84
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
98-95-3	Nitrobenzene	ND	180	29.	U
86-30-6	NDPA/DPA	ND	160	22.	U
621-64-7	n-Nitrosodi-n-propylamine	ND	200	30.	U
117-81-7	Bis(2-ethylhexyl)phthalate	ND	200	68.	U
85-68-7	Butyl benzyl phthalate	ND	200	50.	U
84-74-2	Di-n-butylphthalate	ND	200	37.	U
117-84-0	Di-n-octylphthalate	ND	200	67.	U
84-66-2	Diethyl phthalate	ND	200	18.	U
131-11-3	Dimethyl phthalate	ND	200	42.	U
56-55-3	Benzo(a)anthracene	ND	120	22.	U
50-32-8	Benzo(a)pyrene	ND	160	48.	U
205-99-2	Benzo(b)fluoranthene	ND	120	33.	U
207-08-9	Benzo(k)fluoranthene	ND	120	32.	U
218-01-9	Chrysene	ND	120	20.	U
208-96-8	Acenaphthylene	ND	160	30.	U
120-12-7	Anthracene	ND	120	38.	U
191-24-2	Benzo(ghi)perylene	ND	160	23.	U
86-73-7	Fluorene	ND	200	19.	U
85-01-8	Phenanthrene	ND	120	24.	U
53-70-3	Dibenzo(a,h)anthracene	ND	120	23.	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	160	28.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-08	**Date Collected**	: 10/11/21 13:45
Client ID	: SB008_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/23/21 02:49
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-08	**Analyst**	: IM
Sample Amount	: 30.15 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 84
GPC Cleanup	: N	**Injection Volume**	: 1 uL

CAS NO.	Parameter	ug/Kg Results	RL	MDL	Qualifier
129-00-0	Pyrene	ND	120	20.	U
92-52-4	Biphenyl	ND	450	46.	U
106-47-8	4-Chloroaniline	ND	200	36.	U
88-74-4	2-Nitroaniline	ND	200	38.	U
99-09-2	3-Nitroaniline	ND	200	37.	U
100-01-6	4-Nitroaniline	ND	200	82.	U
132-64-9	Dibenzofuran	ND	200	19.	U
91-57-6	2-Methylnaphthalene	ND	240	24.	U
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	200	21.	U
98-86-2	Acetophenone	ND	200	24.	U
88-06-2	2,4,6-Trichlorophenol	ND	120	37.	U
59-50-7	p-Chloro-m-cresol	ND	200	29.	U
95-57-8	2-Chlorophenol	ND	200	23.	U
120-83-2	2,4-Dichlorophenol	ND	180	32.	U
105-67-9	2,4-Dimethylphenol	ND	200	65.	U
88-75-5	2-Nitrophenol	ND	430	74.	U
100-02-7	4-Nitrophenol	ND	280	81.	U
51-28-5	2,4-Dinitrophenol	ND	950	92.	U
534-52-1	4,6-Dinitro-o-cresol	ND	510	95.	U
87-86-5	Pentachlorophenol	ND	160	43.	U
108-95-2	Phenol	ND	200	30.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-08	**Date Collected**	: 10/11/21 13:45
Client ID	: SB008_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/23/21 02:49
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-08	**Analyst**	: IM
Sample Amount	: 30.15 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 84
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
95-48-7	2-Methylphenol	ND	200	31.	U
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	ND	280	31.	U
95-95-4	2,4,5-Trichlorophenol	ND	200	38.	U
65-85-0	Benzoic Acid	ND	640	200	U
100-51-6	Benzyl Alcohol	ND	200	60.	U
86-74-8	Carbazole	ND	200	19.	U
123-91-1	1,4-Dioxane	ND	30	9.1	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-09	**Date Collected**	: 10/11/21 14:05
Client ID	: SB009_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/23/21 06:59
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-09	**Analyst**	: IM
Sample Amount	: 30.07 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
83-32-9	Acenaphthene	190	150	19.	
120-82-1	1,2,4-Trichlorobenzene	ND	180	21.	U
118-74-1	Hexachlorobenzene	ND	110	20.	U
111-44-4	Bis(2-chloroethyl)ether	ND	160	25.	U
91-58-7	2-Chloronaphthalene	ND	180	18.	U
95-50-1	1,2-Dichlorobenzene	ND	180	33.	U
541-73-1	1,3-Dichlorobenzene	ND	180	32.	U
106-46-7	1,4-Dichlorobenzene	ND	180	32.	U
91-94-1	3,3'-Dichlorobenzidine	ND	180	49.	U
121-14-2	2,4-Dinitrotoluene	ND	180	37.	U
606-20-2	2,6-Dinitrotoluene	ND	180	31.	U
206-44-0	Fluoranthene	3400	110	21.	
7005-72-3	4-Chlorophenyl phenyl ether	ND	180	20.	U
101-55-3	4-Bromophenyl phenyl ether	ND	180	28.	U
108-60-1	Bis(2-chloroisopropyl)ether	ND	220	31.	U
111-91-1	Bis(2-chloroethoxy)methane	ND	200	18.	U
87-68-3	Hexachlorobutadiene	ND	180	27.	U
77-47-4	Hexachlorocyclopentadiene	ND	520	170	U
67-72-1	Hexachloroethane	ND	150	30.	U
78-59-1	Isophorone	ND	160	24.	U
91-20-3	Naphthalene	67	180	22.	J

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-09	Date Collected	: 10/11/21 14:05
Client ID	: SB009_2-4	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/23/21 06:59
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8270D	Dilution Factor	: 1
Lab File ID	: 55380-09	Analyst	: IM
Sample Amount	: 30.07 g	Instrument ID	: SV112
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 91
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
98-95-3	Nitrobenzene	ND	160	27.	U
86-30-6	NDPA/DPA	ND	150	21.	U
621-64-7	n-Nitrosodi-n-propylamine	ND	180	28.	U
117-81-7	Bis(2-ethylhexyl)phthalate	ND	180	64.	U
85-68-7	Butyl benzyl phthalate	ND	180	46.	U
84-74-2	Di-n-butylphthalate	ND	180	35.	U
117-84-0	Di-n-octylphthalate	ND	180	62.	U
84-66-2	Diethyl phthalate	ND	180	17.	U
131-11-3	Dimethyl phthalate	ND	180	38.	U
56-55-3	Benzo(a)anthracene	1600	110	21.	
50-32-8	Benzo(a)pyrene	1500	150	45.	
205-99-2	Benzo(b)fluoranthene	2100	110	31.	
207-08-9	Benzo(k)fluoranthene	510	110	29.	
218-01-9	Chrysene	1400	110	19.	
208-96-8	Acenaphthylene	93	150	28.	J
120-12-7	Anthracene	540	110	36.	
191-24-2	Benzo(ghi)perylene	980	150	22.	
86-73-7	Fluorene	190	180	18.	
85-01-8	Phenanthrene	2300	110	22.	
53-70-3	Dibenzo(a,h)anthracene	240	110	21.	
193-39-5	Indeno(1,2,3-cd)pyrene	1000	150	26.	

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-09	Date Collected	: 10/11/21 14:05
Client ID	: SB009_2-4	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/23/21 06:59
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8270D	Dilution Factor	: 1
Lab File ID	: 55380-09	Analyst	: IM
Sample Amount	: 30.07 g	Instrument ID	: SV112
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: 91
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
129-00-0	Pyrene	2900	110	18.	
92-52-4	Biphenyl	ND	420	42.	U
106-47-8	4-Chloroaniline	ND	180	33.	U
88-74-4	2-Nitroaniline	ND	180	35.	U
99-09-2	3-Nitroaniline	ND	180	35.	U
100-01-6	4-Nitroaniline	ND	180	76.	U
132-64-9	Dibenzofuran	100	180	17.	J
91-57-6	2-Methylnaphthalene	48	220	22.	J
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	180	19.	U
98-86-2	Acetophenone	ND	180	23.	U
88-06-2	2,4,6-Trichlorophenol	ND	110	35.	U
59-50-7	p-Chloro-m-cresol	ND	180	27.	U
95-57-8	2-Chlorophenol	ND	180	22.	U
120-83-2	2,4-Dichlorophenol	ND	160	30.	U
105-67-9	2,4-Dimethylphenol	ND	180	60.	U
88-75-5	2-Nitrophenol	ND	400	69.	U
100-02-7	4-Nitrophenol	ND	260	75.	U
51-28-5	2,4-Dinitrophenol	ND	880	86.	U
534-52-1	4,6-Dinitro-o-cresol	ND	480	88.	U
87-86-5	Pentachlorophenol	ND	150	40.	U
108-95-2	Phenol	ND	180	28.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-09	**Date Collected**	: 10/11/21 14:05
Client ID	: SB009_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/23/21 06:59
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-09	**Analyst**	: IM
Sample Amount	: 30.07 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
95-48-7	2-Methylphenol	ND	180	28.	U
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	ND	260	29.	U
95-95-4	2,4,5-Trichlorophenol	ND	180	35.	U
65-85-0	Benzoic Acid	ND	590	180	U
100-51-6	Benzyl Alcohol	ND	180	56.	U
86-74-8	Carbazole	190	180	18.	
123-91-1	1,4-Dioxane	ND	28	8.4	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-10	**Date Collected**	: 10/11/21 14:25
Client ID	: SB010_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 17:50
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-10	**Analyst**	: JG
Sample Amount	: 30.66 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
83-32-9	Acenaphthene	240	140	18.	
120-82-1	1,2,4-Trichlorobenzene	25	180	20.	J
118-74-1	Hexachlorobenzene	34	110	20.	J
111-44-4	Bis(2-chloroethyl)ether	ND	160	24.	U
91-58-7	2-Chloronaphthalene	32	180	18.	J
95-50-1	1,2-Dichlorobenzene	ND	180	32.	U
541-73-1	1,3-Dichlorobenzene	ND	180	31.	U
106-46-7	1,4-Dichlorobenzene	ND	180	31.	U
91-94-1	3,3'-Dichlorobenzidine	ND	180	48.	U
121-14-2	2,4-Dinitrotoluene	ND	180	36.	U
606-20-2	2,6-Dinitrotoluene	ND	180	31.	U
206-44-0	Fluoranthene	1500	110	20.	
7005-72-3	4-Chlorophenyl phenyl ether	38	180	19.	J
101-55-3	4-Bromophenyl phenyl ether	35	180	27.	J
108-60-1	Bis(2-chloroisopropyl)ether	ND	210	30.	U
111-91-1	Bis(2-chloroethoxy)methane	ND	190	18.	U
87-68-3	Hexachlorobutadiene	ND	180	26.	U
77-47-4	Hexachlorocyclopentadiene	ND	510	160	U
67-72-1	Hexachloroethane	ND	140	29.	U
78-59-1	Isophorone	ND	160	23.	U
91-20-3	Naphthalene	130	180	22.	J

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-10	**Date Collected**	: 10/11/21 14:25
Client ID	: SB010_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 17:50
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-10	**Analyst**	: JG
Sample Amount	: 30.66 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
98-95-3	Nitrobenzene	ND	160	26.	U
86-30-6	NDPA/DPA	ND	140	20.	U
621-64-7	n-Nitrosodi-n-propylamine	ND	180	28.	U
117-81-7	Bis(2-ethylhexyl)phthalate	ND	180	62.	U
85-68-7	Butyl benzyl phthalate	ND	180	45.	U
84-74-2	Di-n-butylphthalate	ND	180	34.	U
117-84-0	Di-n-octylphthalate	ND	180	61.	U
84-66-2	Diethyl phthalate	ND	180	16.	U
131-11-3	Dimethyl phthalate	ND	180	38.	U
56-55-3	Benzo(a)anthracene	640	110	20.	
50-32-8	Benzo(a)pyrene	570	140	44.	
205-99-2	Benzo(b)fluoranthene	700	110	30.	
207-08-9	Benzo(k)fluoranthene	260	110	28.	
218-01-9	Chrysene	600	110	18.	
208-96-8	Acenaphthylene	34	140	28.	J
120-12-7	Anthracene	410	110	35.	
191-24-2	Benzo(ghi)perylene	320	140	21.	
86-73-7	Fluorene	220	180	17.	
85-01-8	Phenanthrene	1400	110	22.	
53-70-3	Dibenzo(a,h)anthracene	93	110	21.	J
193-39-5	Indeno(1,2,3-cd)pyrene	380	140	25.	

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-10	**Date Collected**	: 10/11/21 14:25
Client ID	: SB010_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 17:50
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-10	**Analyst**	: JG
Sample Amount	: 30.66 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
129-00-0	Pyrene	1200	110	18.	
92-52-4	Biphenyl	ND	410	41.	U
106-47-8	4-Chloroaniline	ND	180	32.	U
88-74-4	2-Nitroaniline	ND	180	34.	U
99-09-2	3-Nitroaniline	ND	180	34.	U
100-01-6	4-Nitroaniline	ND	180	74.	U
132-64-9	Dibenzofuran	170	180	17.	J
91-57-6	2-Methylnaphthalene	110	210	22.	J
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	180	19.	U
98-86-2	Acetophenone	ND	180	22.	U
88-06-2	2,4,6-Trichlorophenol	ND	110	34.	U
59-50-7	p-Chloro-m-cresol	ND	180	27.	U
95-57-8	2-Chlorophenol	ND	180	21.	U
120-83-2	2,4-Dichlorophenol	ND	160	29.	U
105-67-9	2,4-Dimethylphenol	ND	180	59.	U
88-75-5	2-Nitrophenol	ND	380	67.	U
100-02-7	4-Nitrophenol	ND	250	73.	U
51-28-5	2,4-Dinitrophenol	ND	860	83.	U
534-52-1	4,6-Dinitro-o-cresol	ND	460	86.	U
87-86-5	Pentachlorophenol	ND	140	39.	U
108-95-2	Phenol	ND	180	27.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-10	**Date Collected**	: 10/11/21 14:25
Client ID	: SB010_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 17:50
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 55380-10	**Analyst**	: JG
Sample Amount	: 30.66 g	**Instrument ID**	: SV112
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
95-48-7	2-Methylphenol	ND	180	28.	U
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	28	260	28.	J
95-95-4	2,4,5-Trichlorophenol	ND	180	34.	U
65-85-0	Benzoic Acid	ND	580	180	U
100-51-6	Benzyl Alcohol	ND	180	55.	U
86-74-8	Carbazole	200	180	17.	
123-91-1	1,4-Dioxane	ND	27	8.2	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: WG1557691-1	Date Collected	: NA
Client ID	: WG1557691-1BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 10/13/21 23:30
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8270D	Dilution Factor	: 1
Lab File ID	: 557691-1	Analyst	: IM
Sample Amount	: 30.1 g	Instrument ID	: GCMS5
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: NA
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
83-32-9	Acenaphthene	ND	130	17.	U
120-82-1	1,2,4-Trichlorobenzene	ND	170	19.	U
118-74-1	Hexachlorobenzene	ND	100	19.	U
111-44-4	Bis(2-chloroethyl)ether	ND	150	22.	U
91-58-7	2-Chloronaphthalene	ND	170	16.	U
95-50-1	1,2-Dichlorobenzene	ND	170	30.	U
541-73-1	1,3-Dichlorobenzene	ND	170	28.	U
106-46-7	1,4-Dichlorobenzene	ND	170	29.	U
91-94-1	3,3'-Dichlorobenzidine	ND	170	44.	U
121-14-2	2,4-Dinitrotoluene	ND	170	33.	U
606-20-2	2,6-Dinitrotoluene	ND	170	28.	U
206-44-0	Fluoranthene	ND	100	19.	U
7005-72-3	4-Chlorophenyl phenyl ether	ND	170	18.	U
101-55-3	4-Bromophenyl phenyl ether	ND	170	25.	U
108-60-1	Bis(2-chloroisopropyl)ether	ND	200	28.	U
111-91-1	Bis(2-chloroethoxy)methane	ND	180	17.	U
87-68-3	Hexachlorobutadiene	ND	170	24.	U
77-47-4	Hexachlorocyclopentadiene	ND	480	150	U
67-72-1	Hexachloroethane	ND	130	27.	U
78-59-1	Isophorone	ND	150	22.	U
91-20-3	Naphthalene	ND	170	20.	U
98-95-3	Nitrobenzene	ND	150	24.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: WG1557691-1	Date Collected	: NA
Client ID	: WG1557691-1BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 10/13/21 23:30
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8270D	Dilution Factor	: 1
Lab File ID	: 557691-1	Analyst	: IM
Sample Amount	: 30.1 g	Instrument ID	: GCMS5
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: NA
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
86-30-6	NDPA/DPA	ND	130	19.	U
621-64-7	n-Nitrosodi-n-propylamine	ND	170	26.	U
117-81-7	Bis(2-ethylhexyl)phthalate	ND	170	57.	U
85-68-7	Butyl benzyl phthalate	ND	170	42.	U
84-74-2	Di-n-butylphthalate	ND	170	31.	U
117-84-0	Di-n-octylphthalate	ND	170	56.	U
84-66-2	Diethyl phthalate	ND	170	15.	U
131-11-3	Dimethyl phthalate	ND	170	35.	U
56-55-3	Benzo(a)anthracene	ND	100	19.	U
50-32-8	Benzo(a)pyrene	ND	130	40.	U
205-99-2	Benzo(b)fluoranthene	ND	100	28.	U
207-08-9	Benzo(k)fluoranthene	ND	100	26.	U
218-01-9	Chrysene	ND	100	17.	U
208-96-8	Acenaphthylene	ND	130	26.	U
120-12-7	Anthracene	ND	100	32.	U
191-24-2	Benzo(ghi)perylene	ND	130	20.	U
86-73-7	Fluorene	ND	170	16.	U
85-01-8	Phenanthrene	ND	100	20.	U
53-70-3	Dibenzo(a,h)anthracene	ND	100	19.	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	130	23.	U
129-00-0	Pyrene	ND	100	16.	U
92-52-4	Biphenyl	ND	380	38.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: WG1557691-1	Date Collected	: NA
Client ID	: WG1557691-1BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 10/13/21 23:30
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8270D	Dilution Factor	: 1
Lab File ID	: 557691-1	Analyst	: IM
Sample Amount	: 30.1 g	Instrument ID	: GCMS5
Extraction Method	: EPA 3546	GC Column	: RTX5-MS
Extract Volume	: 1000 uL	%Solids	: NA
GPC Cleanup	: N	Injection Volume	: 1 uL

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
106-47-8	4-Chloroaniline	ND	170	30.	U
88-74-4	2-Nitroaniline	ND	170	32.	U
99-09-2	3-Nitroaniline	ND	170	31.	U
100-01-6	4-Nitroaniline	ND	170	69.	U
132-64-9	Dibenzofuran	ND	170	16.	U
91-57-6	2-Methylnaphthalene	ND	200	20.	U
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	170	17.	U
98-86-2	Acetophenone	ND	170	20.	U
88-06-2	2,4,6-Trichlorophenol	ND	100	31.	U
59-50-7	p-Chloro-m-cresol	ND	170	25.	U
95-57-8	2-Chlorophenol	ND	170	20.	U
120-83-2	2,4-Dichlorophenol	ND	150	27.	U
105-67-9	2,4-Dimethylphenol	ND	170	55.	U
88-75-5	2-Nitrophenol	ND	360	62.	U
100-02-7	4-Nitrophenol	ND	230	68.	U
51-28-5	2,4-Dinitrophenol	ND	800	77.	U
534-52-1	4,6-Dinitro-o-cresol	ND	430	80.	U
87-86-5	Pentachlorophenol	ND	130	36.	U
108-95-2	Phenol	ND	170	25.	U
95-48-7	2-Methylphenol	ND	170	26.	U
108-39-4/106-44-5	3-Methylphenol/4-Methylphenol	ND	240	26.	U
95-95-4	2,4,5-Trichlorophenol	ND	170	32.	U

Results Summary
Form 1
Semivolatile Organics by GC/MS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: WG1557691-1	**Date Collected**	: NA
Client ID	: WG1557691-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/13/21 23:30
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8270D	**Dilution Factor**	: 1
Lab File ID	: 557691-1	**Analyst**	: IM
Sample Amount	: 30.1 g	**Instrument ID**	: GCMS5
Extraction Method	: EPA 3546	**GC Column**	: RTX5-MS
Extract Volume	: 1000 uL	**%Solids**	: NA
GPC Cleanup	: N	**Injection Volume**	: 1 uL

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
65-85-0	Benzoic Acid	ND	540	170	U
100-51-6	Benzyl Alcohol	ND	170	51.	U
86-74-8	Carbazole	ND	170	16.	U
123-91-1	1,4-Dioxane	ND	25	7.6	U

GC Extractable Analysis Polychlorinated Biphenyls (PCB)

Aroclor Sample Data

Results Summary
Form 1
Polychlorinated Biphenyls by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-01	**Date Collected**	: 10/11/21 11:10
Client ID	: SB001_0-2	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 15:17
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8082A	**Dilution Factor**	: 1
Lab File ID	: 19211013a-20	**Analyst**	: JM
Sample Amount	: 15.09 g	**Instrument ID**	: PEST19
Extraction Method	: EPA 3546	**GC Column**	: CLP-Pesticide
Extract Volume	: 1000 uL	**%Solids**	: 94
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
12674-11-2	Aroclor 1016	ND	35.2	3.12	U
11104-28-2	Aroclor 1221	ND	35.2	3.52	U
11141-16-5	Aroclor 1232	ND	35.2	7.46	U
53469-21-9	Aroclor 1242	ND	35.2	4.74	U
12672-29-6	Aroclor 1248	ND	35.2	5.28	U
11097-69-1	Aroclor 1254	ND	35.2	3.85	U
11096-82-5	Aroclor 1260	ND	35.2	6.50	U
37324-23-5	Aroclor 1262	ND	35.2	4.47	U
11100-14-4	Aroclor 1268	ND	35.2	3.64	U
1336-36-3	PCBs, Total	ND	35.2	3.12	U

Results Summary
Form 1
Polychlorinated Biphenyls by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-02	**Date Collected**	: 10/11/21 11:30
Client ID	: SB002_3-5	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 15:24
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8082A	**Dilution Factor**	: 1
Lab File ID	: 19211013a-21	**Analyst**	: JM
Sample Amount	: 15.77 g	**Instrument ID**	: PEST19
Extraction Method	: EPA 3546	**GC Column**	: CLP-Pesticide
Extract Volume	: 1000 uL	**%Solids**	: 98
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
12674-11-2	Aroclor 1016	ND	32.4	2.88	U
11104-28-2	Aroclor 1221	ND	32.4	3.25	U
11141-16-5	Aroclor 1232	ND	32.4	6.87	U
53469-21-9	Aroclor 1242	ND	32.4	4.37	U
12672-29-6	Aroclor 1248	ND	32.4	4.86	U
11097-69-1	Aroclor 1254	ND	32.4	3.55	U
11096-82-5	Aroclor 1260	ND	32.4	5.99	U
37324-23-5	Aroclor 1262	ND	32.4	4.12	U
11100-14-4	Aroclor 1268	ND	32.4	3.36	U
1336-36-3	PCBs, Total	ND	32.4	2.88	U

Results Summary
Form 1
Polychlorinated Biphenyls by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-03	**Date Collected**	: 10/11/21 11:50
Client ID	: SB003_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 15:32
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8082A	**Dilution Factor**	: 1
Lab File ID	: 19211013a-22	**Analyst**	: JM
Sample Amount	: 15.78 g	**Instrument ID**	: PEST19
Extraction Method	: EPA 3546	**GC Column**	: CLP-Pesticide
Extract Volume	: 1000 uL	**%Solids**	: 89
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
12674-11-2	Aroclor 1016	ND	35.6	3.16	U
11104-28-2	Aroclor 1221	ND	35.6	3.57	U
11141-16-5	Aroclor 1232	ND	35.6	7.56	U
53469-21-9	Aroclor 1242	ND	35.6	4.80	U
12672-29-6	Aroclor 1248	ND	35.6	5.35	U
11097-69-1	Aroclor 1254	ND	35.6	3.90	U
11096-82-5	Aroclor 1260	ND	35.6	6.59	U
37324-23-5	Aroclor 1262	ND	35.6	4.53	U
11100-14-4	Aroclor 1268	ND	35.6	3.69	U
1336-36-3	PCBs, Total	ND	35.6	3.16	U

Results Summary
Form 1
Polychlorinated Biphenyls by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-04	**Date Collected**	: 10/11/21 12:15
Client ID	: SB004_4-6	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 15:39
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8082A	**Dilution Factor**	: 1
Lab File ID	: 19211013a-23	**Analyst**	: JM
Sample Amount	: 15.14 g	**Instrument ID**	: PEST19
Extraction Method	: EPA 3546	**GC Column**	: CLP-Pesticide
Extract Volume	: 1000 uL	**%Solids**	: 96
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
12674-11-2	Aroclor 1016	ND	34.4	3.06	U
11104-28-2	Aroclor 1221	ND	34.4	3.45	U
11141-16-5	Aroclor 1232	ND	34.4	7.30	U
53469-21-9	Aroclor 1242	ND	34.4	4.64	U
12672-29-6	Aroclor 1248	ND	34.4	5.16	U
11097-69-1	Aroclor 1254	ND	34.4	3.77	U
11096-82-5	Aroclor 1260	ND	34.4	6.36	U
37324-23-5	Aroclor 1262	ND	34.4	4.37	U
11100-14-4	Aroclor 1268	ND	34.4	3.57	U
1336-36-3	PCBs, Total	ND	34.4	3.06	U

Results Summary
Form 1
Polychlorinated Biphenyls by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-05	**Date Collected**	: 10/11/21 12:35
Client ID	: SB005_1-3	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 15:46
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8082A	**Dilution Factor**	: 1
Lab File ID	: 19211013a-24	**Analyst**	: JM
Sample Amount	: 15.37 g	**Instrument ID**	: PEST19
Extraction Method	: EPA 3546	**GC Column**	: CLP-Pesticide
Extract Volume	: 1000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
12674-11-2	Aroclor 1016	ND	35.7	3.17	U
11104-28-2	Aroclor 1221	ND	35.7	3.57	U
11141-16-5	Aroclor 1232	ND	35.7	7.56	U
53469-21-9	Aroclor 1242	ND	35.7	4.81	U
12672-29-6	Aroclor 1248	ND	35.7	5.35	U
11097-69-1	Aroclor 1254	ND	35.7	3.90	U
11096-82-5	Aroclor 1260	ND	35.7	6.59	U
37324-23-5	Aroclor 1262	ND	35.7	4.53	U
11100-14-4	Aroclor 1268	ND	35.7	3.70	U
1336-36-3	PCBs, Total	ND	35.7	3.17	U

Results Summary
Form 1
Polychlorinated Biphenyls by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-06	**Date Collected**	: 10/11/21 12:55
Client ID	: SB006_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 15:53
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8082A	**Dilution Factor**	: 1
Lab File ID	: 19211013a-25	**Analyst**	: JM
Sample Amount	: 15.27 g	**Instrument ID**	: PEST19
Extraction Method	: EPA 3546	**GC Column**	: CLP-Pesticide
Extract Volume	: 1000 uL	**%Solids**	: 92
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
12674-11-2	Aroclor 1016	ND	35.6	3.16	U
11104-28-2	Aroclor 1221	ND	35.6	3.56	U
11141-16-5	Aroclor 1232	ND	35.6	7.54	U
53469-21-9	Aroclor 1242	ND	35.6	4.79	U
12672-29-6	Aroclor 1248	ND	35.6	5.33	U
11097-69-1	Aroclor 1254	ND	35.6	3.89	U
11096-82-5	Aroclor 1260	ND	35.6	6.57	U
37324-23-5	Aroclor 1262	ND	35.6	4.52	U
11100-14-4	Aroclor 1268	ND	35.6	3.68	U
1336-36-3	PCBs, Total	ND	35.6	3.16	U

Results Summary
Form 1
Polychlorinated Biphenyls by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-07	**Date Collected**	: 10/11/21 13:20
Client ID	: SB007_5-7	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 16:00
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8082A	**Dilution Factor**	: 1
Lab File ID	: 19211013a-26	**Analyst**	: JM
Sample Amount	: 15.11 g	**Instrument ID**	: PEST19
Extraction Method	: EPA 3546	**GC Column**	: CLP-Pesticide
Extract Volume	: 1000 uL	**%Solids**	: 99
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
12674-11-2	Aroclor 1016	ND	33.4	2.96	U
11104-28-2	Aroclor 1221	ND	33.4	3.34	U
11141-16-5	Aroclor 1232	ND	33.4	7.07	U
53469-21-9	Aroclor 1242	ND	33.4	4.50	U
12672-29-6	Aroclor 1248	ND	33.4	5.00	U
11097-69-1	Aroclor 1254	ND	33.4	3.65	U
11096-82-5	Aroclor 1260	ND	33.4	6.16	U
37324-23-5	Aroclor 1262	ND	33.4	4.24	U
11100-14-4	Aroclor 1268	ND	33.4	3.46	U
1336-36-3	PCBs, Total	ND	33.4	2.96	U

Results Summary
Form 1
Polychlorinated Biphenyls by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-08	**Date Collected**	: 10/11/21 13:45
Client ID	: SB008_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 16:07
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8082A	**Dilution Factor**	: 1
Lab File ID	: 19211013a-27	**Analyst**	: JM
Sample Amount	: 15.28 g	**Instrument ID**	: PEST19
Extraction Method	: EPA 3546	**GC Column**	: CLP-Pesticide
Extract Volume	: 1000 uL	**%Solids**	: 84
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
12674-11-2	Aroclor 1016	ND	39.0	3.46	U
11104-28-2	Aroclor 1221	ND	39.0	3.91	U
11141-16-5	Aroclor 1232	ND	39.0	8.27	U
53469-21-9	Aroclor 1242	ND	39.0	5.26	U
11097-69-1	Aroclor 1254	ND	39.0	4.27	U
11096-82-5	Aroclor 1260	ND	39.0	7.21	U
37324-23-5	Aroclor 1262	ND	39.0	4.95	U
11100-14-4	Aroclor 1268	ND	39.0	4.04	U

Results Summary
Form 1
Polychlorinated Biphenyls by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-08	**Date Collected**	: 10/11/21 13:45
Client ID	: SB008_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 16:07
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8082A	**Dilution Factor**	: 1
Lab File ID	: 19211013a-27	**Analyst**	: JM
Sample Amount	: 15.28 g	**Instrument ID**	: PEST19
Extraction Method	: EPA 3546	**GC Column**	: CLP-PesticideII
Extract Volume	: 1000 uL	**%Solids**	: 84
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
12672-29-6	Aroclor 1248	ND	39.0	5.85	U
1336-36-3	PCBs, Total	ND	39.0	3.46	U

Results Summary
Form 1
Polychlorinated Biphenyls by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-09	**Date Collected**	: 10/11/21 14:05
Client ID	: SB009_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 16:14
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8082A	**Dilution Factor**	: 1
Lab File ID	: 19211013a-28	**Analyst**	: JM
Sample Amount	: 15.44 g	**Instrument ID**	: PEST19
Extraction Method	: EPA 3546	**GC Column**	: CLP-Pesticide
Extract Volume	: 1000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
12674-11-2	Aroclor 1016	ND	35.7	3.17	U
11104-28-2	Aroclor 1221	ND	35.7	3.58	U
11141-16-5	Aroclor 1232	ND	35.7	7.58	U
53469-21-9	Aroclor 1242	ND	35.7	4.82	U
12672-29-6	Aroclor 1248	ND	35.7	5.36	U
11097-69-1	Aroclor 1254	ND	35.7	3.91	U
37324-23-5	Aroclor 1262	ND	35.7	4.54	U
11100-14-4	Aroclor 1268	ND	35.7	3.70	U

Results Summary
Form 1
Polychlorinated Biphenyls by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-09	**Date Collected**	: 10/11/21 14:05
Client ID	: SB009_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 16:14
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8082A	**Dilution Factor**	: 1
Lab File ID	: 19211013a-28	**Analyst**	: JM
Sample Amount	: 15.44 g	**Instrument ID**	: PEST19
Extraction Method	: EPA 3546	**GC Column**	: CLP-PesticideII
Extract Volume	: 1000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
11096-82-5	Aroclor 1260	77.0	35.7	6.60	
1336-36-3	PCBs, Total	77.0	35.7	3.17	

Results Summary
Form 1
Polychlorinated Biphenyls by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-10	**Date Collected**	: 10/11/21 14:25
Client ID	: SB010_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/13/21 16:22
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8082A	**Dilution Factor**	: 1
Lab File ID	: 19211013a-29	**Analyst**	: JM
Sample Amount	: 15.46 g	**Instrument ID**	: PEST19
Extraction Method	: EPA 3546	**GC Column**	: CLP-Pesticide
Extract Volume	: 1000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
12674-11-2	Aroclor 1016	ND	35.4	3.14	U
11104-28-2	Aroclor 1221	ND	35.4	3.55	U
11141-16-5	Aroclor 1232	ND	35.4	7.51	U
53469-21-9	Aroclor 1242	ND	35.4	4.78	U
12672-29-6	Aroclor 1248	ND	35.4	5.31	U
11097-69-1	Aroclor 1254	ND	35.4	3.88	U
11096-82-5	Aroclor 1260	ND	35.4	6.55	U
37324-23-5	Aroclor 1262	ND	35.4	4.50	U
11100-14-4	Aroclor 1268	22.1	35.4	3.67	J
1336-36-3	PCBs, Total	22.1	35.4	3.14	J

Results Summary
Form 1
Polychlorinated Biphenyls by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: WG1557739-1	**Date Collected**	: NA
Client ID	: WG1557739-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/13/21 14:56
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8082A	**Dilution Factor**	: 1
Lab File ID	: 19211013a-17	**Analyst**	: CW
Sample Amount	: 15.25 g	**Instrument ID**	: PEST19
Extraction Method	: EPA 3546	**GC Column**	: CLP-Pesticide
Extract Volume	: 1000 uL	**%Solids**	: NA
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
12674-11-2	Aroclor 1016	ND	32.8	2.91	U
11104-28-2	Aroclor 1221	ND	32.8	3.28	U
11141-16-5	Aroclor 1232	ND	32.8	6.95	U
53469-21-9	Aroclor 1242	ND	32.8	4.42	U
12672-29-6	Aroclor 1248	ND	32.8	4.92	U
11097-69-1	Aroclor 1254	ND	32.8	3.59	U
11096-82-5	Aroclor 1260	ND	32.8	6.06	U
37324-23-5	Aroclor 1262	ND	32.8	4.16	U
11100-14-4	Aroclor 1268	ND	32.8	3.40	U
1336-36-3	PCBs, Total	ND	32.8	2.91	U

GC Extractable Analysis
Pesticides

Pesticide Sample Data

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-01	**Date Collected**	: 10/11/21 11:10
Client ID	: SB001_0-2	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/16/21 15:47
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 10211016a-29	**Analyst**	: SDC
Sample Amount	: 15.09 g	**Instrument ID**	: PEST10
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticides
Extract Volume	: 1000 uL	**%Solids**	: 94
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
319-86-8	Delta-BHC	ND	1.69	0.331	U
58-89-9	Lindane	ND	0.703	0.314	U
319-84-6	Alpha-BHC	ND	0.703	0.200	U
319-85-7	Beta-BHC	ND	1.69	0.640	U
76-44-8	Heptachlor	ND	0.844	0.378	U
309-00-2	Aldrin	ND	1.69	0.594	U
1024-57-3	Heptachlor epoxide	ND	3.16	0.950	U
7421-93-4	Endrin aldehyde	ND	2.11	0.739	U
53494-70-5	Endrin ketone	ND	1.69	0.435	U
72-55-9	4,4'-DDE	87.3	1.69	0.390	
959-98-8	Endosulfan I	ND	1.69	0.399	U
33213-65-9	Endosulfan II	1.26	1.69	0.564	J
8001-35-2	Toxaphene	ND	31.6	8.86	U
5103-71-9	cis-Chlordane	ND	2.11	0.588	U
57-74-9	Chlordane	ND	14.1	5.59	U

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-01	**Date Collected**	: 10/11/21 11:10
Client ID	: SB001_0-2	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/16/21 15:47
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 10211016a-29	**Analyst**	: SDC
Sample Amount	: 15.09 g	**Instrument ID**	: PEST10
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticidesII
Extract Volume	: 1000 uL	**%Solids**	: 94
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
72-20-8	Endrin	1.13	0.703	0.288	
60-57-1	Dieldrin	9.69	1.06	0.528	
72-54-8	4,4'-DDD	2.50	1.69	0.602	
50-29-3	4,4'-DDT	234	3.16	1.36	E
1031-07-8	Endosulfan sulfate	4.93	0.703	0.335	
72-43-5	Methoxychlor	1.88	3.16	0.985	JIP
5103-74-2	trans-Chlordane	1.29	2.11	0.557	JP

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-01D	**Date Collected**	: 10/11/21 11:10
Client ID	: SB001_0-2	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 17:14
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 5
Lab File ID	: 10211022a-35	**Analyst**	: EJL
Sample Amount	: 15.09 g	**Instrument ID**	: PEST10
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticidesII
Extract Volume	: 1000 uL	**%Solids**	: 94
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
50-29-3	4,4'-DDT	233	15.8	6.79	

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-02	Date Collected	: 10/11/21 11:30
Client ID	: SB002_3-5	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/16/21 15:58
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8081B	Dilution Factor	: 1
Lab File ID	: 10211016a-30	Analyst	: SDC
Sample Amount	: 15.49 g	Instrument ID	: PEST10
Extraction Method	: EPA 3546	GC Column	: CLPPesticides
Extract Volume	: 1000 uL	%Solids	: 98
GPC Cleanup	: N	Injection Volume	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
319-86-8	Delta-BHC	ND	1.58	0.310	U
58-89-9	Lindane	ND	0.660	0.295	U
319-84-6	Alpha-BHC	ND	0.660	0.187	U
319-85-7	Beta-BHC	ND	1.58	0.601	U
76-44-8	Heptachlor	ND	0.792	0.355	U
309-00-2	Aldrin	ND	1.58	0.558	U
1024-57-3	Heptachlor epoxide	ND	2.97	0.891	U
72-20-8	Endrin	ND	0.660	0.271	U
7421-93-4	Endrin aldehyde	ND	1.98	0.693	U
53494-70-5	Endrin ketone	1.27	1.58	0.408	JIP
60-57-1	Dieldrin	ND	0.990	0.495	U
72-55-9	4,4'-DDE	ND	1.58	0.366	U
72-54-8	4,4'-DDD	ND	1.58	0.565	U
50-29-3	4,4'-DDT	ND	2.97	1.27	U
959-98-8	Endosulfan I	ND	1.58	0.374	U
33213-65-9	Endosulfan II	ND	1.58	0.529	U
1031-07-8	Endosulfan sulfate	ND	0.660	0.314	U
72-43-5	Methoxychlor	ND	2.97	0.924	U
8001-35-2	Toxaphene	ND	29.7	8.32	U
5103-71-9	cis-Chlordane	ND	1.98	0.552	U

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-02	**Date Collected**	: 10/11/21 11:30
Client ID	: SB002_3-5	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/16/21 15:58
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 10211016a-30	**Analyst**	: SDC
Sample Amount	: 15.49 g	**Instrument ID**	: PEST10
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticides
Extract Volume	: 1000 uL	**%Solids**	: 98
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
5103-74-2	trans-Chlordane	ND	1.98	0.523	U
57-74-9	Chlordane	ND	13.2	5.25	U

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-03	**Date Collected**	: 10/11/21 11:50
Client ID	: SB003_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/16/21 16:09
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 10211016a-31	**Analyst**	: SDC
Sample Amount	: 15.67 g	**Instrument ID**	: PEST10
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticides
Extract Volume	: 1000 uL	**%Solids**	: 89
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
319-86-8	Delta-BHC	ND	1.72	0.337	U
58-89-9	Lindane	ND	0.718	0.321	U
319-84-6	Alpha-BHC	ND	0.718	0.204	U
319-85-7	Beta-BHC	ND	1.72	0.653	U
76-44-8	Heptachlor	ND	0.861	0.386	U
309-00-2	Aldrin	ND	1.72	0.606	U
1024-57-3	Heptachlor epoxide	ND	3.23	0.969	U
72-20-8	Endrin	ND	0.718	0.294	U
7421-93-4	Endrin aldehyde	ND	2.15	0.754	U
53494-70-5	Endrin ketone	1.95	1.72	0.444	IP
60-57-1	Dieldrin	ND	1.08	0.538	U
72-54-8	4,4'-DDD	ND	1.72	0.614	U
959-98-8	Endosulfan I	ND	1.72	0.407	U
33213-65-9	Endosulfan II	ND	1.72	0.576	U
72-43-5	Methoxychlor	ND	3.23	1.00	U
8001-35-2	Toxaphene	ND	32.3	9.04	U
5103-71-9	cis-Chlordane	ND	2.15	0.600	U
5103-74-2	trans-Chlordane	ND	2.15	0.568	U
57-74-9	Chlordane	ND	14.4	5.71	U

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-03	**Date Collected**	: 10/11/21 11:50
Client ID	: SB003_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/16/21 16:09
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 10211016a-31	**Analyst**	: SDC
Sample Amount	: 15.67 g	**Instrument ID**	: PEST10
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticidesII
Extract Volume	: 1000 uL	**%Solids**	: 89
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
72-55-9	4,4'-DDE	3.54	1.72	0.398	
50-29-3	4,4'-DDT	2.65	3.23	1.38	J
1031-07-8	Endosulfan sulfate	ND	0.718	0.342	U

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-04	**Date Collected**	: 10/11/21 12:15
Client ID	: SB004_4-6	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/16/21 16:20
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 10211016a-32	**Analyst**	: SDC
Sample Amount	: 15.13 g	**Instrument ID**	: PEST10
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticides
Extract Volume	: 1000 uL	**%Solids**	: 96
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
319-86-8	Delta-BHC	ND	1.65	0.324	U
58-89-9	Lindane	ND	0.689	0.308	U
319-84-6	Alpha-BHC	ND	0.689	0.196	U
319-85-7	Beta-BHC	ND	1.65	0.627	U
76-44-8	Heptachlor	ND	0.827	0.371	U
309-00-2	Aldrin	ND	1.65	0.582	U
1024-57-3	Heptachlor epoxide	ND	3.10	0.930	U
7421-93-4	Endrin aldehyde	ND	2.07	0.724	U
53494-70-5	Endrin ketone	2.56	1.65	0.426	IP
60-57-1	Dieldrin	2.28	1.03	0.517	
72-55-9	4,4'-DDE	46.5	1.65	0.382	
959-98-8	Endosulfan I	ND	1.65	0.391	U
33213-65-9	Endosulfan II	1.16	1.65	0.553	JP
8001-35-2	Toxaphene	ND	31.0	8.68	U
5103-71-9	cis-Chlordane	ND	2.07	0.576	U
5103-74-2	trans-Chlordane	ND	2.07	0.546	U
57-74-9	Chlordane	ND	13.8	5.48	U

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-04	**Date Collected**	: 10/11/21 12:15
Client ID	: SB004_4-6	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/16/21 16:20
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 10211016a-32	**Analyst**	: SDC
Sample Amount	: 15.13 g	**Instrument ID**	: PEST10
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticidesII
Extract Volume	: 1000 uL	**%Solids**	: 96
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
72-20-8	Endrin	0.712	0.689	0.282	P
72-54-8	4,4'-DDD	1.28	1.65	0.590	J
50-29-3	4,4'-DDT	89.6	3.10	1.33	
1031-07-8	Endosulfan sulfate	3.03	0.689	0.328	
72-43-5	Methoxychlor	ND	3.10	0.965	UIP

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-05	Date Collected	: 10/11/21 12:35
Client ID	: SB005_1-3	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/16/21 16:31
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8081B	Dilution Factor	: 1
Lab File ID	: 10211016a-33	Analyst	: SDC
Sample Amount	: 15.46 g	Instrument ID	: PEST10
Extraction Method	: EPA 3546	GC Column	: CLPPesticides
Extract Volume	: 1000 uL	%Solids	: 91
GPC Cleanup	: N	Injection Volume	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
319-86-8	Delta-BHC	ND	1.70	0.333	U
58-89-9	Lindane	ND	0.709	0.317	U
319-84-6	Alpha-BHC	ND	0.709	0.201	U
319-85-7	Beta-BHC	ND	1.70	0.645	U
76-44-8	Heptachlor	ND	0.851	0.382	U
309-00-2	Aldrin	ND	1.70	0.599	U
1024-57-3	Heptachlor epoxide	ND	3.19	0.957	U
7421-93-4	Endrin aldehyde	ND	2.13	0.745	U
53494-70-5	Endrin ketone	2.55	1.70	0.438	IP
60-57-1	Dieldrin	8.88	1.06	0.532	
959-98-8	Endosulfan I	ND	1.70	0.402	U
33213-65-9	Endosulfan II	0.642	1.70	0.569	J
8001-35-2	Toxaphene	ND	31.9	8.94	U
5103-71-9	cis-Chlordane	ND	2.13	0.593	U
5103-74-2	trans-Chlordane	ND	2.13	0.562	U
57-74-9	Chlordane	ND	14.2	5.64	U

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-05	**Date Collected**	: 10/11/21 12:35
Client ID	: SB005_1-3	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/16/21 16:31
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 10211016a-33	**Analyst**	: SDC
Sample Amount	: 15.46 g	**Instrument ID**	: PEST10
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticidesII
Extract Volume	: 1000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
72-20-8	Endrin	0.865	0.709	0.291	
72-55-9	4,4'-DDE	108	1.70	0.394	
72-54-8	4,4'-DDD	3.09	1.70	0.607	
50-29-3	4,4'-DDT	145	3.19	1.37	E
1031-07-8	Endosulfan sulfate	4.40	0.709	0.338	
72-43-5	Methoxychlor	ND	3.19	0.993	UIP

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-05D	**Date Collected**	: 10/11/21 12:35
Client ID	: SB005_1-3	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 17:03
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 2
Lab File ID	: 10211022a-34	**Analyst**	: EJL
Sample Amount	: 15.46 g	**Instrument ID**	: PEST10
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticidesII
Extract Volume	: 1000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
50-29-3	4,4'-DDT	131	6.38	2.74	

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-06	**Date Collected**	: 10/11/21 12:55
Client ID	: SB006_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/16/21 16:42
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 10211016a-34	**Analyst**	: SDC
Sample Amount	: 15.79 g	**Instrument ID**	: PEST10
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticides
Extract Volume	: 1000 uL	**%Solids**	: 92
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
319-86-8	Delta-BHC	ND	1.65	0.323	U
58-89-9	Lindane	ND	0.688	0.307	U
319-84-6	Alpha-BHC	ND	0.688	0.195	U
319-85-7	Beta-BHC	ND	1.65	0.626	U
76-44-8	Heptachlor	ND	0.825	0.370	U
309-00-2	Aldrin	ND	1.65	0.581	U
1024-57-3	Heptachlor epoxide	ND	3.09	0.928	U
72-20-8	Endrin	ND	0.688	0.282	U
7421-93-4	Endrin aldehyde	ND	2.06	0.722	U
53494-70-5	Endrin ketone	1.01	1.65	0.425	JIP
60-57-1	Dieldrin	0.844	1.03	0.516	J
959-98-8	Endosulfan I	ND	1.65	0.390	U
33213-65-9	Endosulfan II	ND	1.65	0.551	U
72-43-5	Methoxychlor	ND	3.09	0.963	U
8001-35-2	Toxaphene	ND	30.9	8.66	U
5103-71-9	cis-Chlordane	ND	2.06	0.575	U
5103-74-2	trans-Chlordane	ND	2.06	0.545	U
57-74-9	Chlordane	ND	13.8	5.47	U

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-06	**Date Collected**	: 10/11/21 12:55
Client ID	: SB006_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/16/21 16:42
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 10211016a-34	**Analyst**	: SDC
Sample Amount	: 15.79 g	**Instrument ID**	: PEST10
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticidesII
Extract Volume	: 1000 uL	**%Solids**	: 92
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
72-55-9	4,4'-DDE	6.89	1.65	0.382	
72-54-8	4,4'-DDD	ND	1.65	0.589	U
50-29-3	4,4'-DDT	13.0	3.09	1.33	
1031-07-8	Endosulfan sulfate	0.725	0.688	0.327	P

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-07	Date Collected	: 10/11/21 13:20
Client ID	: SB007_5-7	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/16/21 16:53
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8081B	Dilution Factor	: 1
Lab File ID	: 10211016a-35	Analyst	: SDC
Sample Amount	: 15.26 g	Instrument ID	: PEST10
Extraction Method	: EPA 3546	GC Column	: CLPPesticides
Extract Volume	: 1000 uL	%Solids	: 99
GPC Cleanup	: N	Injection Volume	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
319-86-8	Delta-BHC	ND	1.58	0.310	U
58-89-9	Lindane	ND	0.660	0.295	U
319-84-6	Alpha-BHC	ND	0.660	0.188	U
319-85-7	Beta-BHC	ND	1.58	0.601	U
76-44-8	Heptachlor	ND	0.793	0.355	U
309-00-2	Aldrin	ND	1.58	0.558	U
1024-57-3	Heptachlor epoxide	ND	2.97	0.892	U
72-20-8	Endrin	ND	0.660	0.271	U
7421-93-4	Endrin aldehyde	ND	1.98	0.694	U
53494-70-5	Endrin ketone	0.894	1.58	0.408	JIP
60-57-1	Dieldrin	ND	0.991	0.495	U
959-98-8	Endosulfan I	ND	1.58	0.374	U
33213-65-9	Endosulfan II	ND	1.58	0.530	U
72-43-5	Methoxychlor	ND	2.97	0.925	U
8001-35-2	Toxaphene	ND	29.7	8.32	U
5103-71-9	cis-Chlordane	ND	1.98	0.552	U
5103-74-2	trans-Chlordane	ND	1.98	0.523	U
57-74-9	Chlordane	ND	13.2	5.25	U

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-07	**Date Collected**	: 10/11/21 13:20
Client ID	: SB007_5-7	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/16/21 16:53
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 10211016a-35	**Analyst**	: SDC
Sample Amount	: 15.26 g	**Instrument ID**	: PEST10
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticidesII
Extract Volume	: 1000 uL	**%Solids**	: 99
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
72-55-9	4,4'-DDE	2.35	1.58	0.367	
72-54-8	4,4'-DDD	ND	1.58	0.565	U
50-29-3	4,4'-DDT	5.87	2.97	1.27	
1031-07-8	Endosulfan sulfate	ND	0.660	0.314	U

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-08	Date Collected	: 10/11/21 13:45
Client ID	: SB008_6-8	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/16/21 17:04
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8081B	Dilution Factor	: 1
Lab File ID	: 10211016a-36	Analyst	: SDC
Sample Amount	: 15.93 g	Instrument ID	: PEST10
Extraction Method	: EPA 3546	GC Column	: CLPPesticides
Extract Volume	: 1000 uL	%Solids	: 84
GPC Cleanup	: N	Injection Volume	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
319-86-8	Delta-BHC	ND	1.80	0.352	U
58-89-9	Lindane	ND	0.748	0.334	U
319-84-6	Alpha-BHC	ND	0.748	0.212	U
319-85-7	Beta-BHC	ND	1.80	0.681	U
76-44-8	Heptachlor	ND	0.898	0.402	U
309-00-2	Aldrin	ND	1.80	0.632	U
1024-57-3	Heptachlor epoxide	ND	3.37	1.01	U
72-20-8	Endrin	ND	0.748	0.307	U
7421-93-4	Endrin aldehyde	ND	2.24	0.786	U
53494-70-5	Endrin ketone	1.26	1.80	0.462	JIP
60-57-1	Dieldrin	ND	1.12	0.561	U
72-55-9	4,4'-DDE	ND	1.80	0.415	U
72-54-8	4,4'-DDD	ND	1.80	0.640	U
50-29-3	4,4'-DDT	ND	3.37	1.44	U
959-98-8	Endosulfan I	ND	1.80	0.424	U
33213-65-9	Endosulfan II	ND	1.80	0.600	U
1031-07-8	Endosulfan sulfate	ND	0.748	0.356	U
72-43-5	Methoxychlor	ND	3.37	1.05	U
8001-35-2	Toxaphene	ND	33.7	9.43	U
5103-71-9	cis-Chlordane	ND	2.24	0.626	U

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-08	**Date Collected**	: 10/11/21 13:45
Client ID	: SB008_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/16/21 17:04
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 10211016a-36	**Analyst**	: SDC
Sample Amount	: 15.93 g	**Instrument ID**	: PEST10
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticides
Extract Volume	: 1000 uL	**%Solids**	: 84
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
5103-74-2	trans-Chlordane	ND	2.24	0.592	U
57-74-9	Chlordane	ND	15.0	5.95	U

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-09	**Date Collected**	: 10/11/21 14:05
Client ID	: SB009_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/16/21 17:15
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 10211016a-37	**Analyst**	: SDC
Sample Amount	: 15.38 g	**Instrument ID**	: PEST10
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticides
Extract Volume	: 1000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
319-86-8	Delta-BHC	ND	1.72	0.337	U
58-89-9	Lindane	ND	0.718	0.321	U
319-84-6	Alpha-BHC	ND	0.718	0.204	U
319-85-7	Beta-BHC	ND	1.72	0.653	U
72-20-8	Endrin	ND	0.718	0.294	U
7421-93-4	Endrin aldehyde	ND	2.15	0.754	U
53494-70-5	Endrin ketone	ND	1.72	0.444	U
959-98-8	Endosulfan I	ND	1.72	0.407	U
33213-65-9	Endosulfan II	ND	1.72	0.576	U
1031-07-8	Endosulfan sulfate	2.48	0.718	0.342	IP
72-43-5	Methoxychlor	ND	3.23	1.00	U
8001-35-2	Toxaphene	ND	32.3	9.04	U
5103-71-9	cis-Chlordane	22.6	2.15	0.600	

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-09	**Date Collected**	: 10/11/21 14:05
Client ID	: SB009_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/16/21 17:15
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 10211016a-37	**Analyst**	: SDC
Sample Amount	: 15.38 g	**Instrument ID**	: PEST10
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticidesII
Extract Volume	: 1000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
76-44-8	Heptachlor	0.863	0.861	0.386	
309-00-2	Aldrin	ND	1.72	0.606	U
1024-57-3	Heptachlor epoxide	2.05	3.23	0.969	JIP
60-57-1	Dieldrin	23.3	1.08	0.538	
72-55-9	4,4'-DDE	249	1.72	0.398	E
72-54-8	4,4'-DDD	51.3	1.72	0.614	
50-29-3	4,4'-DDT	202	3.23	1.38	E
5103-74-2	trans-Chlordane	21.2	2.15	0.568	
57-74-9	Chlordane	131	14.4	5.70	P

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-09D	**Date Collected**	: 10/11/21 14:05
Client ID	: SB009_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 17:25
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 5
Lab File ID	: 10211022a-36	**Analyst**	: EJL
Sample Amount	: 15.38 g	**Instrument ID**	: PEST10
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticidesII
Extract Volume	: 1000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
72-55-9	4,4'-DDE	243	8.61	1.99	
50-29-3	4,4'-DDT	203	16.1	6.92	

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: L2155380-10D	Date Collected	: 10/11/21 14:25
Client ID	: SB010_6-8	Date Received	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	Date Analyzed	: 10/22/21 18:07
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8081B	Dilution Factor	: 5
Lab File ID	: 11211022a-29	Analyst	: SDC
Sample Amount	: 15.72 g	Instrument ID	: PEST11
Extraction Method	: EPA 3546	GC Column	: CLPPesticidesII
Extract Volume	: 1000 uL	%Solids	: 91
GPC Cleanup	: N	Injection Volume	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
319-86-8	Delta-BHC	ND	8.36	1.64	U
58-89-9	Lindane	ND	3.48	1.56	U
319-84-6	Alpha-BHC	ND	3.48	0.989	U
319-85-7	Beta-BHC	ND	8.36	3.17	U
76-44-8	Heptachlor	ND	4.18	1.87	U
309-00-2	Aldrin	4.66	8.36	2.94	JP
1024-57-3	Heptachlor epoxide	ND	15.7	4.70	U
72-20-8	Endrin	ND	3.48	1.43	U
7421-93-4	Endrin aldehyde	ND	10.4	3.66	U
53494-70-5	Endrin ketone	4.69	8.36	2.15	JP
60-57-1	Dieldrin	32.7	5.22	2.61	P
72-55-9	4,4'-DDE	157	8.36	1.93	P
72-54-8	4,4'-DDD	249	8.36	2.98	P
50-29-3	4,4'-DDT	196	15.7	6.72	P
959-98-8	Endosulfan I	ND	8.36	1.98	U
33213-65-9	Endosulfan II	ND	8.36	2.79	U
1031-07-8	Endosulfan sulfate	46.2	3.48	1.66	P
72-43-5	Methoxychlor	ND	15.7	4.88	U
8001-35-2	Toxaphene	ND	157	43.9	U
5103-71-9	cis-Chlordane	25.8	10.4	2.91	P

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-10D	**Date Collected**	: 10/11/21 14:25
Client ID	: SB010_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/22/21 18:07
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 5
Lab File ID	: 11211022a-29	**Analyst**	: SDC
Sample Amount	: 15.72 g	**Instrument ID**	: PEST11
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticidesII
Extract Volume	: 1000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
5103-74-2	trans-Chlordane	22.4	10.4	2.76	P
57-74-9	Chlordane	ND	69.7	27.7	U

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: WG1557748-1	Date Collected	: NA
Client ID	: WG1557748-1BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 10/22/21 12:31
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8081B	Dilution Factor	: 1
Lab File ID	: 11211022a-10	Analyst	: SDC
Sample Amount	: 15.71 g	Instrument ID	: PEST11
Extraction Method	: EPA 3546	GC Column	: CLPPesticides
Extract Volume	: 1000 uL	%Solids	: NA
GPC Cleanup	: N	Injection Volume	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
319-86-8	Delta-BHC	ND	1.53	0.299	U
58-89-9	Lindane	ND	0.636	0.284	U
319-84-6	Alpha-BHC	ND	0.636	0.181	U
319-85-7	Beta-BHC	ND	1.53	0.579	U
76-44-8	Heptachlor	ND	0.764	0.342	U
309-00-2	Aldrin	ND	1.53	0.538	U
1024-57-3	Heptachlor epoxide	ND	2.86	0.859	U
72-20-8	Endrin	ND	0.636	0.261	U
7421-93-4	Endrin aldehyde	ND	1.91	0.668	U
53494-70-5	Endrin ketone	ND	1.53	0.393	U
60-57-1	Dieldrin	ND	0.955	0.477	U
72-55-9	4,4'-DDE	ND	1.53	0.353	U
72-54-8	4,4'-DDD	ND	1.53	0.545	U
50-29-3	4,4'-DDT	ND	2.86	1.23	U
959-98-8	Endosulfan I	ND	1.53	0.361	U
33213-65-9	Endosulfan II	ND	1.53	0.510	U
1031-07-8	Endosulfan sulfate	ND	0.636	0.303	U
72-43-5	Methoxychlor	ND	2.86	0.891	U
8001-35-2	Toxaphene	ND	28.6	8.02	U
5103-71-9	cis-Chlordane	ND	1.91	0.532	U
5103-74-2	trans-Chlordane	ND	1.91	0.504	U

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: WG1557748-1	**Date Collected**	: NA
Client ID	: WG1557748-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/22/21 12:31
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 11211022a-10	**Analyst**	: SDC
Sample Amount	: 15.71 g	**Instrument ID**	: PEST11
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticides
Extract Volume	: 1000 uL	**%Solids**	: NA
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
57-74-9	Chlordane	ND	12.7	5.06	U

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: WG1562633-1	Date Collected	: NA
Client ID	: WG1562633-1BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 10/22/21 17:23
Sample Matrix	: SOIL	Date Extracted	: 10/12/21
Analytical Method	: 1,8081B	Dilution Factor	: 1
Lab File ID	: 11211022a-25	Analyst	: SDC
Sample Amount	: 15.71 g	Instrument ID	: PEST11
Extraction Method	: EPA 3546	GC Column	: CLPPesticides
Extract Volume	: 1000 uL	%Solids	: NA
GPC Cleanup	: N	Injection Volume	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
319-86-8	Delta-BHC	ND	1.53	0.299	U
58-89-9	Lindane	ND	0.636	0.284	U
319-84-6	Alpha-BHC	ND	0.636	0.181	U
319-85-7	Beta-BHC	ND	1.53	0.579	U
76-44-8	Heptachlor	ND	0.764	0.342	U
309-00-2	Aldrin	ND	1.53	0.538	U
1024-57-3	Heptachlor epoxide	ND	2.86	0.859	U
72-20-8	Endrin	ND	0.636	0.261	U
7421-93-4	Endrin aldehyde	ND	1.91	0.668	U
53494-70-5	Endrin ketone	ND	1.53	0.393	U
60-57-1	Dieldrin	ND	0.955	0.477	U
72-55-9	4,4'-DDE	ND	1.53	0.353	U
72-54-8	4,4'-DDD	ND	1.53	0.545	U
50-29-3	4,4'-DDT	ND	2.86	1.23	U
959-98-8	Endosulfan I	ND	1.53	0.361	U
33213-65-9	Endosulfan II	ND	1.53	0.510	U
1031-07-8	Endosulfan sulfate	ND	0.636	0.303	U
72-43-5	Methoxychlor	ND	2.86	0.891	U
8001-35-2	Toxaphene	ND	28.6	8.02	U
5103-71-9	cis-Chlordane	ND	1.91	0.532	U
5103-74-2	trans-Chlordane	ND	1.91	0.504	U

Results Summary
Form 1
Organochlorine Pesticides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: WG1562633-1	**Date Collected**	: NA
Client ID	: WG1562633-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/22/21 17:23
Sample Matrix	: SOIL	**Date Extracted**	: 10/12/21
Analytical Method	: 1,8081B	**Dilution Factor**	: 1
Lab File ID	: 11211022a-25	**Analyst**	: SDC
Sample Amount	: 15.71 g	**Instrument ID**	: PEST11
Extraction Method	: EPA 3546	**GC Column**	: CLPPesticides
Extract Volume	: 1000 uL	**%Solids**	: NA
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: Y		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
57-74-9	Chlordane	ND	12.7	5.06	U

GC Extractable Analysis
Herbicides

Herbicide Sample Data

Results Summary
Form 1
Chlorinated Herbicides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-01	**Date Collected**	: 10/11/21 11:10
Client ID	: SB001_0-2	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/14/21 17:33
Sample Matrix	: SOIL	**Date Extracted**	: 10/13/21
Analytical Method	: 1,8151A	**Dilution Factor**	: 1
Lab File ID	: 22211014a-21	**Analyst**	: AR
Sample Amount	: 30.52 g	**Instrument ID**	: PEST22
Extraction Method	: EPA 8151A	**GC Column**	: STX-CLP1
Extract Volume	: 10000 uL	**%Solids**	: 94
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
94-75-7	2,4-D	ND	174	11.0	U
93-76-5	2,4,5-T	ND	174	5.39	U
93-72-1	2,4,5-TP (Silvex)	ND	174	4.63	U

Results Summary
Form 1
Chlorinated Herbicides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-02	**Date Collected**	: 10/11/21 11:30
Client ID	: SB002_3-5	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/14/21 18:09
Sample Matrix	: SOIL	**Date Extracted**	: 10/13/21
Analytical Method	: 1,8151A	**Dilution Factor**	: 1
Lab File ID	: 22211014a-23	**Analyst**	: EJL
Sample Amount	: 30.02 g	**Instrument ID**	: PEST22
Extraction Method	: EPA 8151A	**GC Column**	: STX-CLP1
Extract Volume	: 10000 uL	**%Solids**	: 98
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
94-75-7	2,4-D	ND	170	10.7	U
93-76-5	2,4,5-T	ND	170	5.28	U
93-72-1	2,4,5-TP (Silvex)	ND	170	4.53	U

Results Summary
Form 1
Chlorinated Herbicides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-03	**Date Collected**	: 10/11/21 11:50
Client ID	: SB003_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/14/21 18:28
Sample Matrix	: SOIL	**Date Extracted**	: 10/13/21
Analytical Method	: 1,8151A	**Dilution Factor**	: 1
Lab File ID	: 22211014a-24	**Analyst**	: EJL
Sample Amount	: 30.2 g	**Instrument ID**	: PEST22
Extraction Method	: EPA 8151A	**GC Column**	: STX-CLP1
Extract Volume	: 10000 uL	**%Solids**	: 89
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
94-75-7	2,4-D	ND	186	11.7	U
93-76-5	2,4,5-T	ND	186	5.77	U
93-72-1	2,4,5-TP (Silvex)	ND	186	4.95	U

Results Summary
Form 1
Chlorinated Herbicides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-04	**Date Collected**	: 10/11/21 12:15
Client ID	: SB004_4-6	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/14/21 18:46
Sample Matrix	: SOIL	**Date Extracted**	: 10/13/21
Analytical Method	: 1,8151A	**Dilution Factor**	: 1
Lab File ID	: 22211014a-25	**Analyst**	: EJL
Sample Amount	: 30.78 g	**Instrument ID**	: PEST22
Extraction Method	: EPA 8151A	**GC Column**	: STX-CLP1
Extract Volume	: 10000 uL	**%Solids**	: 96
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
94-75-7	2,4-D	ND	169	10.7	U
93-76-5	2,4,5-T	ND	169	5.25	U
93-72-1	2,4,5-TP (Silvex)	ND	169	4.50	U

Results Summary
Form 1
Chlorinated Herbicides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-05	**Date Collected**	: 10/11/21 12:35
Client ID	: SB005_1-3	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/14/21 19:04
Sample Matrix	: SOIL	**Date Extracted**	: 10/13/21
Analytical Method	: 1,8151A	**Dilution Factor**	: 1
Lab File ID	: 22211014a-26	**Analyst**	: EJL
Sample Amount	: 30.32 g	**Instrument ID**	: PEST22
Extraction Method	: EPA 8151A	**GC Column**	: STX-CLP1
Extract Volume	: 10000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
94-75-7	2,4-D	ND	181	11.4	U
93-76-5	2,4,5-T	ND	181	5.60	U
93-72-1	2,4,5-TP (Silvex)	ND	181	4.81	U

Results Summary
Form 1
Chlorinated Herbicides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-06	**Date Collected**	: 10/11/21 12:55
Client ID	: SB006_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/14/21 19:22
Sample Matrix	: SOIL	**Date Extracted**	: 10/13/21
Analytical Method	: 1,8151A	**Dilution Factor**	: 1
Lab File ID	: 22211014a-27	**Analyst**	: EJL
Sample Amount	: 30.52 g	**Instrument ID**	: PEST22
Extraction Method	: EPA 8151A	**GC Column**	: STX-CLP1
Extract Volume	: 10000 uL	**%Solids**	: 92
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
94-75-7	2,4-D	ND	178	11.2	U
93-76-5	2,4,5-T	ND	178	5.51	U
93-72-1	2,4,5-TP (Silvex)	ND	178	4.73	U

Results Summary
Form 1
Chlorinated Herbicides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-07	**Date Collected**	: 10/11/21 13:20
Client ID	: SB007_5-7	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/14/21 19:40
Sample Matrix	: SOIL	**Date Extracted**	: 10/13/21
Analytical Method	: 1,8151A	**Dilution Factor**	: 1
Lab File ID	: 22211014a-28	**Analyst**	: EJL
Sample Amount	: 30.45 g	**Instrument ID**	: PEST22
Extraction Method	: EPA 8151A	**GC Column**	: STX-CLP1
Extract Volume	: 10000 uL	**%Solids**	: 99
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
94-75-7	2,4-D	ND	166	10.4	U
93-76-5	2,4,5-T	ND	166	5.13	U
93-72-1	2,4,5-TP (Silvex)	ND	166	4.40	U

Results Summary
Form 1
Chlorinated Herbicides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-08	**Date Collected**	: 10/11/21 13:45
Client ID	: SB008_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/14/21 19:59
Sample Matrix	: SOIL	**Date Extracted**	: 10/13/21
Analytical Method	: 1,8151A	**Dilution Factor**	: 1
Lab File ID	: 22211014a-29	**Analyst**	: EJL
Sample Amount	: 30.06 g	**Instrument ID**	: PEST22
Extraction Method	: EPA 8151A	**GC Column**	: STX-CLP1
Extract Volume	: 10000 uL	**%Solids**	: 84
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
94-75-7	2,4-D	ND	198	12.5	U
93-76-5	2,4,5-T	ND	198	6.14	U
93-72-1	2,4,5-TP (Silvex)	ND	198	5.27	U

Results Summary
Form 1
Chlorinated Herbicides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-09	**Date Collected**	: 10/11/21 14:05
Client ID	: SB009_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/14/21 20:17
Sample Matrix	: SOIL	**Date Extracted**	: 10/13/21
Analytical Method	: 1,8151A	**Dilution Factor**	: 1
Lab File ID	: 22211014a-30	**Analyst**	: EJL
Sample Amount	: 30.26 g	**Instrument ID**	: PEST22
Extraction Method	: EPA 8151A	**GC Column**	: STX-CLP1
Extract Volume	: 10000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
94-75-7	2,4-D	ND	182	11.5	U
93-76-5	2,4,5-T	ND	182	5.65	U
93-72-1	2,4,5-TP (Silvex)	ND	182	4.85	U

Results Summary
Form 1
Chlorinated Herbicides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-10	**Date Collected**	: 10/11/21 14:25
Client ID	: SB010_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/14/21 20:35
Sample Matrix	: SOIL	**Date Extracted**	: 10/13/21
Analytical Method	: 1,8151A	**Dilution Factor**	: 1
Lab File ID	: 22211014a-31	**Analyst**	: EJL
Sample Amount	: 30.25 g	**Instrument ID**	: PEST22
Extraction Method	: EPA 8151A	**GC Column**	: STX-CLP1
Extract Volume	: 10000 uL	**%Solids**	: 91
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
94-75-7	2,4-D	ND	181	11.4	U
93-76-5	2,4,5-T	ND	181	5.61	U
93-72-1	2,4,5-TP (Silvex)	ND	181	4.82	U

Results Summary
Form 1
Chlorinated Herbicides by GC

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: WG1558098-1	**Date Collected**	: NA
Client ID	: WG1558098-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/14/21 15:26
Sample Matrix	: SOIL	**Date Extracted**	: 10/13/21
Analytical Method	: 1,8151A	**Dilution Factor**	: 1
Lab File ID	: 22211014a-14	**Analyst**	: AR
Sample Amount	: 30.71 g	**Instrument ID**	: PEST22
Extraction Method	: EPA 8151A	**GC Column**	: STX-CLP1
Extract Volume	: 10000 uL	**%Solids**	: NA
GPC Cleanup	: N	**Injection Volume**	: 1 uL
Sulfur Cleanup	: N		

		ug/Kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
94-75-7	2,4-D	ND	163	10.2	U
93-76-5	2,4,5-T	ND	163	5.05	U
93-72-1	2,4,5-TP (Silvex)	ND	163	4.33	U

Metals

Inorganic Data
(ICP Analysis)

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-01	**Date Collected**	: 10/11/21 11:10
Client ID	: SB001_0-2	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/20/21 17:27
Sample Matrix	: SOIL	**Dilution Factor**	: 2
Analytical Method	: 1,6010D	**Analyst**	: SV
Lab File ID	: WG1560838.pdf	**Instrument ID**	: TRACE5
Sample Amount	: 1.313g	**%Solids**	: 94
Digestion Method	: EPA 3050B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	4260	8.08	2.18	
7440-36-0	Antimony, Total	ND	4.04	0.307	U
7440-38-2	Arsenic, Total	9.11	0.808	0.168	
7440-39-3	Barium, Total	7.14	0.808	0.141	
7440-41-7	Beryllium, Total	0.113	0.404	0.027	J
7440-43-9	Cadmium, Total	ND	0.808	0.079	U
7440-70-2	Calcium, Total	545	8.08	2.83	
7440-47-3	Chromium, Total	4.72	0.808	0.078	
7440-48-4	Cobalt, Total	0.760	1.62	0.134	J
7440-50-8	Copper, Total	7.96	0.808	0.208	
7439-89-6	Iron, Total	5560	4.04	0.730	
7439-92-1	Lead, Total	5.64	4.04	0.217	
7439-95-4	Magnesium, Total	453	8.08	1.24	
7439-96-5	Manganese, Total	18.3	0.808	0.128	
7440-02-0	Nickel, Total	1.51	2.02	0.196	J
7440-09-7	Potassium, Total	84.7	202	11.6	J
7782-49-2	Selenium, Total	0.251	1.62	0.208	J
7440-22-4	Silver, Total	ND	0.808	0.229	U
7440-23-5	Sodium, Total	3.06	162	2.55	J
7440-28-0	Thallium, Total	ND	1.62	0.255	U
7440-62-2	Vanadium, Total	7.66	0.808	0.164	
7440-66-6	Zinc, Total	6.10	4.04	0.237	

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-02	**Date Collected**	: 10/11/21 11:30
Client ID	: SB002_3-5	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/20/21 17:31
Sample Matrix	: SOIL	**Dilution Factor**	: 2
Analytical Method	: 1,6010D	**Analyst**	: DL
Lab File ID	: WG1560838.pdf	**Instrument ID**	: TRACE5
Sample Amount	: 1.3g	**%Solids**	: 98
Digestion Method	: EPA 3050B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	664	7.86	2.12	
7440-36-0	Antimony, Total	ND	3.93	0.299	U
7440-38-2	Arsenic, Total	2.38	0.786	0.164	
7440-39-3	Barium, Total	0.904	0.786	0.137	
7440-41-7	Beryllium, Total	ND	0.393	0.026	U
7440-43-9	Cadmium, Total	ND	0.786	0.077	U
7440-70-2	Calcium, Total	15.4	7.86	2.75	
7440-47-3	Chromium, Total	2.18	0.786	0.076	
7440-48-4	Cobalt, Total	0.197	1.57	0.130	J
7440-50-8	Copper, Total	0.794	0.786	0.203	
7439-89-6	Iron, Total	731	3.93	0.710	
7439-92-1	Lead, Total	0.645	3.93	0.211	J
7439-95-4	Magnesium, Total	55.0	7.86	1.21	
7439-96-5	Manganese, Total	3.78	0.786	0.125	
7440-02-0	Nickel, Total	0.315	1.97	0.190	J
7440-09-7	Potassium, Total	24.2	197	11.3	J
7782-49-2	Selenium, Total	ND	1.57	0.203	U
7440-22-4	Silver, Total	ND	0.786	0.222	U
7440-23-5	Sodium, Total	ND	157	2.48	U
7440-28-0	Thallium, Total	ND	1.57	0.248	U
7440-62-2	Vanadium, Total	1.28	0.786	0.160	
7440-66-6	Zinc, Total	1.20	3.93	0.230	J

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-03	**Date Collected**	: 10/11/21 11:50
Client ID	: SB003_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/20/21 17:35
Sample Matrix	: SOIL	**Dilution Factor**	: 2
Analytical Method	: 1,6010D	**Analyst**	: DL
Lab File ID	: WG1560838.pdf	**Instrument ID**	: TRACE5
Sample Amount	: 1.276g	**%Solids**	: 89
Digestion Method	: EPA 3050B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	9340	8.82	2.38	
7440-36-0	Antimony, Total	ND	4.41	0.335	U
7440-38-2	Arsenic, Total	6.00	0.882	0.183	
7440-39-3	Barium, Total	22.5	0.882	0.153	
7440-41-7	Beryllium, Total	0.238	0.441	0.029	J
7440-43-9	Cadmium, Total	ND	0.882	0.086	U
7440-70-2	Calcium, Total	79.7	8.82	3.08	
7440-47-3	Chromium, Total	8.49	0.882	0.085	
7440-48-4	Cobalt, Total	2.56	1.76	0.146	
7440-50-8	Copper, Total	4.71	0.882	0.227	
7439-89-6	Iron, Total	9850	4.41	0.796	
7439-92-1	Lead, Total	4.42	4.41	0.236	
7439-95-4	Magnesium, Total	909	8.82	1.36	
7439-96-5	Manganese, Total	56.3	0.882	0.140	
7440-02-0	Nickel, Total	4.32	2.20	0.213	
7440-09-7	Potassium, Total	140	220	12.7	J
7782-49-2	Selenium, Total	ND	1.76	0.227	U
7440-22-4	Silver, Total	ND	0.882	0.249	U
7440-23-5	Sodium, Total	5.52	176	2.78	J
7440-28-0	Thallium, Total	ND	1.76	0.278	U
7440-62-2	Vanadium, Total	12.9	0.882	0.179	
7440-66-6	Zinc, Total	13.1	4.41	0.258	

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-04	**Date Collected**	: 10/11/21 12:15
Client ID	: SB004_4-6	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/20/21 18:08
Sample Matrix	: SOIL	**Dilution Factor**	: 2
Analytical Method	: 1,6010D	**Analyst**	: DL
Lab File ID	: WG1560838.pdf	**Instrument ID**	: TRACE5
Sample Amount	: 1.268g	**%Solids**	: 96
Digestion Method	: EPA 3050B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	9350	8.22	2.22	
7440-36-0	Antimony, Total	ND	4.11	0.312	U
7440-38-2	Arsenic, Total	9.04	0.822	0.171	
7440-39-3	Barium, Total	14.8	0.822	0.143	
7440-41-7	Beryllium, Total	0.206	0.411	0.027	J
7440-43-9	Cadmium, Total	ND	0.822	0.081	U
7440-70-2	Calcium, Total	194	8.22	2.88	
7440-47-3	Chromium, Total	10.7	0.822	0.079	
7440-48-4	Cobalt, Total	3.67	1.64	0.136	
7440-50-8	Copper, Total	12.0	0.822	0.212	
7439-89-6	Iron, Total	10100	4.11	0.742	
7439-92-1	Lead, Total	8.78	4.11	0.220	
7439-95-4	Magnesium, Total	1040	8.22	1.27	
7439-96-5	Manganese, Total	84.0	0.822	0.131	
7440-02-0	Nickel, Total	5.19	2.06	0.199	
7440-09-7	Potassium, Total	200	206	11.8	J
7782-49-2	Selenium, Total	0.312	1.64	0.212	J
7440-22-4	Silver, Total	ND	0.822	0.233	U
7440-23-5	Sodium, Total	10.8	164	2.59	J
7440-28-0	Thallium, Total	ND	1.64	0.259	U
7440-62-2	Vanadium, Total	15.1	0.822	0.167	
7440-66-6	Zinc, Total	15.9	4.11	0.241	

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-05	**Date Collected**	: 10/11/21 12:35
Client ID	: SB005_1-3	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/20/21 18:12
Sample Matrix	: SOIL	**Dilution Factor**	: 2
Analytical Method	: 1,6010D	**Analyst**	: DL
Lab File ID	: WG1560838.pdf	**Instrument ID**	: TRACE5
Sample Amount	: 1.266g	**%Solids**	: 91
Digestion Method	: EPA 3050B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	10300	8.66	2.34	
7440-36-0	Antimony, Total	ND	4.33	0.329	U
7440-38-2	Arsenic, Total	5.81	0.866	0.180	
7440-39-3	Barium, Total	16.8	0.866	0.151	
7440-41-7	Beryllium, Total	0.286	0.433	0.029	J
7440-43-9	Cadmium, Total	ND	0.866	0.085	U
7440-70-2	Calcium, Total	78.1	8.66	3.03	
7440-47-3	Chromium, Total	10.4	0.866	0.083	
7440-48-4	Cobalt, Total	4.36	1.73	0.144	
7440-50-8	Copper, Total	7.91	0.866	0.223	
7439-89-6	Iron, Total	10200	4.33	0.782	
7439-92-1	Lead, Total	5.52	4.33	0.232	
7439-95-4	Magnesium, Total	1140	8.66	1.33	
7439-96-5	Manganese, Total	76.5	0.866	0.138	
7440-02-0	Nickel, Total	6.01	2.16	0.210	
7440-09-7	Potassium, Total	195	216	12.5	J
7782-49-2	Selenium, Total	0.407	1.73	0.223	J
7440-22-4	Silver, Total	ND	0.866	0.245	U
7440-23-5	Sodium, Total	9.57	173	2.73	J
7440-28-0	Thallium, Total	ND	1.73	0.273	U
7440-62-2	Vanadium, Total	14.9	0.866	0.176	
7440-66-6	Zinc, Total	14.7	4.33	0.254	

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-06	**Date Collected**	: 10/11/21 12:55
Client ID	: SB006_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/20/21 18:16
Sample Matrix	: SOIL	**Dilution Factor**	: 2
Analytical Method	: 1,6010D	**Analyst**	: DL
Lab File ID	: WG1560838.pdf	**Instrument ID**	: TRACE5
Sample Amount	: 1.278g	**%Solids**	: 92
Digestion Method	: EPA 3050B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	9090	8.50	2.29	
7440-36-0	Antimony, Total	ND	4.25	0.323	U
7440-38-2	Arsenic, Total	4.12	0.850	0.177	
7440-39-3	Barium, Total	17.2	0.850	0.148	
7440-41-7	Beryllium, Total	0.204	0.425	0.028	J
7440-43-9	Cadmium, Total	ND	0.850	0.083	U
7440-70-2	Calcium, Total	63.0	8.50	2.97	
7440-47-3	Chromium, Total	8.67	0.850	0.082	
7440-48-4	Cobalt, Total	3.01	1.70	0.141	
7440-50-8	Copper, Total	5.33	0.850	0.219	
7439-89-6	Iron, Total	8630	4.25	0.767	
7439-92-1	Lead, Total	4.28	4.25	0.228	
7439-95-4	Magnesium, Total	1030	8.50	1.31	
7439-96-5	Manganese, Total	62.7	0.850	0.135	
7440-02-0	Nickel, Total	4.77	2.12	0.206	
7440-09-7	Potassium, Total	172	212	12.2	J
7782-49-2	Selenium, Total	0.255	1.70	0.219	J
7440-22-4	Silver, Total	ND	0.850	0.240	U
7440-23-5	Sodium, Total	5.44	170	2.68	J
7440-28-0	Thallium, Total	ND	1.70	0.268	U
7440-62-2	Vanadium, Total	13.1	0.850	0.172	
7440-66-6	Zinc, Total	15.1	4.25	0.249	

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-07	**Date Collected**	: 10/11/21 13:20
Client ID	: SB007_5-7	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/20/21 18:20
Sample Matrix	: SOIL	**Dilution Factor**	: 2
Analytical Method	: 1,6010D	**Analyst**	: DL
Lab File ID	: WG1560838.pdf	**Instrument ID**	: TRACE5
Sample Amount	: 1.305g	**%Solids**	: 99
Digestion Method	: EPA 3050B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	1380	7.72	2.08	
7440-36-0	Antimony, Total	ND	3.86	0.294	U
7440-38-2	Arsenic, Total	1.04	0.772	0.161	
7440-39-3	Barium, Total	3.03	0.772	0.134	
7440-41-7	Beryllium, Total	0.085	0.386	0.026	J
7440-43-9	Cadmium, Total	ND	0.772	0.076	U
7440-70-2	Calcium, Total	29.1	7.72	2.70	
7440-47-3	Chromium, Total	3.76	0.772	0.074	
7440-48-4	Cobalt, Total	0.942	1.54	0.128	J
7440-50-8	Copper, Total	2.22	0.772	0.199	
7439-89-6	Iron, Total	4130	3.86	0.698	
7439-92-1	Lead, Total	1.24	3.86	0.207	J
7439-95-4	Magnesium, Total	168	7.72	1.19	
7439-96-5	Manganese, Total	32.8	0.772	0.123	
7440-02-0	Nickel, Total	0.803	1.93	0.187	J
7440-09-7	Potassium, Total	51.5	193	11.1	J
7782-49-2	Selenium, Total	ND	1.54	0.199	U
7440-22-4	Silver, Total	ND	0.772	0.219	U
7440-23-5	Sodium, Total	ND	154	2.43	U
7440-28-0	Thallium, Total	ND	1.54	0.243	U
7440-62-2	Vanadium, Total	3.69	0.772	0.157	
7440-66-6	Zinc, Total	2.81	3.86	0.226	J

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-08	**Date Collected**	: 10/11/21 13:45
Client ID	: SB008_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/20/21 22:22
Sample Matrix	: SOIL	**Dilution Factor**	: 10
Analytical Method	: 1,6010D	**Analyst**	: DL
Lab File ID	: WG1560838.pdf	**Instrument ID**	: TRACE5
Sample Amount	: 1.255g	**%Solids**	: 84
Digestion Method	: EPA 3050B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	14500	47.5	12.8	
7440-36-0	Antimony, Total	ND	23.7	1.80	U
7440-38-2	Arsenic, Total	2.04	4.75	0.988	J
7440-39-3	Barium, Total	35.8	4.75	0.826	
7440-41-7	Beryllium, Total	0.427	2.37	0.157	J
7440-43-9	Cadmium, Total	ND	4.75	0.465	U
7440-70-2	Calcium, Total	319	47.5	16.6	
7440-47-3	Chromium, Total	14.7	4.75	0.456	
7440-48-4	Cobalt, Total	4.42	9.50	0.788	J
7440-50-8	Copper, Total	7.69	4.75	1.22	
7439-89-6	Iron, Total	8780	23.7	4.29	
7439-92-1	Lead, Total	8.74	23.7	1.27	J
7439-95-4	Magnesium, Total	2520	47.5	7.31	
7439-96-5	Manganese, Total	95.8	4.75	0.755	
7440-02-0	Nickel, Total	7.69	11.9	1.15	J
7440-09-7	Potassium, Total	440	1190	68.4	J
7782-49-2	Selenium, Total	ND	9.50	1.22	U
7440-22-4	Silver, Total	ND	4.75	1.34	U
7440-23-5	Sodium, Total	ND	950	15.0	U
7440-28-0	Thallium, Total	ND	9.50	1.50	U
7440-62-2	Vanadium, Total	20.2	4.75	0.964	
7440-66-6	Zinc, Total	26.5	23.7	1.39	

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-09	**Date Collected**	: 10/11/21 14:05
Client ID	: SB009_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/20/21 18:28
Sample Matrix	: SOIL	**Dilution Factor**	: 2
Analytical Method	: 1,6010D	**Analyst**	: DL
Lab File ID	: WG1560838.pdf	**Instrument ID**	: TRACE5
Sample Amount	: 1.304g	**%Solids**	: 91
Digestion Method	: EPA 3050B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	6070	8.46	2.28	
7440-36-0	Antimony, Total	ND	4.23	0.322	U
7440-38-2	Arsenic, Total	8.68	0.846	0.176	
7440-39-3	Barium, Total	127	0.846	0.147	
7440-41-7	Beryllium, Total	0.254	0.423	0.028	J
7440-43-9	Cadmium, Total	8.02	0.846	0.083	
7440-70-2	Calcium, Total	10300	8.46	2.96	
7440-47-3	Chromium, Total	13.5	0.846	0.081	
7440-48-4	Cobalt, Total	4.18	1.69	0.140	
7440-50-8	Copper, Total	46.1	0.846	0.218	
7439-89-6	Iron, Total	11200	4.23	0.764	
7439-92-1	Lead, Total	127	4.23	0.227	
7439-95-4	Magnesium, Total	2720	8.46	1.30	
7439-96-5	Manganese, Total	190	0.846	0.134	
7440-02-0	Nickel, Total	11.2	2.12	0.205	
7440-09-7	Potassium, Total	586	212	12.2	
7782-49-2	Selenium, Total	ND	1.69	0.218	U
7440-22-4	Silver, Total	ND	0.846	0.240	U
7440-23-5	Sodium, Total	53.3	169	2.67	J
7440-28-0	Thallium, Total	ND	1.69	0.267	U
7440-62-2	Vanadium, Total	18.3	0.846	0.172	
7440-66-6	Zinc, Total	130	4.23	0.248	

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-10	**Date Collected**	: 10/11/21 14:25
Client ID	: SB010_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/20/21 19:50
Sample Matrix	: SOIL	**Dilution Factor**	: 2
Analytical Method	: 1,6010D	**Analyst**	: DL
Lab File ID	: WG1560838.pdf	**Instrument ID**	: TRACE5
Sample Amount	: 1.26g	**%Solids**	: 91
Digestion Method	: EPA 3050B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7429-90-5	Aluminum, Total	7380	8.69	2.35	
7440-36-0	Antimony, Total	ND	4.35	0.330	U
7440-38-2	Arsenic, Total	30.8	0.869	0.181	
7440-39-3	Barium, Total	37.0	0.869	0.151	
7440-41-7	Beryllium, Total	0.200	0.435	0.029	J
7440-43-9	Cadmium, Total	ND	0.869	0.085	U
7440-70-2	Calcium, Total	5210	8.69	3.04	
7440-47-3	Chromium, Total	9.99	0.869	0.083	
7440-48-4	Cobalt, Total	2.07	1.74	0.144	
7440-50-8	Copper, Total	35.9	0.869	0.224	
7439-89-6	Iron, Total	8600	4.35	0.785	
7439-92-1	Lead, Total	36.6	4.35	0.233	
7439-95-4	Magnesium, Total	1550	8.69	1.34	
7439-96-5	Manganese, Total	79.8	0.869	0.138	
7440-02-0	Nickel, Total	5.37	2.17	0.210	
7440-09-7	Potassium, Total	364	217	12.5	
7782-49-2	Selenium, Total	0.400	1.74	0.224	J
7440-22-4	Silver, Total	ND	0.869	0.246	U
7440-23-5	Sodium, Total	106	174	2.74	J
7440-28-0	Thallium, Total	ND	1.74	0.274	U
7440-62-2	Vanadium, Total	15.0	0.869	0.176	
7440-66-6	Zinc, Total	37.7	4.35	0.255	

Form 1
METALS

Client	: P. W. Grosser	Lab Number	: L2155380
Project Name	: HK VENTURES-CALVERTON	Project Number	: HKV2101
Lab ID	: WG1557675-1	Date Collected	: NA
Client ID	: WG1557675-1BLANK	Date Received	: NA
Sample Location	:	Date Analyzed	: 10/20/21 17:18
Sample Matrix	: SOIL	Dilution Factor	: 1
Analytical Method	: 1,6010D	Analyst	: SV
Lab File ID	: WG1560838.pdf	Instrument ID	: TRACE5
Sample Amount	: 1.25g	%Solids	: NA
Digestion Method	: EPA 3050B	Date Digested	: 10/12/21

		mg/kg			
CAS NO.	Parameter	Results	RL	MDL	Qualifier
7429-90-5	Aluminum, Total	ND	4.00	1.08	U
7440-36-0	Antimony, Total	ND	2.00	0.152	U
7440-38-2	Arsenic, Total	0.088	0.400	0.083	J
7440-39-3	Barium, Total	ND	0.400	0.070	U
7440-41-7	Beryllium, Total	ND	0.200	0.013	U
7440-43-9	Cadmium, Total	ND	0.400	0.039	U
7440-70-2	Calcium, Total	ND	4.00	1.40	U
7440-47-3	Chromium, Total	0.068	0.400	0.038	J
7440-48-4	Cobalt, Total	ND	0.800	0.066	U
7440-50-8	Copper, Total	ND	0.400	0.103	U
7439-89-6	Iron, Total	1.41	2.00	0.361	J
7439-92-1	Lead, Total	ND	2.00	0.107	U
7439-95-4	Magnesium, Total	ND	4.00	0.616	U
7439-96-5	Manganese, Total	ND	0.400	0.064	U
7440-02-0	Nickel, Total	ND	1.00	0.097	U
7440-09-7	Potassium, Total	ND	100	5.76	U
7782-49-2	Selenium, Total	ND	0.800	0.103	U
7440-22-4	Silver, Total	ND	0.400	0.113	U
7440-23-5	Sodium, Total	2.06	80.0	1.26	J
7440-28-0	Thallium, Total	ND	0.800	0.126	U
7440-62-2	Vanadium, Total	ND	0.400	0.081	U
7440-66-6	Zinc, Total	ND	2.00	0.117	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: WG1557675-4	**Date Collected**	: 10/06/21 11:45
Client ID	: WG1557675-4 DUP	**Date Received**	: 10/07/21
Sample Location	:	**Date Analyzed**	: 10/20/21 17:47
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,6010D	**Analyst**	: DL
Lab File ID	: WG1560838.pdf	**Instrument ID**	: TRACE5
Sample Amount	: 1.33g	**%Solids**	: 85
Digestion Method	: EPA 3050B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7440-38-2	Arsenic, Total	3.24	0.443	0.092	
7440-39-3	Barium, Total	80.9	0.443	0.077	
7440-43-9	Cadmium, Total	ND	0.443	0.043	U
7440-47-3	Chromium, Total	11.1	0.443	0.043	
7439-92-1	Lead, Total	120.	2.22	0.119	
7782-49-2	Selenium, Total	0.324	0.887	0.114	J
7440-22-4	Silver, Total	ND	0.443	0.125	U

Inorganic Data
(Mercury Analysis)

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-01	**Date Collected**	: 10/11/21 11:10
Client ID	: SB001_0-2	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/18/21 09:39
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7471B	**Analyst**	: AC
Lab File ID	: WG1559784.pdf	**Instrument ID**	: NIC 2
Sample Amount	: 0.395g	**%Solids**	: 94
Digestion Method	: EPA 7471B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.067	0.044	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-02	**Date Collected**	: 10/11/21 11:30
Client ID	: SB002_3-5	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/18/21 09:42
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7471B	**Analyst**	: AC
Lab File ID	: WG1559784.pdf	**Instrument ID**	: NIC 2
Sample Amount	: 0.375g	**%Solids**	: 98
Digestion Method	: EPA 7471B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.068	0.044	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-03	**Date Collected**	: 10/11/21 11:50
Client ID	: SB003_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/18/21 09:46
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7471B	**Analyst**	: AC
Lab File ID	: WG1559784.pdf	**Instrument ID**	: NIC 2
Sample Amount	: 0.362g	**%Solids**	: 89
Digestion Method	: EPA 7471B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.078	0.051	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-04	**Date Collected**	: 10/11/21 12:15
Client ID	: SB004_4-6	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/18/21 09:49
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7471B	**Analyst**	: AC
Lab File ID	: WG1559784.pdf	**Instrument ID**	: NIC 2
Sample Amount	: 0.384g	**%Solids**	: 96
Digestion Method	: EPA 7471B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.068	0.044	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-05	**Date Collected**	: 10/11/21 12:35
Client ID	: SB005_1-3	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/18/21 09:52
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7471B	**Analyst**	: AC
Lab File ID	: WG1559784.pdf	**Instrument ID**	: NIC 2
Sample Amount	: 0.367g	**%Solids**	: 91
Digestion Method	: EPA 7471B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.075	0.049	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-06	**Date Collected**	: 10/11/21 12:55
Client ID	: SB006_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/18/21 09:56
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7471B	**Analyst**	: AC
Lab File ID	: WG1559784.pdf	**Instrument ID**	: NIC 2
Sample Amount	: 0.367g	**%Solids**	: 92
Digestion Method	: EPA 7471B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.074	0.048	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-07	**Date Collected**	: 10/11/21 13:20
Client ID	: SB007_5-7	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/18/21 09:59
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7471B	**Analyst**	: AC
Lab File ID	: WG1559784.pdf	**Instrument ID**	: NIC 2
Sample Amount	: 0.399g	**%Solids**	: 99
Digestion Method	: EPA 7471B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.063	0.041	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-08	**Date Collected**	: 10/11/21 13:45
Client ID	: SB008_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/18/21 10:09
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7471B	**Analyst**	: AC
Lab File ID	: WG1559784.pdf	**Instrument ID**	: NIC 2
Sample Amount	: 0.39g	**%Solids**	: 84
Digestion Method	: EPA 7471B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.076	0.050	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-09	**Date Collected**	: 10/11/21 14:05
Client ID	: SB009_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/18/21 10:12
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7471B	**Analyst**	: AC
Lab File ID	: WG1559784.pdf	**Instrument ID**	: NIC 2
Sample Amount	: 0.383g	**%Solids**	: 91
Digestion Method	: EPA 7471B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	0.346	0.072	0.047	

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-10	**Date Collected**	: 10/11/21 14:25
Client ID	: SB010_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/18/21 10:15
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7471B	**Analyst**	: AC
Lab File ID	: WG1559784.pdf	**Instrument ID**	: NIC 2
Sample Amount	: 0.388g	**%Solids**	: 91
Digestion Method	: EPA 7471B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	0.166	0.071	0.046	

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: WG1557676-1	**Date Collected**	: NA
Client ID	: WG1557676-1BLANK	**Date Received**	: NA
Sample Location	:	**Date Analyzed**	: 10/18/21 08:58
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7471B	**Analyst**	: AC
Lab File ID	: WG1559784.pdf	**Instrument ID**	: NIC 2
Sample Amount	: 0.3g	**%Solids**	: NA
Digestion Method	: EPA 7471B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	ND	0.083	0.054	U

Form 1
METALS

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: WG1557676-4	**Date Collected**	: 10/06/21 11:45
Client ID	: WG1557676-4 DUP	**Date Received**	: 10/07/21
Sample Location	:	**Date Analyzed**	: 10/18/21 09:11
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 1,7471B	**Analyst**	: AC
Lab File ID	: WG1559784.pdf	**Instrument ID**	: NIC 2
Sample Amount	: 0.363g	**%Solids**	: 85
Digestion Method	: EPA 7471B	**Date Digested**	: 10/12/21

		mg/kg			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
7439-97-6	Mercury, Total	0.170	0.081	0.053	

Wet Chemistry

Total Solids / Percent Moisture Analysis

Results

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-01	**Date Collected**	: 10/11/21 11:10
Client ID	: SB001_0-2	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/12/21 09:16
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 121,2540G	**Analyst**	: RI
Lab File ID	: WG1557406.pdf	**Instrument ID**	: BALANCE#53
Sample Amount	:	**%Solids**	: 94
Digestion Method	:	**Date Digested**	:

CAS NO.	Parameter	% Results	% RL	% MDL	Qualifier
NONE	Solids, Total	94.2	0.100	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-02	**Date Collected**	: 10/11/21 11:30
Client ID	: SB002_3-5	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/12/21 09:16
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 121,2540G	**Analyst**	: RI
Lab File ID	: WG1557406.pdf	**Instrument ID**	: BALANCE#53
Sample Amount	:	**%Solids**	: 98
Digestion Method	:	**Date Digested**	:

CAS NO.	Parameter	Results	% RL	% MDL	Qualifier
NONE	Solids, Total	97.8	0.100	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-03	**Date Collected**	: 10/11/21 11:50
Client ID	: SB003_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/12/21 09:16
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 121,2540G	**Analyst**	: RI
Lab File ID	: WG1557406.pdf	**Instrument ID**	: BALANCE#53
Sample Amount	:	**%Solids**	: 89
Digestion Method	:	**Date Digested**	:

CAS NO.	Parameter	Results	% RL	% MDL	Qualifier
NONE	Solids, Total	88.9	0.100	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-04	**Date Collected**	: 10/11/21 12:15
Client ID	: SB004_4-6	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/12/21 09:16
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 121,2540G	**Analyst**	: RI
Lab File ID	: WG1557406.pdf	**Instrument ID**	: BALANCE#53
Sample Amount	:	**%Solids**	: 96
Digestion Method	:	**Date Digested**	:

CAS NO.	Parameter	Results	% RL	% MDL	Qualifier
NONE	Solids, Total	95.9	0.100	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-05	**Date Collected**	: 10/11/21 12:35
Client ID	: SB005_1-3	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/12/21 09:16
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 121,2540G	**Analyst**	: RI
Lab File ID	: WG1557406.pdf	**Instrument ID**	: BALANCE#53
Sample Amount	:	**%Solids**	: 91
Digestion Method	:	**Date Digested**	:

CAS NO.	Parameter	Results	% RL	% MDL	Qualifier
NONE	Solids, Total	91.2	0.100	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-06	**Date Collected**	: 10/11/21 12:55
Client ID	: SB006_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/12/21 09:16
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 121,2540G	**Analyst**	: RI
Lab File ID	: WG1557406.pdf	**Instrument ID**	: BALANCE#53
Sample Amount	:	**%Solids**	: 92
Digestion Method	:	**Date Digested**	:

CAS NO.	Parameter	% Results	% RL	% MDL	Qualifier
NONE	Solids, Total	92.1	0.100	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-07	**Date Collected**	: 10/11/21 13:20
Client ID	: SB007_5-7	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/12/21 09:16
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 121,2540G	**Analyst**	: RI
Lab File ID	: WG1557406.pdf	**Instrument ID**	: BALANCE#53
Sample Amount	:	**%Solids**	: 99
Digestion Method	:	**Date Digested**	:

CAS NO.	Parameter	% Results	% RL	% MDL	Qualifier
NONE	Solids, Total	99.2	0.100	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-08	**Date Collected**	: 10/11/21 13:45
Client ID	: SB008_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/12/21 09:16
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 121,2540G	**Analyst**	: RI
Lab File ID	: WG1557406.pdf	**Instrument ID**	: BALANCE#53
Sample Amount	:	**%Solids**	: 84
Digestion Method	:	**Date Digested**	:

CAS NO.	Parameter	Results	% RL	% MDL	Qualifier
NONE	Solids, Total	83.9	0.100	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-09	**Date Collected**	: 10/11/21 14:05
Client ID	: SB009_2-4	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/12/21 09:16
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 121,2540G	**Analyst**	: RI
Lab File ID	: WG1557406.pdf	**Instrument ID**	: BALANCE#53
Sample Amount	:	**%Solids**	: 91
Digestion Method	:	**Date Digested**	:

CAS NO.	Parameter	Results	% RL	% MDL	Qualifier
NONE	Solids, Total	90.6	0.100	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: L2155380-10	**Date Collected**	: 10/11/21 14:25
Client ID	: SB010_6-8	**Date Received**	: 10/11/21
Sample Location	: 4285 MIDDLE COUNTRY RD, CALVERTON, NY	**Date Analyzed**	: 10/12/21 09:16
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 121,2540G	**Analyst**	: RI
Lab File ID	: WG1557406.pdf	**Instrument ID**	: BALANCE#53
Sample Amount	:	**%Solids**	: 91
Digestion Method	:	**Date Digested**	:

CAS NO.	Parameter	% Results	RL	MDL	Qualifier
NONE	Solids, Total	91.3	0.100	NA	

Form 1
WETCHEM

Client	: P. W. Grosser	**Lab Number**	: L2155380
Project Name	: HK VENTURES-CALVERTON	**Project Number**	: HKV2101
Lab ID	: WG1557406-1	**Date Collected**	: 10/09/21 16:20
Client ID	: WG1557406-1 DUP	**Date Received**	: 10/10/21
Sample Location	:	**Date Analyzed**	: 10/12/21 09:16
Sample Matrix	: SOIL	**Dilution Factor**	: 1
Analytical Method	: 121,2540G	**Analyst**	: RI
Lab File ID	: WG1557406.pdf	**Instrument ID**	: BALANCE#53
Sample Amount	:	**%Solids**	: 86
Digestion Method	:	**Date Digested**	:

		%			
CAS NO.	**Parameter**	**Results**	**RL**	**MDL**	**Qualifier**
NONE	**Solids, Total**	**86.9**	**0.100**	**NA**	

ANALYTICAL REPORT

Lab Number:	L2155998
Client:	P. W. Grosser 630 Johnson Avenue Suite 7 Bohemia, NY 11716
ATTN:	Thomas Melia
Phone:	(631) 589-6353
Project Name:	HKV2101
Project Number:	HKV2101
Report Date:	10/20/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2155998-01	GRID A_0-2	SOIL	Not Specified	10/13/21 09:35	10/13/21
L2155998-02	GRID A_18-24	SOIL	Not Specified	10/13/21 09:35	10/13/21
L2155998-03	GRID B_0-2	SOIL	Not Specified	10/13/21 10:45	10/13/21
L2155998-04	GRID B_18-24	SOIL	Not Specified	10/13/21 10:45	10/13/21
L2155998-05	GRID C_0-2	SOIL	Not Specified	10/13/21 13:00	10/13/21
L2155998-06	GRID C_18-24	SOIL	Not Specified	10/13/21 13:00	10/13/21
L2155998-07	GRID D_0-2	SOIL	Not Specified	10/13/21 14:30	10/13/21
L2155998-08	GRID D_18-24	SOIL	Not Specified	10/13/21 14:30	10/13/21
L2155998-09	GRID P_0-2	SOIL	Not Specified	10/13/21 08:26	10/13/21
L2155998-10	GRID P_18-24	SOIL	Not Specified	10/13/21 08:26	10/13/21
L2155998-11	GRID Q_0-2	SOIL	Not Specified	10/13/21 10:20	10/13/21
L2155998-12	GRID Q_18-24	SOIL	Not Specified	10/13/21 10:20	10/13/21
L2155998-13	GRID R_0-2	SOIL	Not Specified	10/13/21 11:30	10/13/21
L2155998-14	GRID R_18-24	SOIL	Not Specified	10/13/21 11:30	10/13/21
L2155998-15	GRID S_0-2	SOIL	Not Specified	10/13/21 13:40	10/13/21
L2155998-16	GRID S_18-24	SOIL	Not Specified	10/13/21 13:40	10/13/21
L2155998-17	GRID T_0-2	SOIL	Not Specified	10/13/21 15:00	10/13/21
L2155998-18	GRID T_18-24	SOIL	Not Specified	10/13/21 15:00	10/13/21

Project Name:	HKV2101	**Lab Number:**	L2155998
Project Number:	HKV2101	**Report Date:**	10/20/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: HKV2101 **Lab Number:** L2155998
Project Number: HKV2101 **Report Date:** 10/20/21

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2155998-04: A sample container identified as "GRID B_18-24" was listed on the Chain of Custody, but not received. This was verified by the client.

L2155998-06: A sample container identified as "GRID C_18-24" was listed on the Chain of Custody, but not received. This was verified by the client.

L2155998-08: A sample container identified as "GRID D_18-24" was listed on the Chain of Custody, but not received. This was verified by the client.

L2155998-10: A sample container identified as "GRID P_18-24" was listed on the Chain of Custody, but not received. This was verified by the client.

L2155998-12: A sample container identified as "GRID Q_18-24" was listed on the Chain of Custody, but not received. This was verified by the client.

L2155998-16: A sample container identified as "GRID S_18-24" was listed on the Chain of Custody, but not received. This was verified by the client.

L2155998-18: A sample container identified as "GRID T_18-24" was listed on the Chain of Custody, but not received. This was verified by the client.

Total Metals

L2155998-01, -03, -05, -07, -09, -11, -13, -15 and -17: The sample has elevated detection limits for all elements, with the exception of mercury and sodium, due to the dilution required by matrix interferences encountered during analysis.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Sebastian Corbin

Title: Technical Director/Representative Date: 10/20/21

ORGANICS

VOLATILES

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-01
Client ID: GRID A_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 09:35
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 10/16/21 15:29
Analyst: NLK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.8	3.1	1
1,1-Dichloroethane	ND		ug/kg	1.4	0.20	1
Chloroform	ND		ug/kg	2.0	0.19	1
Carbon tetrachloride	ND		ug/kg	1.4	0.31	1
1,2-Dichloropropane	ND		ug/kg	1.4	0.17	1
Dibromochloromethane	ND		ug/kg	1.4	0.19	1
1,1,2-Trichloroethane	ND		ug/kg	1.4	0.36	1
Tetrachloroethene	ND		ug/kg	0.68	0.26	1
Chlorobenzene	ND		ug/kg	0.68	0.17	1
Trichlorofluoromethane	ND		ug/kg	5.4	0.94	1
1,2-Dichloroethane	ND		ug/kg	1.4	0.35	1
1,1,1-Trichloroethane	ND		ug/kg	0.68	0.23	1
Bromodichloromethane	ND		ug/kg	0.68	0.15	1
trans-1,3-Dichloropropene	ND		ug/kg	1.4	0.37	1
cis-1,3-Dichloropropene	ND		ug/kg	0.68	0.21	1
1,3-Dichloropropene, Total	ND		ug/kg	0.68	0.21	1
1,1-Dichloropropene	ND		ug/kg	0.68	0.22	1
Bromoform	ND		ug/kg	5.4	0.33	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.68	0.22	1
Benzene	ND		ug/kg	0.68	0.22	1
Toluene	ND		ug/kg	1.4	0.74	1
Ethylbenzene	ND		ug/kg	1.4	0.19	1
Chloromethane	ND		ug/kg	5.4	1.3	1
Bromomethane	ND		ug/kg	2.7	0.79	1
Vinyl chloride	ND		ug/kg	1.4	0.45	1
Chloroethane	ND		ug/kg	2.7	0.61	1
1,1-Dichloroethene	ND		ug/kg	1.4	0.32	1
trans-1,2-Dichloroethene	ND		ug/kg	2.0	0.18	1

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-01 Date Collected: 10/13/21 09:35

Client ID: GRID A_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.68	0.18	1
1,2-Dichlorobenzene	ND		ug/kg	2.7	0.20	1
1,3-Dichlorobenzene	ND		ug/kg	2.7	0.20	1
1,4-Dichlorobenzene	ND		ug/kg	2.7	0.23	1
Methyl tert butyl ether	ND		ug/kg	2.7	0.27	1
p/m-Xylene	ND		ug/kg	2.7	0.76	1
o-Xylene	ND		ug/kg	1.4	0.39	1
Xylenes, Total	ND		ug/kg	1.4	0.39	1
cis-1,2-Dichloroethene	ND		ug/kg	1.4	0.24	1
1,2-Dichloroethene, Total	ND		ug/kg	1.4	0.18	1
Dibromomethane	ND		ug/kg	2.7	0.32	1
Styrene	ND		ug/kg	1.4	0.26	1
Dichlorodifluoromethane	ND		ug/kg	14	1.2	1
Acetone	ND		ug/kg	14	6.5	1
Carbon disulfide	ND		ug/kg	14	6.2	1
2-Butanone	ND		ug/kg	14	3.0	1
Vinyl acetate	ND		ug/kg	14	2.9	1
4-Methyl-2-pentanone	ND		ug/kg	14	1.7	1
1,2,3-Trichloropropane	ND		ug/kg	2.7	0.17	1
2-Hexanone	ND		ug/kg	14	1.6	1
Bromochloromethane	ND		ug/kg	2.7	0.28	1
2,2-Dichloropropane	ND		ug/kg	2.7	0.27	1
1,2-Dibromoethane	ND		ug/kg	1.4	0.38	1
1,3-Dichloropropane	ND		ug/kg	2.7	0.23	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.68	0.18	1
Bromobenzene	ND		ug/kg	2.7	0.20	1
n-Butylbenzene	ND		ug/kg	1.4	0.23	1
sec-Butylbenzene	ND		ug/kg	1.4	0.20	1
tert-Butylbenzene	ND		ug/kg	2.7	0.16	1
o-Chlorotoluene	ND		ug/kg	2.7	0.26	1
p-Chlorotoluene	ND		ug/kg	2.7	0.15	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.1	1.4	1
Hexachlorobutadiene	ND		ug/kg	5.4	0.23	1
Isopropylbenzene	ND		ug/kg	1.4	0.15	1
p-Isopropyltoluene	ND		ug/kg	1.4	0.15	1
Naphthalene	ND		ug/kg	5.4	0.88	1
Acrylonitrile	ND		ug/kg	5.4	1.6	1

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-01 Date Collected: 10/13/21 09:35

Client ID: GRID A_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.4	0.23	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.7	0.44	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.7	0.37	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.7	0.26	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.7	0.45	1
1,4-Dioxane	ND		ug/kg	110	48.	1
p-Diethylbenzene	ND		ug/kg	2.7	0.24	1
p-Ethyltoluene	ND		ug/kg	2.7	0.52	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.7	0.26	1
Ethyl ether	ND		ug/kg	2.7	0.46	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	6.8	1.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	101		70-130

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-13
Client ID: GRID R_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 11:30
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 10/16/21 15:56
Analyst: NLK
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.0	2.8	1
1,1-Dichloroethane	ND		ug/kg	1.2	0.17	1
Chloroform	ND		ug/kg	1.8	0.17	1
Carbon tetrachloride	ND		ug/kg	1.2	0.28	1
1,2-Dichloropropane	ND		ug/kg	1.2	0.15	1
Dibromochloromethane	ND		ug/kg	1.2	0.17	1
1,1,2-Trichloroethane	ND		ug/kg	1.2	0.32	1
Tetrachloroethene	ND		ug/kg	0.60	0.24	1
Chlorobenzene	ND		ug/kg	0.60	0.15	1
Trichlorofluoromethane	ND		ug/kg	4.8	0.84	1
1,2-Dichloroethane	ND		ug/kg	1.2	0.31	1
1,1,1-Trichloroethane	ND		ug/kg	0.60	0.20	1
Bromodichloromethane	ND		ug/kg	0.60	0.13	1
trans-1,3-Dichloropropene	ND		ug/kg	1.2	0.33	1
cis-1,3-Dichloropropene	ND		ug/kg	0.60	0.19	1
1,3-Dichloropropene, Total	ND		ug/kg	0.60	0.19	1
1,1-Dichloropropene	ND		ug/kg	0.60	0.19	1
Bromoform	ND		ug/kg	4.8	0.30	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.60	0.20	1
Benzene	ND		ug/kg	0.60	0.20	1
Toluene	ND		ug/kg	1.2	0.65	1
Ethylbenzene	ND		ug/kg	1.2	0.17	1
Chloromethane	ND		ug/kg	4.8	1.1	1
Bromomethane	ND		ug/kg	2.4	0.70	1
Vinyl chloride	ND		ug/kg	1.2	0.40	1
Chloroethane	ND		ug/kg	2.4	0.54	1
1,1-Dichloroethene	ND		ug/kg	1.2	0.29	1
trans-1,2-Dichloroethene	ND		ug/kg	1.8	0.16	1

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-13 Date Collected: 10/13/21 11:30

Client ID: GRID R_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.60	0.16	1
1,2-Dichlorobenzene	ND		ug/kg	2.4	0.17	1
1,3-Dichlorobenzene	ND		ug/kg	2.4	0.18	1
1,4-Dichlorobenzene	ND		ug/kg	2.4	0.21	1
Methyl tert butyl ether	ND		ug/kg	2.4	0.24	1
p/m-Xylene	ND		ug/kg	2.4	0.67	1
o-Xylene	ND		ug/kg	1.2	0.35	1
Xylenes, Total	ND		ug/kg	1.2	0.35	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	0.21	1
1,2-Dichloroethene, Total	ND		ug/kg	1.2	0.16	1
Dibromomethane	ND		ug/kg	2.4	0.29	1
Styrene	ND		ug/kg	1.2	0.24	1
Dichlorodifluoromethane	ND		ug/kg	12	1.1	1
Acetone	ND		ug/kg	12	5.8	1
Carbon disulfide	ND		ug/kg	12	5.5	1
2-Butanone	ND		ug/kg	12	2.7	1
Vinyl acetate	ND		ug/kg	12	2.6	1
4-Methyl-2-pentanone	ND		ug/kg	12	1.5	1
1,2,3-Trichloropropane	ND		ug/kg	2.4	0.15	1
2-Hexanone	ND		ug/kg	12	1.4	1
Bromochloromethane	ND		ug/kg	2.4	0.25	1
2,2-Dichloropropane	ND		ug/kg	2.4	0.24	1
1,2-Dibromoethane	ND		ug/kg	1.2	0.34	1
1,3-Dichloropropane	ND		ug/kg	2.4	0.20	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.60	0.16	1
Bromobenzene	ND		ug/kg	2.4	0.17	1
n-Butylbenzene	ND		ug/kg	1.2	0.20	1
sec-Butylbenzene	ND		ug/kg	1.2	0.18	1
tert-Butylbenzene	ND		ug/kg	2.4	0.14	1
o-Chlorotoluene	ND		ug/kg	2.4	0.23	1
p-Chlorotoluene	ND		ug/kg	2.4	0.13	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.6	1.2	1
Hexachlorobutadiene	ND		ug/kg	4.8	0.20	1
Isopropylbenzene	ND		ug/kg	1.2	0.13	1
p-Isopropyltoluene	ND		ug/kg	1.2	0.13	1
Naphthalene	ND		ug/kg	4.8	0.78	1
Acrylonitrile	ND		ug/kg	4.8	1.4	1

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-13 Date Collected: 10/13/21 11:30

Client ID: GRID R_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.2	0.21	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.4	0.39	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.4	0.33	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.4	0.23	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.4	0.40	1
1,4-Dioxane	ND		ug/kg	96	42.	1
p-Diethylbenzene	ND		ug/kg	2.4	0.21	1
p-Ethyltoluene	ND		ug/kg	2.4	0.46	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.4	0.23	1
Ethyl ether	ND		ug/kg	2.4	0.41	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	6.0	1.7	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	101		70-130

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/16/21 12:48
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01,13 Batch: WG1559720-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
1,3-Dichloropropene, Total	ND		ug/kg	0.50	0.16
1,1-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/16/21 12:48
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01,13 Batch: WG1559720-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
1,2-Dichloroethene, Total	ND		ug/kg	1.0	0.14
Dibromomethane	ND		ug/kg	2.0	0.24
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
Vinyl acetate	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
1,2,3-Trichloropropane	ND		ug/kg	2.0	0.13
2-Hexanone	ND		ug/kg	10	1.2
Bromochloromethane	ND		ug/kg	2.0	0.20
2,2-Dichloropropane	ND		ug/kg	2.0	0.20
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
1,3-Dichloropropane	ND		ug/kg	2.0	0.17
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	0.13
Bromobenzene	ND		ug/kg	2.0	0.14
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
o-Chlorotoluene	ND		ug/kg	2.0	0.19

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/16/21 12:48
Analyst: LAC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01,13 Batch: WG1559720-5					
p-Chlorotoluene	ND		ug/kg	2.0	0.11
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Hexachlorobutadiene	ND		ug/kg	4.0	0.17
Isopropylbenzene	ND		ug/kg	1.0	0.11
p-Isopropyltoluene	ND		ug/kg	1.0	0.11
Naphthalene	ND		ug/kg	4.0	0.65
Acrylonitrile	ND		ug/kg	4.0	1.2
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	0.32
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
1,4-Dioxane	ND		ug/kg	80	35.
p-Diethylbenzene	ND		ug/kg	2.0	0.18
p-Ethyltoluene	ND		ug/kg	2.0	0.38
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.0	0.19
Ethyl ether	ND		ug/kg	2.0	0.34
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	1.4

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	97		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	99		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01,13 Batch: WG1559720-3 WG1559720-4								
Methylene chloride	92		90		70-130	2		30
1,1-Dichloroethane	98		96		70-130	2		30
Chloroform	96		94		70-130	2		30
Carbon tetrachloride	104		100		70-130	4		30
1,2-Dichloropropane	95		95		70-130	0		30
Dibromochloromethane	87		88		70-130	1		30
1,1,2-Trichloroethane	92		94		70-130	2		30
Tetrachloroethene	104		101		70-130	3		30
Chlorobenzene	97		96		70-130	1		30
Trichlorofluoromethane	101		98		70-139	3		30
1,2-Dichloroethane	90		90		70-130	0		30
1,1,1-Trichloroethane	103		101		70-130	2		30
Bromodichloromethane	97		98		70-130	1		30
trans-1,3-Dichloropropene	88		89		70-130	1		30
cis-1,3-Dichloropropene	91		91		70-130	0		30
1,1-Dichloropropene	106		103		70-130	3		30
Bromoform	83		86		70-130	4		30
1,1,2,2-Tetrachloroethane	86		91		70-130	6		30
Benzene	100		98		70-130	2		30
Toluene	100		96		70-130	4		30
Ethylbenzene	101		99		70-130	2		30
Chloromethane	91		88		52-130	3		30
Bromomethane	86		79		57-147	8		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01,13 Batch: WG1559720-3 WG1559720-4								
Vinyl chloride	95		90		67-130	5		30
Chloroethane	94		89		50-151	5		30
1,1-Dichloroethene	104		101		65-135	3		30
trans-1,2-Dichloroethene	101		99		70-130	2		30
Trichloroethene	102		100		70-130	2		30
1,2-Dichlorobenzene	94		95		70-130	1		30
1,3-Dichlorobenzene	97		96		70-130	1		30
1,4-Dichlorobenzene	94		93		70-130	1		30
Methyl tert butyl ether	93		96		66-130	3		30
p/m-Xylene	104		102		70-130	2		30
o-Xylene	104		102		70-130	2		30
cis-1,2-Dichloroethene	98		96		70-130	2		30
Dibromomethane	89		91		70-130	2		30
Styrene	105		105		70-130	0		30
Dichlorodifluoromethane	99		95		30-146	4		30
Acetone	88		90		54-140	2		30
Carbon disulfide	96		94		59-130	2		30
2-Butanone	78		82		70-130	5		30
Vinyl acetate	81		81		70-130	0		30
4-Methyl-2-pentanone	75		80		70-130	6		30
1,2,3-Trichloropropane	87		89		68-130	2		30
2-Hexanone	71		75		70-130	5		30
Bromochloromethane	95		93		70-130	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: HKV2101

Lab Number: L2155998

Report Date: 10/20/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01,13 Batch: WG1559720-3 WG1559720-4								
2,2-Dichloropropane	104		100		70-130	4		30
1,2-Dibromoethane	85		88		70-130	3		30
1,3-Dichloropropane	92		94		69-130	2		30
1,1,1,2-Tetrachloroethane	101		102		70-130	1		30
Bromobenzene	94		96		70-130	2		30
n-Butylbenzene	102		100		70-130	2		30
sec-Butylbenzene	103		100		70-130	3		30
tert-Butylbenzene	104		101		70-130	3		30
o-Chlorotoluene	98		98		70-130	0		30
p-Chlorotoluene	98		97		70-130	1		30
1,2-Dibromo-3-chloropropane	73		78		68-130	7		30
Hexachlorobutadiene	102		100		67-130	2		30
Isopropylbenzene	106		102		70-130	4		30
p-Isopropyltoluene	106		103		70-130	3		30
Naphthalene	91		95		70-130	4		30
Acrylonitrile	74		80		70-130	8		30
n-Propylbenzene	101		101		70-130	0		30
1,2,3-Trichlorobenzene	95		98		70-130	3		30
1,2,4-Trichlorobenzene	99		98		70-130	1		30
1,3,5-Trimethylbenzene	103		102		70-130	1		30
1,2,4-Trimethylbenzene	104		102		70-130	2		30
1,4-Dioxane	76		86		65-136	12		30
p-Diethylbenzene	105		102		70-130	3		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01,13 Batch: WG1559720-3 WG1559720-4								
p-Ethyltoluene	102		101		70-130	1		30
1,2,4,5-Tetramethylbenzene	101		100		70-130	1		30
Ethyl ether	85		83		67-130	2		30
trans-1,4-Dichloro-2-butene	82		85		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	91		93		70-130
Toluene-d8	101		100		70-130
4-Bromofluorobenzene	100		102		70-130
Dibromofluoromethane	96		97		70-130

SEMIVOLATILES

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-01
Client ID: GRID A_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 09:35
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 10/18/21 13:37
Analyst: IM
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 01:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	21.	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	23.	1
Hexachlorobenzene	ND		ug/kg	120	22.	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	27.	1
2-Chloronaphthalene	ND		ug/kg	200	20.	1
1,2-Dichlorobenzene	ND		ug/kg	200	36.	1
1,3-Dichlorobenzene	ND		ug/kg	200	34.	1
1,4-Dichlorobenzene	ND		ug/kg	200	35.	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	53.	1
2,4-Dinitrotoluene	ND		ug/kg	200	40.	1
2,6-Dinitrotoluene	ND		ug/kg	200	34.	1
Fluoranthene	100	J	ug/kg	120	23.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	200	21.	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	30.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	34.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	20.	1
Hexachlorobutadiene	ND		ug/kg	200	29.	1
Hexachlorocyclopentadiene	ND		ug/kg	570	180	1
Hexachloroethane	ND		ug/kg	160	32.	1
Isophorone	ND		ug/kg	180	26.	1
Naphthalene	ND		ug/kg	200	24.	1
Nitrobenzene	ND		ug/kg	180	30.	1
NDPA/DPA	ND		ug/kg	160	23.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	200	31.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	200	69.	1
Butyl benzyl phthalate	ND		ug/kg	200	50.	1
Di-n-butylphthalate	ND		ug/kg	200	38.	1
Di-n-octylphthalate	ND		ug/kg	200	68.	1

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-01 Date Collected: 10/13/21 09:35

Client ID: GRID A_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	200	18.	1
Dimethyl phthalate	ND		ug/kg	200	42.	1
Benzo(a)anthracene	50	J	ug/kg	120	22.	1
Benzo(a)pyrene	66	J	ug/kg	160	49.	1
Benzo(b)fluoranthene	110	J	ug/kg	120	34.	1
Benzo(k)fluoranthene	ND		ug/kg	120	32.	1
Chrysene	64	J	ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	31.	1
Anthracene	ND		ug/kg	120	39.	1
Benzo(ghi)perylene	61	J	ug/kg	160	24.	1
Fluorene	ND		ug/kg	200	19.	1
Phenanthrene	33	J	ug/kg	120	24.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	100	J	ug/kg	160	28.	1
Pyrene	90	J	ug/kg	120	20.	1
Biphenyl	ND		ug/kg	460	46.	1
4-Chloroaniline	ND		ug/kg	200	36.	1
2-Nitroaniline	ND		ug/kg	200	38.	1
3-Nitroaniline	ND		ug/kg	200	38.	1
4-Nitroaniline	ND		ug/kg	200	83.	1
Dibenzofuran	ND		ug/kg	200	19.	1
2-Methylnaphthalene	ND		ug/kg	240	24.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	200	21.	1
Acetophenone	ND		ug/kg	200	25.	1
2,4,6-Trichlorophenol	ND		ug/kg	120	38.	1
p-Chloro-m-cresol	ND		ug/kg	200	30.	1
2-Chlorophenol	ND		ug/kg	200	24.	1
2,4-Dichlorophenol	ND		ug/kg	180	32.	1
2,4-Dimethylphenol	ND		ug/kg	200	66.	1
2-Nitrophenol	ND		ug/kg	430	75.	1
4-Nitrophenol	ND		ug/kg	280	82.	1
2,4-Dinitrophenol	ND		ug/kg	960	93.	1
4,6-Dinitro-o-cresol	ND		ug/kg	520	96.	1
Pentachlorophenol	ND		ug/kg	160	44.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	31.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	31.	1

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-01 Date Collected: 10/13/21 09:35

Client ID: GRID A_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	200	38.	1
Benzoic Acid	320	J	ug/kg	650	200	1
Benzyl Alcohol	ND		ug/kg	200	61.	1
Carbazole	ND		ug/kg	200	19.	1
1,4-Dioxane	ND		ug/kg	30	9.2	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	79		25-120
Phenol-d6	87		10-120
Nitrobenzene-d5	92		23-120
2-Fluorobiphenyl	87		30-120
2,4,6-Tribromophenol	109		10-136
4-Terphenyl-d14	87		18-120

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-13
Client ID: GRID R_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 11:30
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 10/18/21 14:00
Analyst: IM
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 01:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	18.	1
1,2,4-Trichlorobenzene	ND		ug/kg	170	20.	1
Hexachlorobenzene	ND		ug/kg	100	19.	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	23.	1
2-Chloronaphthalene	ND		ug/kg	170	17.	1
1,2-Dichlorobenzene	ND		ug/kg	170	31.	1
1,3-Dichlorobenzene	ND		ug/kg	170	30.	1
1,4-Dichlorobenzene	ND		ug/kg	170	30.	1
3,3'-Dichlorobenzidine	ND		ug/kg	170	46.	1
2,4-Dinitrotoluene	ND		ug/kg	170	35.	1
2,6-Dinitrotoluene	ND		ug/kg	170	30.	1
Fluoranthene	ND		ug/kg	100	20.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	170	18.	1
4-Bromophenyl phenyl ether	ND		ug/kg	170	26.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	210	30.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	17.	1
Hexachlorobutadiene	ND		ug/kg	170	25.	1
Hexachlorocyclopentadiene	ND		ug/kg	500	160	1
Hexachloroethane	ND		ug/kg	140	28.	1
Isophorone	ND		ug/kg	160	22.	1
Naphthalene	ND		ug/kg	170	21.	1
Nitrobenzene	ND		ug/kg	160	26.	1
NDPA/DPA	ND		ug/kg	140	20.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	170	27.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	170	60.	1
Butyl benzyl phthalate	ND		ug/kg	170	44.	1
Di-n-butylphthalate	ND		ug/kg	170	33.	1
Di-n-octylphthalate	ND		ug/kg	170	59.	1

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-13 Date Collected: 10/13/21 11:30

Client ID: GRID R_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	170	16.	1
Dimethyl phthalate	ND		ug/kg	170	36.	1
Benzo(a)anthracene	ND		ug/kg	100	20.	1
Benzo(a)pyrene	ND		ug/kg	140	42.	1
Benzo(b)fluoranthene	ND		ug/kg	100	29.	1
Benzo(k)fluoranthene	ND		ug/kg	100	28.	1
Chrysene	ND		ug/kg	100	18.	1
Acenaphthylene	ND		ug/kg	140	27.	1
Anthracene	ND		ug/kg	100	34.	1
Benzo(ghi)perylene	ND		ug/kg	140	20.	1
Fluorene	ND		ug/kg	170	17.	1
Phenanthrene	ND		ug/kg	100	21.	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	20.	1
Indeno(1,2,3-cd)pyrene	48	J	ug/kg	140	24.	1
Pyrene	18	J	ug/kg	100	17.	1
Biphenyl	ND		ug/kg	400	40.	1
4-Chloroaniline	ND		ug/kg	170	32.	1
2-Nitroaniline	ND		ug/kg	170	33.	1
3-Nitroaniline	ND		ug/kg	170	33.	1
4-Nitroaniline	ND		ug/kg	170	72.	1
Dibenzofuran	ND		ug/kg	170	16.	1
2-Methylnaphthalene	ND		ug/kg	210	21.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	170	18.	1
Acetophenone	ND		ug/kg	170	21.	1
2,4,6-Trichlorophenol	ND		ug/kg	100	33.	1
p-Chloro-m-cresol	ND		ug/kg	170	26.	1
2-Chlorophenol	ND		ug/kg	170	20.	1
2,4-Dichlorophenol	ND		ug/kg	160	28.	1
2,4-Dimethylphenol	ND		ug/kg	170	57.	1
2-Nitrophenol	ND		ug/kg	370	65.	1
4-Nitrophenol	ND		ug/kg	240	71.	1
2,4-Dinitrophenol	ND		ug/kg	830	81.	1
4,6-Dinitro-o-cresol	ND		ug/kg	450	83.	1
Pentachlorophenol	ND		ug/kg	140	38.	1
Phenol	ND		ug/kg	170	26.	1
2-Methylphenol	ND		ug/kg	170	27.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	250	27.	1

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-13 Date Collected: 10/13/21 11:30

Client ID: GRID R_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	170	33.	1
Benzoic Acid	260	J	ug/kg	560	180	1
Benzyl Alcohol	ND		ug/kg	170	53.	1
Carbazole	ND		ug/kg	170	17.	1
1,4-Dioxane	ND		ug/kg	26	8.0	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	82		25-120
Phenol-d6	89		10-120
Nitrobenzene-d5	87		23-120
2-Fluorobiphenyl	84		30-120
2,4,6-Tribromophenol	109		10-136
4-Terphenyl-d14	79		18-120

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/16/21 16:24
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 10/16/21 01:37

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,13 Batch: WG1559404-1					
Acenaphthene	ND		ug/kg	130	17.
1,2,4-Trichlorobenzene	ND		ug/kg	160	19.
Hexachlorobenzene	ND		ug/kg	99	18.
Bis(2-chloroethyl)ether	ND		ug/kg	150	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
1,2-Dichlorobenzene	ND		ug/kg	160	30.
1,3-Dichlorobenzene	ND		ug/kg	160	28.
1,4-Dichlorobenzene	ND		ug/kg	160	29.
3,3'-Dichlorobenzidine	ND		ug/kg	160	44.
2,4-Dinitrotoluene	ND		ug/kg	160	33.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Fluoranthene	ND		ug/kg	99	19.
4-Chlorophenyl phenyl ether	ND		ug/kg	160	18.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	16.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachlorocyclopentadiene	ND		ug/kg	470	150
Hexachloroethane	ND		ug/kg	130	27.
Isophorone	ND		ug/kg	150	21.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
NDPA/DPA	ND		ug/kg	130	19.
n-Nitrosodi-n-propylamine	ND		ug/kg	160	25.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	57.
Butyl benzyl phthalate	ND		ug/kg	160	42.
Di-n-butylphthalate	ND		ug/kg	160	31.
Di-n-octylphthalate	ND		ug/kg	160	56.
Diethyl phthalate	ND		ug/kg	160	15.

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/16/21 16:24
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 10/16/21 01:37

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,13 Batch: WG1559404-1					
Dimethyl phthalate	ND		ug/kg	160	35.
Benzo(a)anthracene	ND		ug/kg	99	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Biphenyl	ND		ug/kg	380	38.
4-Chloroaniline	ND		ug/kg	160	30.
2-Nitroaniline	ND		ug/kg	160	32.
3-Nitroaniline	ND		ug/kg	160	31.
4-Nitroaniline	ND		ug/kg	160	68.
Dibenzofuran	ND		ug/kg	160	16.
2-Methylnaphthalene	ND		ug/kg	200	20.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	160	17.
Acetophenone	ND		ug/kg	160	20.
2,4,6-Trichlorophenol	ND		ug/kg	99	31.
p-Chloro-m-cresol	ND		ug/kg	160	24.
2-Chlorophenol	ND		ug/kg	160	20.
2,4-Dichlorophenol	ND		ug/kg	150	26.
2,4-Dimethylphenol	ND		ug/kg	160	54.
2-Nitrophenol	ND		ug/kg	360	62.

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/16/21 16:24
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 10/16/21 01:37

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,13 Batch: WG1559404-1					
4-Nitrophenol	ND		ug/kg	230	67.
2,4-Dinitrophenol	ND		ug/kg	790	77.
4,6-Dinitro-o-cresol	ND		ug/kg	430	79.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	160	32.
Benzoic Acid	ND		ug/kg	530	170
Benzyl Alcohol	ND		ug/kg	160	50.
Carbazole	ND		ug/kg	160	16.
1,4-Dioxane	ND		ug/kg	25	7.6

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	91		25-120
Phenol-d6	94		10-120
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	79		30-120
2,4,6-Tribromophenol	105		10-136
4-Terphenyl-d14	93		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: HKV2101

Lab Number: L2155998

Report Date: 10/20/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,13 Batch: WG1559404-2 WG1559404-3								
Acenaphthene	81		78		31-137	4		50
1,2,4-Trichlorobenzene	76		76		38-107	0		50
Hexachlorobenzene	80		78		40-140	3		50
Bis(2-chloroethyl)ether	77		77		40-140	0		50
2-Chloronaphthalene	76		73		40-140	4		50
1,2-Dichlorobenzene	76		75		40-140	1		50
1,3-Dichlorobenzene	73		72		40-140	1		50
1,4-Dichlorobenzene	74		72		28-104	3		50
3,3'-Dichlorobenzidine	81		76		40-140	6		50
2,4-Dinitrotoluene	81		81		40-132	0		50
2,6-Dinitrotoluene	83		81		40-140	2		50
Fluoranthene	80		80		40-140	0		50
4-Chlorophenyl phenyl ether	76		75		40-140	1		50
4-Bromophenyl phenyl ether	78		75		40-140	4		50
Bis(2-chloroisopropyl)ether	58		59		40-140	2		50
Bis(2-chloroethoxy)methane	74		72		40-117	3		50
Hexachlorobutadiene	71		70		40-140	1		50
Hexachlorocyclopentadiene	40		41		40-140	2		50
Hexachloroethane	80		79		40-140	1		50
Isophorone	71		70		40-140	1		50
Naphthalene	74		72		40-140	3		50
Nitrobenzene	81		80		40-140	1		50
NDPA/DPA	80		77		36-157	4		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: HKV2101

Lab Number: L2155998

Report Date: 10/20/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,13 Batch: WG1559404-2 WG1559404-3								
n-Nitrosodi-n-propylamine	74		72		32-121	3		50
Bis(2-ethylhexyl)phthalate	101		99		40-140	2		50
Butyl benzyl phthalate	96		95		40-140	1		50
Di-n-butylphthalate	86		86		40-140	0		50
Di-n-octylphthalate	100		96		40-140	4		50
Diethyl phthalate	80		79		40-140	1		50
Dimethyl phthalate	71		69		40-140	3		50
Benzo(a)anthracene	86		82		40-140	5		50
Benzo(a)pyrene	72		69		40-140	4		50
Benzo(b)fluoranthene	84		76		40-140	10		50
Benzo(k)fluoranthene	78		77		40-140	1		50
Chrysene	81		78		40-140	4		50
Acenaphthylene	71		68		40-140	4		50
Anthracene	81		77		40-140	5		50
Benzo(ghi)perylene	71		68		40-140	4		50
Fluorene	81		78		40-140	4		50
Phenanthrene	81		76		40-140	6		50
Dibenzo(a,h)anthracene	74		70		40-140	6		50
Indeno(1,2,3-cd)pyrene	72		70		40-140	3		50
Pyrene	82		79		35-142	4		50
Biphenyl	74		70		37-127	6		50
4-Chloroaniline	74		72		40-140	3		50
2-Nitroaniline	93		91		47-134	2		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: HKV2101

Lab Number: L2155998

Report Date: 10/20/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,13 Batch: WG1559404-2 WG1559404-3								
3-Nitroaniline	86		83		26-129	4		50
4-Nitroaniline	89		88		41-125	1		50
Dibenzofuran	79		77		40-140	3		50
2-Methylnaphthalene	71		68		40-140	4		50
1,2,4,5-Tetrachlorobenzene	76		74		40-117	3		50
Acetophenone	74		73		14-144	1		50
2,4,6-Trichlorophenol	83		80		30-130	4		50
p-Chloro-m-cresol	79		76		26-103	4		50
2-Chlorophenol	88		87		25-102	1		50
2,4-Dichlorophenol	86		82		30-130	5		50
2,4-Dimethylphenol	80		76		30-130	5		50
2-Nitrophenol	111		109		30-130	2		50
4-Nitrophenol	91		92		11-114	1		50
2,4-Dinitrophenol	30		30		4-130	0		50
4,6-Dinitro-o-cresol	35		36		10-130	3		50
Pentachlorophenol	81		79		17-109	3		50
Phenol	77		75		26-90	3		50
2-Methylphenol	84		82		30-130.	2		50
3-Methylphenol/4-Methylphenol	89		86		30-130	3		50
2,4,5-Trichlorophenol	89		85		30-130	5		50
Benzoic Acid	33		29		10-110	13		50
Benzyl Alcohol	78		78		40-140	0		50
Carbazole	82		79		54-128	4		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,13 Batch: WG1559404-2 WG1559404-3								
1,4-Dioxane	54		50		40-140	8		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	86		87		25-120
Phenol-d6	88		86		10-120
Nitrobenzene-d5	88		86		23-120
2-Fluorobiphenyl	75		72		30-120
2,4,6-Tribromophenol	92		91		10-136
4-Terphenyl-d14	85		85		18-120

PCBS

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-01
Client ID: GRID A_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 09:35
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 10/17/21 21:06
Analyst: JAW
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 05:12
Cleanup Method: EPA 3665A
Cleanup Date: 10/16/21
Cleanup Method: EPA 3660B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	39.4	3.50	1	A
Aroclor 1221	ND		ug/kg	39.4	3.95	1	A
Aroclor 1232	ND		ug/kg	39.4	8.36	1	A
Aroclor 1242	ND		ug/kg	39.4	5.32	1	A
Aroclor 1248	ND		ug/kg	39.4	5.91	1	A
Aroclor 1254	ND		ug/kg	39.4	4.31	1	A
Aroclor 1260	ND		ug/kg	39.4	7.29	1	A
Aroclor 1262	ND		ug/kg	39.4	5.01	1	A
Aroclor 1268	ND		ug/kg	39.4	4.08	1	A
PCBs, Total	ND		ug/kg	39.4	3.50	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	69		30-150	A
2,4,5,6-Tetrachloro-m-xylene	79		30-150	B
Decachlorobiphenyl	71		30-150	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-13
Client ID: GRID R_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 11:30
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 10/17/21 21:14
Analyst: JAW
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 05:12
Cleanup Method: EPA 3665A
Cleanup Date: 10/16/21
Cleanup Method: EPA 3660B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	33.7	3.00	1	A
Aroclor 1221	ND		ug/kg	33.7	3.38	1	A
Aroclor 1232	ND		ug/kg	33.7	7.15	1	A
Aroclor 1242	ND		ug/kg	33.7	4.55	1	A
Aroclor 1248	ND		ug/kg	33.7	5.06	1	A
Aroclor 1254	ND		ug/kg	33.7	3.69	1	A
Aroclor 1260	ND		ug/kg	33.7	6.23	1	A
Aroclor 1262	ND		ug/kg	33.7	4.28	1	A
Aroclor 1268	ND		ug/kg	33.7	3.50	1	A
PCBs, Total	ND		ug/kg	33.7	3.00	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	74		30-150	A
Decachlorobiphenyl	79		30-150	A
2,4,5,6-Tetrachloro-m-xylene	82		30-150	B
Decachlorobiphenyl	77		30-150	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 10/17/21 20:24
Analyst: CW

Extraction Method: EPA 3546
Extraction Date: 10/15/21 15:17
Cleanup Method: EPA 3665A
Cleanup Date: 10/15/21
Cleanup Method: EPA 3660B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01,13 Batch: WG1559291-1						
Aroclor 1016	ND		ug/kg	32.5	2.89	A
Aroclor 1221	ND		ug/kg	32.5	3.26	A
Aroclor 1232	ND		ug/kg	32.5	6.90	A
Aroclor 1242	ND		ug/kg	32.5	4.38	A
Aroclor 1248	ND		ug/kg	32.5	4.88	A
Aroclor 1254	ND		ug/kg	32.5	3.56	A
Aroclor 1260	ND		ug/kg	32.5	6.01	A
Aroclor 1262	ND		ug/kg	32.5	4.13	A
Aroclor 1268	ND		ug/kg	32.5	3.37	A
PCBs, Total	ND		ug/kg	32.5	2.89	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73		30-150	A
Decachlorobiphenyl	83		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	78		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01,13 Batch: WG1559291-2 WG1559291-3									
Aroclor 1016	82		81		40-140	1		50	A
Aroclor 1260	87		83		40-140	5		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73		73		30-150	A
Decachlorobiphenyl	86		82		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		70		30-150	B
Decachlorobiphenyl	78		77		30-150	B

PESTICIDES

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-01
Client ID: GRID A_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 09:35
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 12:41
Analyst: SDC
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:25
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.85	0.363	1	A
Lindane	ND		ug/kg	0.773	0.345	1	A
Alpha-BHC	ND		ug/kg	0.773	0.219	1	A
Beta-BHC	ND		ug/kg	1.85	0.703	1	A
Heptachlor	ND		ug/kg	0.927	0.416	1	A
Aldrin	ND		ug/kg	1.85	0.653	1	A
Heptachlor epoxide	ND		ug/kg	3.48	1.04	1	A
Endrin	4.19		ug/kg	0.773	0.317	1	A
Endrin aldehyde	ND		ug/kg	2.32	0.812	1	A
Endrin ketone	ND		ug/kg	1.85	0.478	1	A
Dieldrin	55.9		ug/kg	1.16	0.580	1	A
4,4'-DDE	496	E	ug/kg	1.85	0.429	1	A
4,4'-DDD	55.5		ug/kg	1.85	0.662	1	A
4,4'-DDT	1120	E	ug/kg	3.48	1.49	1	A
Endosulfan I	ND		ug/kg	1.85	0.438	1	A
Endosulfan II	7.29		ug/kg	1.85	0.620	1	A
Endosulfan sulfate	31.9		ug/kg	0.773	0.368	1	A
Methoxychlor	ND		ug/kg	3.48	1.08	1	A
Toxaphene	ND		ug/kg	34.8	9.74	1	A
cis-Chlordane	ND		ug/kg	2.32	0.646	1	A
trans-Chlordane	ND		ug/kg	2.32	0.612	1	A
Chlordane	ND		ug/kg	15.4	6.14	1	A

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-01 Date Collected: 10/13/21 09:35

Client ID: GRID A_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		30-150	A
Decachlorobiphenyl	98		30-150	A
2,4,5,6-Tetrachloro-m-xylene	85		30-150	B
Decachlorobiphenyl	69		30-150	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-01
Client ID: GRID A_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 09:35
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 10/18/21 11:21
Analyst: SDC
Percent Solids: 83%
Methylation Date: 10/15/21 07:11

Extraction Method: EPA 8151A
Extraction Date: 10/14/21 10:18

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
2,4-D	ND		ug/kg	198	12.4	1	A
2,4,5-T	ND		ug/kg	198	6.12	1	A
2,4,5-TP (Silvex)	ND		ug/kg	198	5.25	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	76		30-150	A
DCAA	77		30-150	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-01 D
Client ID: GRID A_0-2
Sample Location: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/19/21 15:08
Analyst: AR
Percent Solids: 83%

Date Collected: 10/13/21 09:35
Date Received: 10/13/21
Field Prep: Not Specified

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:25
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDE	562		ug/kg	37.1	8.58	20	A
4,4'-DDT	1570		ug/kg	69.6	29.8	20	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-03
Client ID: GRID B_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 10:45
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/16/21 12:51
Analyst: AR
Percent Solids: 73%

Extraction Method: EPA 3546
Extraction Date: 10/14/21 22:19
Cleanup Method: EPA 3620B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	2.10	0.410	1	A
Lindane	ND		ug/kg	0.873	0.390	1	A
Alpha-BHC	ND		ug/kg	0.873	0.248	1	A
Beta-BHC	ND		ug/kg	2.10	0.795	1	A
Heptachlor	ND		ug/kg	1.05	0.470	1	A
Aldrin	ND		ug/kg	2.10	0.738	1	A
Heptachlor epoxide	ND		ug/kg	3.93	1.18	1	A
Endrin	1.53		ug/kg	0.873	0.358	1	A
Endrin aldehyde	ND		ug/kg	2.62	0.917	1	A
Endrin ketone	7.07	IP	ug/kg	2.10	0.540	1	A
Dieldrin	46.1		ug/kg	1.31	0.655	1	B
4,4'-DDE	408	E	ug/kg	2.10	0.485	1	B
4,4'-DDD	89.7		ug/kg	2.10	0.748	1	B
4,4'-DDT	350	E	ug/kg	3.93	1.68	1	B
Endosulfan I	ND		ug/kg	2.10	0.495	1	A
Endosulfan II	ND		ug/kg	2.10	0.700	1	A
Endosulfan sulfate	6.53		ug/kg	0.873	0.416	1	B
Methoxychlor	ND		ug/kg	3.93	1.22	1	A
Toxaphene	ND		ug/kg	39.3	11.0	1	A
cis-Chlordane	ND		ug/kg	2.62	0.730	1	A
trans-Chlordane	ND		ug/kg	2.62	0.692	1	A
Chlordane	ND		ug/kg	17.5	6.94	1	A

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-03 Date Collected: 10/13/21 10:45

Client ID: GRID B_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	69		30-150	A
Decachlorobiphenyl	99		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	92		30-150	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-03 D
Client ID: GRID B_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 10:45
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/19/21 15:51
Analyst: AR
Percent Solids: 73%

Extraction Method: EPA 3546
Extraction Date: 10/14/21 22:19
Cleanup Method: EPA 3620B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDE	401		ug/kg	10.5	2.42	5	A
4,4'-DDT	343		ug/kg	19.6	8.43	5	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-05
Client ID: GRID C_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 13:00
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/16/21 12:40
Analyst: AR
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 10/14/21 22:19
Cleanup Method: EPA 3620B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.86	0.364	1	A
Lindane	ND		ug/kg	0.775	0.346	1	A
Alpha-BHC	ND		ug/kg	0.775	0.220	1	A
Beta-BHC	ND		ug/kg	1.86	0.705	1	A
Heptachlor	ND		ug/kg	0.930	0.417	1	A
Aldrin	ND		ug/kg	1.86	0.655	1	A
Heptachlor epoxide	ND		ug/kg	3.49	1.05	1	A
Endrin	0.896		ug/kg	0.775	0.318	1	B
Endrin aldehyde	ND		ug/kg	2.32	0.814	1	A
Endrin ketone	10.4	IP	ug/kg	1.86	0.479	1	A
Dieldrin	16.7		ug/kg	1.16	0.581	1	A
4,4'-DDE	438	E	ug/kg	1.86	0.430	1	A
4,4'-DDD	5.46		ug/kg	1.86	0.663	1	B
4,4'-DDT	682	E	ug/kg	3.49	1.50	1	B
Endosulfan I	ND		ug/kg	1.86	0.439	1	A
Endosulfan II	3.18		ug/kg	1.86	0.621	1	A
Endosulfan sulfate	14.2		ug/kg	0.775	0.369	1	B
Methoxychlor	ND		ug/kg	3.49	1.08	1	A
Toxaphene	ND		ug/kg	34.9	9.76	1	A
cis-Chlordane	ND		ug/kg	2.32	0.648	1	A
trans-Chlordane	ND		ug/kg	2.32	0.614	1	A
Chlordane	ND		ug/kg	15.5	6.16	1	A

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-05 Date Collected: 10/13/21 13:00

Client ID: GRID C_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	A
Decachlorobiphenyl	114		30-150	A
2,4,5,6-Tetrachloro-m-xylene	80		30-150	B
Decachlorobiphenyl	100		30-150	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-05 D
Client ID: GRID C_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 13:00
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/19/21 15:40
Analyst: AR
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 10/14/21 22:19
Cleanup Method: EPA 3620B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDE	449		ug/kg	18.6	4.30	10	A
4,4'-DDT	681		ug/kg	34.9	15.0	10	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-07
Client ID: GRID D_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 14:30
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/16/21 12:29
Analyst: AR
Percent Solids: 79%

Extraction Method: EPA 3546
Extraction Date: 10/14/21 22:19
Cleanup Method: EPA 3620B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.95	0.382	1	A
Lindane	ND		ug/kg	0.812	0.363	1	A
Alpha-BHC	ND		ug/kg	0.812	0.231	1	A
Beta-BHC	ND		ug/kg	1.95	0.739	1	A
Heptachlor	ND		ug/kg	0.975	0.437	1	A
Aldrin	ND		ug/kg	1.95	0.686	1	A
Heptachlor epoxide	ND		ug/kg	3.66	1.10	1	A
Endrin	ND		ug/kg	0.812	0.333	1	A
Endrin aldehyde	ND		ug/kg	2.44	0.853	1	A
Endrin ketone	0.777	JIP	ug/kg	1.95	0.502	1	A
Dieldrin	2.72		ug/kg	1.22	0.609	1	B
4,4'-DDE	33.3		ug/kg	1.95	0.451	1	B
4,4'-DDD	ND		ug/kg	1.95	0.696	1	B
4,4'-DDT	32.8		ug/kg	3.66	1.57	1	B
Endosulfan I	ND		ug/kg	1.95	0.461	1	A
Endosulfan II	ND		ug/kg	1.95	0.652	1	A
Endosulfan sulfate	1.97		ug/kg	0.812	0.387	1	B
Methoxychlor	ND		ug/kg	3.66	1.14	1	A
Toxaphene	ND		ug/kg	36.6	10.2	1	A
cis-Chlordane	ND		ug/kg	2.44	0.679	1	A
trans-Chlordane	ND		ug/kg	2.44	0.644	1	A
Chlordane	ND		ug/kg	16.2	6.46	1	A

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-07 Date Collected: 10/13/21 14:30

Client ID: GRID D_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	58		30-150	A
Decachlorobiphenyl	81		30-150	A
2,4,5,6-Tetrachloro-m-xylene	60		30-150	B
Decachlorobiphenyl	76		30-150	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-09
Client ID: GRID P_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 08:26
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/16/21 12:19
Analyst: AR
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 10/14/21 22:19
Cleanup Method: EPA 3620B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.78	0.348	1	A
Lindane	ND		ug/kg	0.741	0.331	1	A
Alpha-BHC	ND		ug/kg	0.741	0.210	1	A
Beta-BHC	ND		ug/kg	1.78	0.674	1	A
Heptachlor	ND		ug/kg	0.889	0.399	1	A
Aldrin	ND		ug/kg	1.78	0.626	1	A
Heptachlor epoxide	ND		ug/kg	3.34	1.00	1	A
Endrin	1.74		ug/kg	0.741	0.304	1	B
Endrin aldehyde	ND		ug/kg	2.22	0.778	1	A
Endrin ketone	5.96	IP	ug/kg	1.78	0.458	1	A
Dieldrin	9.58		ug/kg	1.11	0.556	1	B
4,4'-DDE	153	E	ug/kg	1.78	0.411	1	A
4,4'-DDD	2.95		ug/kg	1.78	0.634	1	B
4,4'-DDT	256	E	ug/kg	3.34	1.43	1	B
Endosulfan I	ND		ug/kg	1.78	0.420	1	A
Endosulfan II	2.83		ug/kg	1.78	0.594	1	A
Endosulfan sulfate	6.69		ug/kg	0.741	0.353	1	B
Methoxychlor	ND		ug/kg	3.34	1.04	1	A
Toxaphene	ND		ug/kg	33.4	9.34	1	A
cis-Chlordane	ND		ug/kg	2.22	0.620	1	A
trans-Chlordane	ND		ug/kg	2.22	0.587	1	A
Chlordane	ND		ug/kg	14.8	5.89	1	A

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-09 Date Collected: 10/13/21 08:26

Client ID: GRID P_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		30-150	A
Decachlorobiphenyl	98		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		30-150	B
Decachlorobiphenyl	89		30-150	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-09 D
Client ID: GRID P_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 08:26
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/19/21 15:29
Analyst: AR
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 10/14/21 22:19
Cleanup Method: EPA 3620B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDE	150		ug/kg	8.89	2.06	5	A
4,4'-DDT	256		ug/kg	16.7	7.15	5	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-11
Client ID: GRID Q_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 10:20
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/16/21 12:08
Analyst: AR
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 10/14/21 22:19
Cleanup Method: EPA 3620B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.99	0.390	1	A
Lindane	ND		ug/kg	0.830	0.371	1	A
Alpha-BHC	ND		ug/kg	0.830	0.236	1	A
Beta-BHC	ND		ug/kg	1.99	0.756	1	A
Heptachlor	ND		ug/kg	0.996	0.447	1	A
Aldrin	ND		ug/kg	1.99	0.702	1	A
Heptachlor epoxide	ND		ug/kg	3.74	1.12	1	A
Endrin	2.24		ug/kg	0.830	0.340	1	B
Endrin aldehyde	ND		ug/kg	2.49	0.872	1	A
Endrin ketone	6.02	IP	ug/kg	1.99	0.513	1	A
Dieldrin	26.1		ug/kg	1.24	0.623	1	B
4,4'-DDE	272	E	ug/kg	1.99	0.461	1	B
4,4'-DDD	10.4	P	ug/kg	1.99	0.711	1	B
4,4'-DDT	789	E	ug/kg	3.74	1.60	1	B
Endosulfan I	ND		ug/kg	1.99	0.471	1	A
Endosulfan II	1.96	J	ug/kg	1.99	0.666	1	A
Endosulfan sulfate	10.1		ug/kg	0.830	0.395	1	B
Methoxychlor	ND		ug/kg	3.74	1.16	1	A
Toxaphene	ND		ug/kg	37.4	10.5	1	A
cis-Chlordane	ND		ug/kg	2.49	0.694	1	A
trans-Chlordane	ND		ug/kg	2.49	0.658	1	A
Chlordane	ND		ug/kg	16.6	6.60	1	A

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-11 Date Collected: 10/13/21 10:20

Client ID: GRID Q_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	59		30-150	A
Decachlorobiphenyl	76		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		30-150	B
Decachlorobiphenyl	83		30-150	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-11 D
Client ID: GRID Q_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 10:20
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/19/21 15:19
Analyst: AR
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 10/14/21 22:19
Cleanup Method: EPA 3620B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDE	276		ug/kg	19.9	4.61	10	B
4,4'-DDT	799		ug/kg	37.4	16.0	10	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-13
Client ID: GRID R_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 11:30
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/16/21 13:02
Analyst: AR
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 10/14/21 22:19
Cleanup Method: EPA 3620B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.67	0.328	1	A
Lindane	ND		ug/kg	0.698	0.312	1	A
Alpha-BHC	ND		ug/kg	0.698	0.198	1	A
Beta-BHC	ND		ug/kg	1.67	0.635	1	A
Heptachlor	ND		ug/kg	0.837	0.375	1	A
Aldrin	ND		ug/kg	1.67	0.590	1	A
Heptachlor epoxide	ND		ug/kg	3.14	0.942	1	A
Endrin	1.02		ug/kg	0.698	0.286	1	B
Endrin aldehyde	ND		ug/kg	2.09	0.733	1	A
Endrin ketone	9.67	IP	ug/kg	1.67	0.431	1	A
Dieldrin	9.69		ug/kg	1.05	0.523	1	B
4,4'-DDE	253	E	ug/kg	1.67	0.387	1	A
4,4'-DDD	4.01		ug/kg	1.67	0.597	1	B
4,4'-DDT	485	E	ug/kg	3.14	1.35	1	B
Endosulfan I	3.64	P	ug/kg	1.67	0.396	1	B
Endosulfan II	6.93		ug/kg	1.67	0.560	1	A
Endosulfan sulfate	16.8		ug/kg	0.698	0.332	1	B
Methoxychlor	ND		ug/kg	3.14	0.977	1	A
Toxaphene	ND		ug/kg	31.4	8.79	1	A
cis-Chlordane	ND		ug/kg	2.09	0.583	1	A
trans-Chlordane	ND		ug/kg	2.09	0.553	1	A
Chlordane	ND		ug/kg	14.0	5.55	1	A

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-13 Date Collected: 10/13/21 11:30

Client ID: GRID R_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		30-150	A
Decachlorobiphenyl	101		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	96		30-150	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-13
Client ID: GRID R_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 11:30
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 10/18/21 11:39
Analyst: SDC
Percent Solids: 94%
Methylation Date: 10/15/21 07:11

Extraction Method: EPA 8151A
Extraction Date: 10/14/21 10:18

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
2,4-D	ND		ug/kg	173	10.9	1	A
2,4,5-T	ND		ug/kg	173	5.37	1	A
2,4,5-TP (Silvex)	ND		ug/kg	173	4.60	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	84		30-150	A
DCAA	76		30-150	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-13 D
Client ID: GRID R_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 11:30
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/19/21 16:02
Analyst: AR
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 10/14/21 22:19
Cleanup Method: EPA 3620B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDE	242		ug/kg	16.7	3.87	10	A
4,4'-DDT	459		ug/kg	31.4	13.5	10	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-15
Client ID: GRID S_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 13:40
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/16/21 13:13
Analyst: AR
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 10/14/21 22:19
Cleanup Method: EPA 3620B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.66	0.325	1	A
Lindane	ND		ug/kg	0.692	0.309	1	A
Alpha-BHC	ND		ug/kg	0.692	0.196	1	A
Beta-BHC	ND		ug/kg	1.66	0.630	1	A
Heptachlor	ND		ug/kg	0.831	0.372	1	A
Aldrin	ND		ug/kg	1.66	0.585	1	A
Heptachlor epoxide	ND		ug/kg	3.12	0.934	1	A
Endrin	ND		ug/kg	0.692	0.284	1	A
Endrin aldehyde	ND		ug/kg	2.08	0.727	1	A
Endrin ketone	2.84	IP	ug/kg	1.66	0.428	1	A
Dieldrin	2.69		ug/kg	1.04	0.519	1	A
4,4'-DDE	53.3		ug/kg	1.66	0.384	1	B
4,4'-DDD	2.06	P	ug/kg	1.66	0.592	1	B
4,4'-DDT	107		ug/kg	3.12	1.34	1	B
Endosulfan I	ND		ug/kg	1.66	0.392	1	A
Endosulfan II	1.72	P	ug/kg	1.66	0.555	1	A
Endosulfan sulfate	3.95		ug/kg	0.692	0.330	1	B
Methoxychlor	ND		ug/kg	3.12	0.969	1	A
Toxaphene	ND		ug/kg	31.2	8.72	1	A
cis-Chlordane	ND		ug/kg	2.08	0.579	1	A
trans-Chlordane	ND		ug/kg	2.08	0.548	1	A
Chlordane	ND		ug/kg	13.8	5.50	1	A

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-15 Date Collected: 10/13/21 13:40

Client ID: GRID S_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	98		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	96		30-150	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-17
Client ID: GRID T_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 15:00
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/16/21 13:24
Analyst: AR
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 10/14/21 22:19
Cleanup Method: EPA 3620B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.87	0.367	1	A
Lindane	ND		ug/kg	0.780	0.349	1	A
Alpha-BHC	ND		ug/kg	0.780	0.222	1	A
Beta-BHC	ND		ug/kg	1.87	0.710	1	A
Heptachlor	ND		ug/kg	0.936	0.420	1	A
Aldrin	ND		ug/kg	1.87	0.659	1	A
Heptachlor epoxide	ND		ug/kg	3.51	1.05	1	A
Endrin	ND		ug/kg	0.780	0.320	1	A
Endrin aldehyde	ND		ug/kg	2.34	0.819	1	A
Endrin ketone	2.50	IP	ug/kg	1.87	0.482	1	A
Dieldrin	2.90		ug/kg	1.17	0.585	1	A
4,4'-DDE	63.8		ug/kg	1.87	0.433	1	A
4,4'-DDD	3.47		ug/kg	1.87	0.668	1	B
4,4'-DDT	122		ug/kg	3.51	1.51	1	B
Endosulfan I	ND		ug/kg	1.87	0.442	1	A
Endosulfan II	2.53		ug/kg	1.87	0.626	1	A
Endosulfan sulfate	3.42		ug/kg	0.780	0.371	1	A
Methoxychlor	ND		ug/kg	3.51	1.09	1	A
Toxaphene	ND		ug/kg	35.1	9.83	1	A
cis-Chlordane	ND		ug/kg	2.34	0.652	1	A
trans-Chlordane	ND		ug/kg	2.34	0.618	1	A
Chlordane	ND		ug/kg	15.6	6.20	1	A

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-17 Date Collected: 10/13/21 15:00

Client ID: GRID T_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	80		30-150	A
Decachlorobiphenyl	105		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		30-150	B
Decachlorobiphenyl	102		30-150	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8151A
Analytical Date: 10/15/21 13:12
Analyst: EJL

Extraction Method: EPA 8151A
Extraction Date: 10/14/21 10:12

Methylation Date: 10/15/21 07:11

Parameter	Result	Qualifier	Units	RL	MDL	Column
Chlorinated Herbicides by GC - Westborough Lab for sample(s): 01,13 Batch: WG1558568-1						
2,4-D	ND		ug/kg	163	10.3	A
2,4,5-T	ND		ug/kg	163	5.06	A
2,4,5-TP (Silvex)	ND		ug/kg	163	4.34	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
DCAA	85		30-150	A
DCAA	75		30-150	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/16/21 13:35
Analyst: SDC

Extraction Method: EPA 3546
Extraction Date: 10/14/21 22:19
Cleanup Method: EPA 3620B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 03,05,07,09,11,13,15,17 Batch: WG1558903-1						
Delta-BHC	ND		ug/kg	1.55	0.304	A
Lindane	ND		ug/kg	0.646	0.289	A
Alpha-BHC	ND		ug/kg	0.646	0.184	A
Beta-BHC	ND		ug/kg	1.55	0.588	A
Heptachlor	ND		ug/kg	0.776	0.348	A
Aldrin	ND		ug/kg	1.55	0.546	A
Heptachlor epoxide	ND		ug/kg	2.91	0.873	A
Endrin	ND		ug/kg	0.646	0.265	A
Endrin aldehyde	ND		ug/kg	1.94	0.679	A
Endrin ketone	ND		ug/kg	1.55	0.399	A
Dieldrin	ND		ug/kg	0.970	0.485	A
4,4'-DDE	ND		ug/kg	1.55	0.359	A
4,4'-DDD	ND		ug/kg	1.55	0.553	A
4,4'-DDT	ND		ug/kg	2.91	1.25	A
Endosulfan I	ND		ug/kg	1.55	0.366	A
Endosulfan II	ND		ug/kg	1.55	0.518	A
Endosulfan sulfate	ND		ug/kg	0.646	0.308	A
Methoxychlor	ND		ug/kg	2.91	0.905	A
Toxaphene	ND		ug/kg	29.1	8.14	A
cis-Chlordane	ND		ug/kg	1.94	0.540	A
trans-Chlordane	ND		ug/kg	1.94	0.512	A
Chlordane	ND		ug/kg	12.9	5.14	A

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/16/21 13:35
Analyst: SDC

Extraction Method: EPA 3546
Extraction Date: 10/14/21 22:19
Cleanup Method: EPA 3620B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 03,05,07,09,11,13,15,17 Batch: WG1558903-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	92		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	87		30-150	B

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/18/21 12:08
Analyst: SDC

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:25
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01 Batch: WG1559426-1						
Delta-BHC	ND		ug/kg	1.58	0.310	A
Lindane	ND		ug/kg	0.660	0.295	A
Alpha-BHC	ND		ug/kg	0.660	0.188	A
Beta-BHC	ND		ug/kg	1.58	0.601	A
Heptachlor	ND		ug/kg	0.793	0.355	A
Aldrin	ND		ug/kg	1.58	0.558	A
Heptachlor epoxide	ND		ug/kg	2.97	0.892	A
Endrin	ND		ug/kg	0.660	0.271	A
Endrin aldehyde	ND		ug/kg	1.98	0.694	A
Endrin ketone	ND		ug/kg	1.58	0.408	A
Dieldrin	ND		ug/kg	0.991	0.495	A
4,4'-DDE	ND		ug/kg	1.58	0.366	A
4,4'-DDD	ND		ug/kg	1.58	0.565	A
4,4'-DDT	ND		ug/kg	2.97	1.27	A
Endosulfan I	ND		ug/kg	1.58	0.374	A
Endosulfan II	ND		ug/kg	1.58	0.530	A
Endosulfan sulfate	ND		ug/kg	0.660	0.314	A
Methoxychlor	ND		ug/kg	2.97	0.925	A
Toxaphene	ND		ug/kg	29.7	8.32	A
cis-Chlordane	ND		ug/kg	1.98	0.552	A
trans-Chlordane	ND		ug/kg	1.98	0.523	A
Chlordane	ND		ug/kg	13.2	5.25	A

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/18/21 12:08
Analyst: SDC

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:25
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01 Batch: WG1559426-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	84		30-150	A
Decachlorobiphenyl	109		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	76		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: HKV2101

Lab Number: L2155998

Report Date: 10/20/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Chlorinated Herbicides by GC - Westborough Lab Associated sample(s): 01,13 Batch: WG1558568-2 WG1558568-3									
2,4-D	63		61		30-150	3		30	A
2,4,5-T	74		69		30-150	7		30	A
2,4,5-TP (Silvex)	76		68		30-150	11		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
DCAA	84		69		30-150	A
DCAA	92		75		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: HKV2101

Lab Number: L2155998

Report Date: 10/20/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 03,05,07,09,11,13,15,17 Batch: WG1558903-2 WG1558903-3									
Delta-BHC	75		69		30-150	8		30	A
Lindane	79		74		30-150	7		30	A
Alpha-BHC	79		74		30-150	7		30	A
Beta-BHC	81		73		30-150	10		30	A
Heptachlor	89		84		30-150	6		30	A
Aldrin	79		74		30-150	7		30	A
Heptachlor epoxide	73		76		30-150	4		30	A
Endrin	86		80		30-150	7		30	A
Endrin aldehyde	63		56		30-150	12		30	A
Endrin ketone	84		77		30-150	9		30	A
Dieldrin	85		79		30-150	7		30	A
4,4'-DDE	77		73		30-150	5		30	A
4,4'-DDD	85		79		30-150	7		30	A
4,4'-DDT	93		86		30-150	8		30	A
Endosulfan I	77		72		30-150	7		30	A
Endosulfan II	84		75		30-150	11		30	A
Endosulfan sulfate	70		62		30-150	12		30	A
Methoxychlor	87		81		30-150	7		30	A
cis-Chlordane	67		63		30-150	6		30	A
trans-Chlordane	84		79		30-150	6		30	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: HKV2101

Lab Number: L2155998

Report Date: 10/20/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 03,05,07,09,11,13,15,17 Batch: WG1558903-2 WG1558903-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		71		30-150	A
Decachlorobiphenyl	103		104		30-150	A
2,4,5,6-Tetrachloro-m-xylene	68		67		30-150	B
Decachlorobiphenyl	96		100		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: HKV2101

Lab Number: L2155998

Report Date: 10/20/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01 Batch: WG1559426-2 WG1559426-3									
Delta-BHC	86		81		30-150	6		30	A
Lindane	87		84		30-150	4		30	A
Alpha-BHC	83		82		30-150	1		30	A
Beta-BHC	90		90		30-150	0		30	A
Heptachlor	95		94		30-150	1		30	A
Aldrin	90		89		30-150	1		30	A
Heptachlor epoxide	81		76		30-150	6		30	A
Endrin	91		85		30-150	7		30	A
Endrin aldehyde	70		61		30-150	14		30	A
Endrin ketone	86		84		30-150	2		30	A
Dieldrin	94		89		30-150	5		30	A
4,4'-DDE	88		83		30-150	6		30	A
4,4'-DDD	93		87		30-150	7		30	A
4,4'-DDT	82		80		30-150	2		30	A
Endosulfan I	83		80		30-150	4		30	A
Endosulfan II	87		82		30-150	6		30	A
Endosulfan sulfate	82		80		30-150	2		30	A
Methoxychlor	106		108		30-150	2		30	A
cis-Chlordane	75		73		30-150	3		30	A
trans-Chlordane	106		101		30-150	5		30	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: HKV2101

Lab Number: L2155998

Report Date: 10/20/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01 Batch: WG1559426-2 WG1559426-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	88		85		30-150	A
Decachlorobiphenyl	108		107		30-150	A
2,4,5,6-Tetrachloro-m-xylene	78		77		30-150	B
Decachlorobiphenyl	77		72		30-150	B

METALS

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-01 Date Collected: 10/13/21 09:35

Client ID: GRID A_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	12200		mg/kg	9.28	2.51	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	4.64	0.353	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Arsenic, Total	50.4		mg/kg	0.928	0.193	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Barium, Total	25.8		mg/kg	0.928	0.162	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Beryllium, Total	0.353	J	mg/kg	0.464	0.031	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Cadmium, Total	0.269	J	mg/kg	0.928	0.091	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Calcium, Total	453		mg/kg	9.28	3.25	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Chromium, Total	14.4		mg/kg	0.928	0.089	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Cobalt, Total	2.24		mg/kg	1.86	0.154	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Copper, Total	40.0		mg/kg	0.928	0.240	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Iron, Total	13900		mg/kg	4.64	0.838	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Lead, Total	55.7		mg/kg	4.64	0.249	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Magnesium, Total	980		mg/kg	9.28	1.43	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Manganese, Total	63.8		mg/kg	0.928	0.148	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Mercury, Total	0.193		mg/kg	0.099	0.065	1	10/14/21 20:21	10/18/21 08:06	EPA 7471B	1,7471B	AC
Nickel, Total	5.10		mg/kg	2.32	0.225	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Potassium, Total	338		mg/kg	232	13.4	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Selenium, Total	0.297	J	mg/kg	1.86	0.240	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	0.928	0.263	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Sodium, Total	168		mg/kg	94.0	1.48	1	10/16/21 06:00	10/17/21 18:09	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.86	0.292	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Vanadium, Total	24.4		mg/kg	0.928	0.188	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD
Zinc, Total	32.5		mg/kg	4.64	0.272	2	10/14/21 19:40	10/15/21 21:12	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-03 Date Collected: 10/13/21 10:45

Client ID: GRID B_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	7460		mg/kg	10.5	2.84	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	5.25	0.399	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Arsenic, Total	31.6		mg/kg	1.05	0.218	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Barium, Total	21.0		mg/kg	1.05	0.183	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Beryllium, Total	0.231	J	mg/kg	0.525	0.035	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Cadmium, Total	0.252	J	mg/kg	1.05	0.103	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Calcium, Total	475		mg/kg	10.5	3.68	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Chromium, Total	9.73		mg/kg	1.05	0.101	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Cobalt, Total	1.45	J	mg/kg	2.10	0.174	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Copper, Total	31.6		mg/kg	1.05	0.271	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Iron, Total	8910		mg/kg	5.25	0.948	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Lead, Total	40.3		mg/kg	5.25	0.281	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Magnesium, Total	564		mg/kg	10.5	1.62	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Manganese, Total	44.5		mg/kg	1.05	0.167	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Mercury, Total	0.185		mg/kg	0.099	0.065	1	10/14/21 20:21	10/18/21 08:09	EPA 7471B	1,7471B	AC
Nickel, Total	3.41		mg/kg	2.62	0.254	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Potassium, Total	217	J	mg/kg	262	15.1	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Selenium, Total	ND		mg/kg	2.10	0.271	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	1.05	0.297	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Sodium, Total	25.5	J	mg/kg	107	1.68	1	10/16/21 06:00	10/17/21 18:55	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	2.10	0.331	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Vanadium, Total	15.6		mg/kg	1.05	0.213	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD
Zinc, Total	23.3		mg/kg	5.25	0.308	2	10/14/21 19:40	10/15/21 21:17	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-05 Date Collected: 10/13/21 13:00

Client ID: GRID C_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6790		mg/kg	9.17	2.48	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	4.58	0.348	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Arsenic, Total	21.1		mg/kg	0.917	0.191	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Barium, Total	12.5		mg/kg	0.917	0.160	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Beryllium, Total	0.202	J	mg/kg	0.458	0.030	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Cadmium, Total	0.119	J	mg/kg	0.917	0.090	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Calcium, Total	153		mg/kg	9.17	3.21	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Chromium, Total	7.58		mg/kg	0.917	0.088	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Cobalt, Total	1.60	J	mg/kg	1.83	0.152	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Copper, Total	14.9		mg/kg	0.917	0.236	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Iron, Total	7570		mg/kg	4.58	0.828	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Lead, Total	10.2		mg/kg	4.58	0.246	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Magnesium, Total	675		mg/kg	9.17	1.41	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Manganese, Total	35.2		mg/kg	0.917	0.146	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.084	0.055	1	10/14/21 20:21	10/18/21 08:12	EPA 7471B	1,7471B	AC
Nickel, Total	3.27		mg/kg	2.29	0.222	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Potassium, Total	157	J	mg/kg	229	13.2	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Selenium, Total	ND		mg/kg	1.83	0.236	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	0.917	0.260	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Sodium, Total	21.5	J	mg/kg	90.1	1.42	1	10/16/21 06:00	10/17/21 19:00	EPA 3050B	1,6010D	DL
Thallium, Total	0.330	J	mg/kg	1.83	0.289	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Vanadium, Total	13.3		mg/kg	0.917	0.186	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD
Zinc, Total	10.8		mg/kg	4.58	0.269	2	10/14/21 19:40	10/15/21 21:21	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-07 Date Collected: 10/13/21 14:30

Client ID: GRID D_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	5660		mg/kg	9.94	2.68	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	4.97	0.378	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Arsenic, Total	11.8		mg/kg	0.994	0.207	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Barium, Total	9.94		mg/kg	0.994	0.173	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Beryllium, Total	0.149	J	mg/kg	0.497	0.033	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Cadmium, Total	0.099	J	mg/kg	0.994	0.098	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Calcium, Total	179		mg/kg	9.94	3.48	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Chromium, Total	6.14		mg/kg	0.994	0.096	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Cobalt, Total	1.48	J	mg/kg	1.99	0.165	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Copper, Total	6.11		mg/kg	0.994	0.256	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Iron, Total	6200		mg/kg	4.97	0.898	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Lead, Total	8.42		mg/kg	4.97	0.266	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Magnesium, Total	500		mg/kg	9.94	1.53	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Manganese, Total	32.6		mg/kg	0.994	0.158	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.10	0.065	1	10/14/21 20:21	10/18/21 08:16	EPA 7471B	1,7471B	AC
Nickel, Total	2.72		mg/kg	2.49	0.241	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Potassium, Total	135	J	mg/kg	249	14.3	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Selenium, Total	ND		mg/kg	1.99	0.256	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	0.994	0.281	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Sodium, Total	22.2	J	mg/kg	97.0	1.53	1	10/16/21 06:00	10/17/21 19:04	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.99	0.313	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Vanadium, Total	10.7		mg/kg	0.994	0.202	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD
Zinc, Total	9.59		mg/kg	4.97	0.291	2	10/14/21 19:40	10/15/21 21:26	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-09 Date Collected: 10/13/21 08:26

Client ID: GRID P_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	4190		mg/kg	8.96	2.42	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	4.48	0.340	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Arsenic, Total	10.2		mg/kg	0.896	0.186	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Barium, Total	13.6		mg/kg	0.896	0.156	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Beryllium, Total	0.125	J	mg/kg	0.448	0.030	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Cadmium, Total	0.143	J	mg/kg	0.896	0.088	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Calcium, Total	490		mg/kg	8.96	3.14	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Chromium, Total	6.84		mg/kg	0.896	0.086	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Cobalt, Total	1.16	J	mg/kg	1.79	0.149	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Copper, Total	10.9		mg/kg	0.896	0.231	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Iron, Total	5400		mg/kg	4.48	0.809	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Lead, Total	58.4		mg/kg	4.48	0.240	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Magnesium, Total	424		mg/kg	8.96	1.38	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Manganese, Total	38.8		mg/kg	0.896	0.142	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.090	0.059	1	10/14/21 20:21	10/18/21 08:19	EPA 7471B	1,7471B	AC
Nickel, Total	2.63		mg/kg	2.24	0.217	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Potassium, Total	120	J	mg/kg	224	12.9	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Selenium, Total	ND		mg/kg	1.79	0.231	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	0.896	0.254	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Sodium, Total	46.8	J	mg/kg	91.5	1.44	1	10/16/21 06:00	10/17/21 19:09	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.79	0.282	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Vanadium, Total	10.2		mg/kg	0.896	0.182	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD
Zinc, Total	26.9		mg/kg	4.48	0.262	2	10/14/21 19:40	10/15/21 21:30	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-11 Date Collected: 10/13/21 10:20

Client ID: GRID Q_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	5060		mg/kg	10.0	2.71	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	5.03	0.382	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Arsenic, Total	18.0		mg/kg	1.00	0.209	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Barium, Total	17.1		mg/kg	1.00	0.175	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Beryllium, Total	0.151	J	mg/kg	0.503	0.033	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Cadmium, Total	0.141	J	mg/kg	1.00	0.099	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Calcium, Total	514		mg/kg	10.0	3.52	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Chromium, Total	6.39		mg/kg	1.00	0.097	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Cobalt, Total	0.774	J	mg/kg	2.01	0.167	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Copper, Total	18.3		mg/kg	1.00	0.259	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Iron, Total	5920		mg/kg	5.03	0.908	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Lead, Total	20.6		mg/kg	5.03	0.269	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Magnesium, Total	332		mg/kg	10.0	1.55	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Manganese, Total	24.4		mg/kg	1.00	0.160	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Mercury, Total	0.103		mg/kg	0.101	0.066	1	10/14/21 20:21	10/18/21 08:22	EPA 7471B	1,7471B	AC
Nickel, Total	1.83	J	mg/kg	2.51	0.243	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Potassium, Total	129	J	mg/kg	251	14.5	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Selenium, Total	ND		mg/kg	2.01	0.259	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	1.00	0.284	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Sodium, Total	24.2	J	mg/kg	99.6	1.57	1	10/16/21 06:00	10/17/21 19:13	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	2.01	0.317	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Vanadium, Total	10.8		mg/kg	1.00	0.204	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD
Zinc, Total	11.4		mg/kg	5.03	0.295	2	10/14/21 19:40	10/15/21 21:44	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-13 Date Collected: 10/13/21 11:30

Client ID: GRID R_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	3780		mg/kg	8.06	2.18	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	4.03	0.306	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Arsenic, Total	11.4		mg/kg	0.806	0.168	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Barium, Total	9.82		mg/kg	0.806	0.140	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Beryllium, Total	0.105	J	mg/kg	0.403	0.027	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Cadmium, Total	0.089	J	mg/kg	0.806	0.079	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Calcium, Total	430		mg/kg	8.06	2.82	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Chromium, Total	4.61		mg/kg	0.806	0.077	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Cobalt, Total	0.500	J	mg/kg	1.61	0.134	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Copper, Total	11.6		mg/kg	0.806	0.208	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Iron, Total	4100		mg/kg	4.03	0.728	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Lead, Total	12.0		mg/kg	4.03	0.216	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Magnesium, Total	255		mg/kg	8.06	1.24	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Manganese, Total	16.2		mg/kg	0.806	0.128	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.085	0.055	1	10/14/21 20:21	10/18/21 08:26	EPA 7471B	1,7471B	AC
Nickel, Total	1.34	J	mg/kg	2.01	0.195	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Potassium, Total	88.6	J	mg/kg	201	11.6	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Selenium, Total	0.209	J	mg/kg	1.61	0.208	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	0.806	0.228	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Sodium, Total	14.2	J	mg/kg	80.6	1.27	1	10/16/21 06:00	10/17/21 19:18	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.61	0.254	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Vanadium, Total	7.93		mg/kg	0.806	0.164	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD
Zinc, Total	6.91		mg/kg	4.03	0.236	2	10/14/21 19:40	10/15/21 21:48	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-15 Date Collected: 10/13/21 13:40

Client ID: GRID S_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	4470		mg/kg	8.33	2.25	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	4.16	0.316	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Arsenic, Total	12.3		mg/kg	0.833	0.173	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Barium, Total	7.32		mg/kg	0.833	0.145	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Beryllium, Total	0.117	J	mg/kg	0.416	0.028	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Cadmium, Total	ND		mg/kg	0.833	0.082	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Calcium, Total	296		mg/kg	8.33	2.92	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Chromium, Total	5.02		mg/kg	0.833	0.080	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Cobalt, Total	0.692	J	mg/kg	1.67	0.138	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Copper, Total	6.56		mg/kg	0.833	0.215	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Iron, Total	5010		mg/kg	4.16	0.752	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Lead, Total	7.76		mg/kg	4.16	0.223	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Magnesium, Total	334		mg/kg	8.33	1.28	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Manganese, Total	18.0		mg/kg	0.833	0.132	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.076	0.050	1	10/14/21 20:21	10/18/21 08:45	EPA 7471B	1,7471B	AC
Nickel, Total	1.79	J	mg/kg	2.08	0.202	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Potassium, Total	99.9	J	mg/kg	208	12.0	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Selenium, Total	ND		mg/kg	1.67	0.215	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	0.833	0.236	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Sodium, Total	15.4	J	mg/kg	82.4	1.30	1	10/16/21 06:00	10/17/21 19:22	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.67	0.262	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Vanadium, Total	9.18		mg/kg	0.833	0.169	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD
Zinc, Total	6.96		mg/kg	4.16	0.244	2	10/14/21 19:40	10/15/21 21:53	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-17 Date Collected: 10/13/21 15:00

Client ID: GRID T_0-2 Date Received: 10/13/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	2460		mg/kg	9.61	2.59	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	4.80	0.365	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Arsenic, Total	5.83		mg/kg	0.961	0.200	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Barium, Total	4.30		mg/kg	0.961	0.167	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Beryllium, Total	0.058	J	mg/kg	0.480	0.032	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Cadmium, Total	ND		mg/kg	0.961	0.094	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Calcium, Total	170		mg/kg	9.61	3.36	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Chromium, Total	4.04		mg/kg	0.961	0.092	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Cobalt, Total	1.34	J	mg/kg	1.92	0.160	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Copper, Total	4.08		mg/kg	0.961	0.248	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Iron, Total	4410		mg/kg	4.80	0.868	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Lead, Total	5.26		mg/kg	4.80	0.258	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Magnesium, Total	189		mg/kg	9.61	1.48	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Manganese, Total	43.4		mg/kg	0.961	0.153	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.098	0.064	1	10/14/21 20:21	10/18/21 08:48	EPA 7471B	1,7471B	AC
Nickel, Total	1.18	J	mg/kg	2.40	0.232	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Potassium, Total	65.5	J	mg/kg	240	13.8	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Selenium, Total	ND		mg/kg	1.92	0.248	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	0.961	0.272	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Sodium, Total	12.9	J	mg/kg	94.3	1.48	1	10/16/21 06:00	10/17/21 19:27	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.92	0.303	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Vanadium, Total	5.38		mg/kg	0.961	0.195	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD
Zinc, Total	4.28	J	mg/kg	4.80	0.282	2	10/14/21 19:40	10/15/21 21:58	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03,05,07,09,11,13,15,17 Batch: WG1558704-1										
Aluminum, Total	ND		mg/kg	4.00	1.08	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Antimony, Total	ND		mg/kg	2.00	0.152	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Arsenic, Total	ND		mg/kg	0.400	0.083	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Barium, Total	ND		mg/kg	0.400	0.070	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Beryllium, Total	ND		mg/kg	0.200	0.013	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Cadmium, Total	ND		mg/kg	0.400	0.039	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Calcium, Total	ND		mg/kg	4.00	1.40	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Chromium, Total	0.096	J	mg/kg	0.400	0.038	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Cobalt, Total	ND		mg/kg	0.800	0.066	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Copper, Total	ND		mg/kg	0.400	0.103	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Iron, Total	0.448	J	mg/kg	2.00	0.361	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Lead, Total	ND		mg/kg	2.00	0.107	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Magnesium, Total	ND		mg/kg	4.00	0.616	1	10/14/21 19:40	10/17/21 16:04	1,6010D	DL
Manganese, Total	ND		mg/kg	0.400	0.064	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Nickel, Total	ND		mg/kg	1.00	0.097	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Potassium, Total	7.42	J	mg/kg	100	5.76	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Selenium, Total	ND		mg/kg	0.800	0.103	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Silver, Total	ND		mg/kg	0.400	0.113	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Thallium, Total	ND		mg/kg	0.800	0.126	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Vanadium, Total	ND		mg/kg	0.400	0.081	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD
Zinc, Total	ND		mg/kg	2.00	0.117	1	10/14/21 19:40	10/15/21 18:40	1,6010D	GD

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03,05,07,09,11,13,15,17 Batch: WG1558705-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	10/14/21 20:21	10/18/21 07:24	1,7471B	AC

Project Name: HKV2101 **Lab Number:** L2155998

Project Number: HKV2101 **Report Date:** 10/20/21

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03,05,07,09,11,13,15,17 Batch: WG1559427-1										
Aluminum, Total	ND		mg/kg	4.00	1.08	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Antimony, Total	ND		mg/kg	2.00	0.152	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Arsenic, Total	ND		mg/kg	0.400	0.083	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Barium, Total	ND		mg/kg	0.400	0.070	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Beryllium, Total	ND		mg/kg	0.200	0.013	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Cadmium, Total	ND		mg/kg	0.400	0.039	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Calcium, Total	ND		mg/kg	4.00	1.40	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Chromium, Total	0.088	J	mg/kg	0.400	0.038	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Cobalt, Total	ND		mg/kg	0.800	0.066	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Copper, Total	ND		mg/kg	0.400	0.103	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Iron, Total	1.98	J	mg/kg	2.00	0.361	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Lead, Total	ND		mg/kg	2.00	0.107	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Magnesium, Total	ND		mg/kg	4.00	0.616	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Manganese, Total	0.068	J	mg/kg	0.400	0.064	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Nickel, Total	ND		mg/kg	1.00	0.097	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Potassium, Total	ND		mg/kg	100	5.76	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Selenium, Total	ND		mg/kg	0.800	0.103	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Silver, Total	ND		mg/kg	0.400	0.113	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Sodium, Total	22.5	J	mg/kg	80.0	1.26	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Thallium, Total	ND		mg/kg	0.800	0.126	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Vanadium, Total	ND		mg/kg	0.400	0.081	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL
Zinc, Total	ND		mg/kg	2.00	0.117	1	10/16/21 06:00	10/17/21 17:50	1,6010D	DL

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: HKV2101

Lab Number: L2155998

Report Date: 10/20/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 Batch: WG1558704-2 SRM Lot Number: D109-540								
Aluminum, Total	71		-		50-150	-		
Antimony, Total	129		-		19-250	-		
Arsenic, Total	102		-		70-130	-		
Barium, Total	98		-		75-125	-		
Beryllium, Total	95		-		75-125	-		
Cadmium, Total	98		-		75-125	-		
Calcium, Total	92		-		73-128	-		
Chromium, Total	99		-		70-130	-		
Cobalt, Total	99		-		75-125	-		
Copper, Total	98		-		75-125	-		
Iron, Total	96		-		35-165	-		
Lead, Total	99		-		72-128	-		
Magnesium, Total	90		-		62-138	-		
Manganese, Total	92		-		74-126	-		
Nickel, Total	99		-		70-130	-		
Potassium, Total	90		-		59-141	-		
Selenium, Total	102		-		68-132	-		
Silver, Total	102		-		68-131	-		
Thallium, Total	98		-		68-131	-		
Vanadium, Total	102		-		59-141	-		
Zinc, Total	99		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: HKV2101

Lab Number: L2155998

Report Date: 10/20/21

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 Batch: WG1558705-2 SRM Lot Number: D109-540					
Mercury, Total	104	-	60-140	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: HKV2101

Lab Number: L2155998

Report Date: 10/20/21

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 Batch: WG1559427-2 SRM Lot Number: D109-540					
Aluminum, Total	70	-	50-150	-	
Antimony, Total	128	-	19-250	-	
Arsenic, Total	104	-	70-130	-	
Barium, Total	101	-	75-125	-	
Beryllium, Total	96	-	75-125	-	
Cadmium, Total	103	-	75-125	-	
Calcium, Total	96	-	73-128	-	
Chromium, Total	106	-	70-130	-	
Cobalt, Total	103	-	75-125	-	
Copper, Total	104	-	75-125	-	
Iron, Total	96	-	35-165	-	
Lead, Total	100	-	72-128	-	
Magnesium, Total	90	-	62-138	-	
Manganese, Total	94	-	74-126	-	
Nickel, Total	102	-	70-130	-	
Potassium, Total	90	-	59-141	-	
Selenium, Total	103	-	68-132	-	
Silver, Total	107	-	68-131	-	
Sodium, Total	123	-	35-165	-	
Thallium, Total	104	-	68-131	-	
Vanadium, Total	108	-	59-141	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: HKV2101

Lab Number: L2155998

Report Date: 10/20/21

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 Batch: WG1559427-2 SRM Lot Number: D109-540					
Zinc, Total	100	-	70-130	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1558704-3 QC Sample: L2155833-01 Client ID: MS Sample												
Aluminum, Total	4640	171	3850	**0**	Q	-	-		75-125	-		20
Antimony, Total	1.90J	42.8	38.9	91		-	-		75-125	-		20
Arsenic, Total	6.94	10.3	14.9	77		-	-		75-125	-		20
Barium, Total	165	171	255	**52**	Q	-	-		75-125	-		20
Beryllium, Total	0.310J	4.28	4.65	108		-	-		75-125	-		20
Cadmium, Total	1.51	4.54	5.00	77		-	-		75-125	-		20
Calcium, Total	5900	857	16000	**1180**	Q	-	-		75-125	-		20
Chromium, Total	14.5	17.1	26.6	**70**	Q	-	-		75-125	-		20
Cobalt, Total	5.37	42.8	45.5	94		-	-		75-125	-		20
Copper, Total	104	21.4	154	**233**	Q	-	-		75-125	-		20
Iron, Total	13000	85.7	12800	**0**	Q	-	-		75-125	-		20
Lead, Total	561	45.4	444	**0**	Q	-	-		75-125	-		20
Magnesium, Total	2200	857	8780	**768**	Q	-	-		75-125	-		20
Manganese, Total	186	42.8	198	**28**	Q	-	-		75-125	-		20
Nickel, Total	18.3	42.8	56.2	88		-	-		75-125	-		20
Potassium, Total	775	857	1590	95		-	-		75-125	-		20
Selenium, Total	0.474J	10.3	10.2	99		-	-		75-125	-		20
Silver, Total	0.327J	25.7	26.3	102		-	-		75-125	-		20
Thallium, Total	ND	10.3	9.02	88		-	-		75-125	-		20
Vanadium, Total	21.9	42.8	55.9	79		-	-		75-125	-		20
Zinc, Total	326	42.8	919	**1380**	Q	-	-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1558705-3 QC Sample: L2155833-01 Client ID: MS Sample										
Mercury, Total	0.299	0.154	0.269	**0**	Q	-	-	80-120	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1559427-3 QC Sample: L2155833-01 Client ID: MS Sample										
Aluminum, Total	3640	170	4490	**500**	Q	-	-	75-125	-	20
Antimony, Total	1.92J	42.4	33.4	79		-	-	75-125	-	20
Arsenic, Total	6.12	10.2	15.4	91		-	-	75-125	-	20
Barium, Total	121	170	270	88		-	-	75-125	-	20
Beryllium, Total	0.248	4.24	3.52	77		-	-	75-125	-	20
Cadmium, Total	1.23	4.5	4.61	75		-	-	75-125	-	20
Calcium, Total	5570	849	10000	**522**	Q	-	-	75-125	-	20
Chromium, Total	14.6	17	28.1	80		-	-	75-125	-	20
Cobalt, Total	4.58	42.4	35.8	**74**	Q	-	-	75-125	-	20
Copper, Total	100	21.2	110	**47**	Q	-	-	75-125	-	20
Iron, Total	18100	84.9	12800	**0**	Q	-	-	75-125	-	20
Lead, Total	402	45	454	116		-	-	75-125	-	20
Magnesium, Total	2150	849	4880	**322**	Q	-	-	75-125	-	20
Manganese, Total	177	42.4	199	**52**	Q	-	-	75-125	-	20
Nickel, Total	12.8	42.4	44.9	76		-	-	75-125	-	20
Potassium, Total	622	849	1460	99		-	-	75-125	-	20
Selenium, Total	0.534J	10.2	8.85	87		-	-	75-125	-	20
Silver, Total	0.153J	25.5	23.6	93		-	-	75-125	-	20
Sodium, Total	92.8	849	859	90		-	-	75-125	-	20
Thallium, Total	ND	10.2	7.22	**71**	Q	-	-	75-125	-	20
Vanadium, Total	19.7	42.4	57.9	90		-	-	75-125	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1559427-3 QC Sample: L2155833-01 Client ID: MS Sample										
Zinc, Total	291	42.4	280	**0**	Q	-	-	75-125	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
- Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1558704-4 QC Sample: L2155833-01 Client ID: DUP Sample						
Aluminum, Total	4640	3800	mg/kg	20		20
Antimony, Total	1.90J	1.83J	mg/kg	NC		20
Arsenic, Total	6.94	5.92	mg/kg	16		20
Barium, Total	165	161	mg/kg	2		20
Beryllium, Total	0.310J	0.359J	mg/kg	NC		20
Cadmium, Total	1.51	1.27	mg/kg	17		20
Calcium, Total	5900	5590	mg/kg	5		20
Chromium, Total	14.5	21.2	mg/kg	**38**	Q	20
Cobalt, Total	5.37	6.82	mg/kg	**24**	Q	20
Copper, Total	104	121	mg/kg	15		20
Iron, Total	13000	20300	mg/kg	**44**	Q	20
Lead, Total	561	441	mg/kg	**24**	Q	20
Manganese, Total	186	215	mg/kg	14		20
Nickel, Total	18.3	16.7	mg/kg	9		20
Potassium, Total	775	644	mg/kg	18		20
Selenium, Total	0.474J	0.248J	mg/kg	NC		20
Silver, Total	0.327J	ND	mg/kg	NC		20
Thallium, Total	ND	ND	mg/kg	NC		20
Vanadium, Total	21.9	18.2	mg/kg	18		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

Parameter	Native Sample	Duplicate Sample	Units	RPD		RPD Limits
- Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1558704-4 QC Sample: L2155833-01 Client ID: DUP Sample						
Zinc, Total	326	619	mg/kg	**62**	Q	20
- Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1558704-4 QC Sample: L2155833-01 Client ID: DUP Sample						
Magnesium, Total	2200	2510	mg/kg	13		20
- Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1558705-4 QC Sample: L2155833-01 Client ID: DUP Sample						
Mercury, Total	0.299	0.142	mg/kg	**71**	Q	20
- Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1559427-4 QC Sample: L2155833-01 Client ID: DUP Sample						
Sodium, Total	92.8	119	mg/kg	**25**	Q	20

Project Name: HKV2101
Project Number: HKV2101

Lab Serial Dilution Analysis
Batch Quality Control

Lab Number: L2155998
Report Date: 10/20/21

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1558704-6 QC Sample: L2155833-01 Client ID: DUP Sample						
Aluminum, Total	4640	4910	mg/kg	6		20
Barium, Total	165	172	mg/kg	4		20
Calcium, Total	5900	6270	mg/kg	6		20
Copper, Total	104	106	mg/kg	2		20
Iron, Total	13000	13900	mg/kg	7		20
Lead, Total	561	572	mg/kg	2		20
Manganese, Total	186	198	mg/kg	6		20
Vanadium, Total	21.9	22.6	mg/kg	3		20
Zinc, Total	326	335	mg/kg	3		20
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1558704-6 QC Sample: L2155833-01 Client ID: DUP Sample						
Magnesium, Total	2200	2320	mg/kg	5		20

INORGANICS
&
MISCELLANEOUS

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-01
Client ID: GRID A_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 09:35
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.1		%	0.100	NA	1	-	10/14/21 10:37	121,2540G	RI

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-03
Client ID: GRID B_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 10:45
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.7		%	0.100	NA	1	-	10/14/21 10:37	121,2540G	RI

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-05
Client ID: GRID C_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 13:00
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.8		%	0.100	NA	1	-	10/14/21 10:37	121,2540G	RI

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-07
Client ID: GRID D_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 14:30
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.3		%	0.100	NA	1	-	10/14/21 10:37	121,2540G	RI

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-09
Client ID: GRID P_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 08:26
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.4		%	0.100	NA	1	-	10/14/21 10:37	121,2540G	RI

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-11
Client ID: GRID Q_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 10:20
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.7		%	0.100	NA	1	-	10/14/21 10:37	121,2540G	RI

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-13
Client ID: GRID R_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 11:30
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	94.1		%	0.100	NA	1	-	10/14/21 10:37	121,2540G	RI

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-15
Client ID: GRID S_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 13:40
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.9		%	0.100	NA	1	-	10/14/21 10:37	121,2540G	RI

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

SAMPLE RESULTS

Lab ID: L2155998-17
Client ID: GRID T_0-2
Sample Location: Not Specified

Date Collected: 10/13/21 15:00
Date Received: 10/13/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.8		%	0.100	NA	1	-	10/14/21 10:37	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: HKV2101

Lab Number: L2155998

Report Date: 10/20/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1558567-1 QC Sample: L2155889-32 Client ID: DUP Sample						
Solids, Total	41.9	42.0	%	0		20

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2155998-01A	Vial MeOH preserved	A	NA		5.5	Y	Absent		NYTCL-8260HLW(14)
L2155998-01B	Vial water preserved	A	NA		5.5	Y	Absent	14-OCT-21 08:22	NYTCL-8260HLW(14)
L2155998-01C	Vial water preserved	A	NA		5.5	Y	Absent	14-OCT-21 08:22	NYTCL-8260HLW(14)
L2155998-01D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),TL-TI(180),CR-TI(180),NI-TI(180),AL-TI(180),SE-TI(180),CU-TI(180),SB-TI(180),ZN-TI(180),PB-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MG-TI(180),HG-T(28),MN-TI(180),NA-TI(180),CA-TI(180),CD-TI(180),K-TI(180)
L2155998-01E	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2155998-01F	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2155998-01G	Plastic 120ml unpreserved	A	NA		5.5	Y	Absent		TS(7)
L2155998-01H	Glass 120ml/4oz unpreserved	A	NA		5.5	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2155998-01J	Glass 500ml/16oz unpreserved	A	NA		5.5	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2155998-02A	Vial MeOH preserved	A	NA		5.5	Y	Absent		HOLD-8260HLW(14)
L2155998-02B	Vial water preserved	A	NA		5.5	Y	Absent	14-OCT-21 08:22	HOLD-8260HLW(14)
L2155998-02C	Vial water preserved	A	NA		5.5	Y	Absent	14-OCT-21 08:22	HOLD-8260HLW(14)
L2155998-02D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-METAL(180)
L2155998-02E	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-8151(14),HOLD-8270(14),HOLD-8081(14),HOLD-8082(14)
L2155998-02F	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-8151(14),HOLD-8270(14),HOLD-8081(14),HOLD-8082(14)
L2155998-02G	Plastic 120ml unpreserved	A	NA		5.5	Y	Absent		HOLD-WETCHEM()
L2155998-02H	Glass 120ml/4oz unpreserved	A	NA		5.5	Y	Absent		HOLD-8151(14),HOLD-8270(14),HOLD-8081(14),HOLD-8082(14)
L2155998-02J	Glass 500ml/16oz unpreserved	A	NA		5.5	Y	Absent		HOLD-8151(14),HOLD-8270(14),HOLD-8081(14),HOLD-8082(14)

*Values in parentheses indicate holding time in days

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2155998-03A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),AL-TI(180),TL-TI(180),NI-TI(180),CU-TI(180),ZN-TI(180),SE-TI(180),PB-TI(180),SB-TI(180),V-TI(180),CO-TI(180),HG-T(28),MG-TI(180),FE-TI(180),MN-TI(180),NA-TI(180),CD-TI(180),K-TI(180),CA-TI(180)
L2155998-03B	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		TS(7),NYTCL-8081(14)
L2155998-04A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-METAL(180)
L2155998-04B	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-8081(14)
L2155998-05A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),NI-TI(180),CR-TI(180),TL-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),CU-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MG-TI(180),HG-T(28),MN-TI(180),K-TI(180),NA-TI(180),CA-TI(180),CD-TI(180)
L2155998-05B	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		TS(7),NYTCL-8081(14)
L2155998-06A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-METAL(180)
L2155998-06B	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-8081(14)
L2155998-07A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),NI-TI(180),TL-TI(180),CR-TI(180),AL-TI(180),CU-TI(180),SE-TI(180),ZN-TI(180),SB-TI(180),PB-TI(180),CO-TI(180),V-TI(180),HG-T(28),MN-TI(180),MG-TI(180),FE-TI(180),NA-TI(180),CD-TI(180),K-TI(180),CA-TI(180)
L2155998-07B	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		TS(7),NYTCL-8081(14)
L2155998-08A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-METAL(180)
L2155998-08B	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-8081(14)
L2155998-09A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),TL-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),ZN-TI(180),SB-TI(180),SE-TI(180),CU-TI(180),PB-TI(180),CO-TI(180),V-TI(180),MN-TI(180),HG-T(28),FE-TI(180),MG-TI(180),NA-TI(180),CA-TI(180),K-TI(180),CD-TI(180)
L2155998-09B	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		TS(7),NYTCL-8081(14)
L2155998-10A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-METAL(180)
L2155998-10B	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-8081(14)

*Values in parentheses indicate holding time in days

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2155998-11A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),NI-TI(180),TL-TI(180),AL-TI(180),CR-TI(180),ZN-TI(180),SE-TI(180),PB-TI(180),SB-TI(180),CU-TI(180),V-TI(180),CO-TI(180),FE-TI(180),MG-TI(180),MN-TI(180),HG-T(28),CD-TI(180),NA-TI(180),CA-TI(180),K-TI(180)
L2155998-11B	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		TS(7),NYTCL-8081(14)
L2155998-12A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-METAL(180)
L2155998-12B	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-8081(14)
L2155998-13A	Vial MeOH preserved	A	NA		5.5	Y	Absent		NYTCL-8260HLW(14)
L2155998-13B	Vial water preserved	A	NA		5.5	Y	Absent	14-OCT-21 08:22	NYTCL-8260HLW(14)
L2155998-13C	Vial water preserved	A	NA		5.5	Y	Absent	14-OCT-21 08:22	NYTCL-8260HLW(14)
L2155998-13D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),NI-TI(180),TL-TI(180),CR-TI(180),CU-TI(180),SB-TI(180),ZN-TI(180),SE-TI(180),PB-TI(180),V-TI(180),CO-TI(180),MG-TI(180),MN-TI(180),HG-T(28),FE-TI(180),CD-TI(180),CA-TI(180),K-TI(180),NA-TI(180)
L2155998-13E	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2155998-13F	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2155998-13G	Plastic 120ml unpreserved	A	NA		5.5	Y	Absent		TS(7)
L2155998-13H	Glass 120ml/4oz unpreserved	A	NA		5.5	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2155998-13J	Glass 500ml/16oz unpreserved	A	NA		5.5	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2155998-14A	Vial MeOH preserved	A	NA		5.5	Y	Absent		HOLD-8260HLW(14)
L2155998-14B	Vial water preserved	A	NA		5.5	Y	Absent	14-OCT-21 08:22	HOLD-8260HLW(14)
L2155998-14C	Vial water preserved	A	NA		5.5	Y	Absent	14-OCT-21 08:22	HOLD-8260HLW(14)
L2155998-14D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-METAL(180)
L2155998-14E	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-8151(14),HOLD-8081(14),HOLD-8270(14),HOLD-8082(14)
L2155998-14F	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-8151(14),HOLD-8081(14),HOLD-8270(14),HOLD-8082(14)
L2155998-14G	Plastic 120ml unpreserved	A	NA		5.5	Y	Absent		HOLD-WETCHEM()
L2155998-14H	Glass 120ml/4oz unpreserved	A	NA		5.5	Y	Absent		HOLD-8151(14),HOLD-8081(14),HOLD-8270(14),HOLD-8082(14)

*Values in parentheses indicate holding time in days

Project Name: HKV2101
Project Number: HKV2101

Lab Number: L2155998
Report Date: 10/20/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2155998-14J	Glass 500ml/16oz unpreserved	A	NA		5.5	Y	Absent		HOLD-8151(14),HOLD-8081(14),HOLD-8270(14),HOLD-8082(14)
L2155998-15A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),TL-TI(180),AL-TI(180),NI-TI(180),PB-TI(180),ZN-TI(180),SE-TI(180),SB-TI(180),CU-TI(180),V-TI(180),CO-TI(180),MN-TI(180),FE-TI(180),MG-TI(180),HG-T(28),CD-TI(180),NA-TI(180),K-TI(180),CA-TI(180)
L2155998-15B	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		TS(7),NYTCL-8081(14)
L2155998-16A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-METAL(180)
L2155998-16B	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-8081(14)
L2155998-17A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),AL-TI(180),CU-TI(180),SE-TI(180),SB-TI(180),ZN-TI(180),PB-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),NA-TI(180),CA-TI(180),K-TI(180),CD-TI(180)
L2155998-17B	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		TS(7),NYTCL-8081(14)
L2155998-18A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-METAL(180)
L2155998-18B	Glass 60mL/2oz unpreserved	A	NA		5.5	Y	Absent		HOLD-8081(14)

*Values in parentheses indicate holding time in days

Project Name:	HKV2101	**Lab Number:**	L2155998
Project Number:	HKV2101	**Report Date:**	10/20/21

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HKV2101	**Lab Number:**	L2155998
Project Number:	HKV2101	**Report Date:**	10/20/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HKV2101	**Lab Number:**	L2155998
Project Number:	HKV2101	**Report Date:**	10/20/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers

Project Name:	HKV2101	**Lab Number:**	L2155998
Project Number:	HKV2101	**Report Date:**	10/20/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

NEW YORK CHAIN OF CUSTODY

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 2

Date Rec'd in Lab: 10/14/21

ALPHA Job #: L2155998

Client Information
Client: PWGC
Address: 630 Johnson Ave, Bohemia, NY 11716
Phone: 631-589-6353
Fax:
Email: Thomas.m@pwgroup.com

Project Information
Project Name: HVK 2101
Project Location:
Project #
(Use Project name as Project #) ☐
Project Manager: Thomas Melia
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☑ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☑ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
Hold deeper samples, run based on shallow results.

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Pesticides	TAL metals	VOC	SVOC	Herbicides	PCB's			Sample Specific Comments	Total Bottle
55998 -01	Grid A_0-2	10/13/21	935	S	WH	X	X	X	X	X	X				
-02	Grid A_18-24		935			X	X	X	X	X	X			HOLD	
-03	Grid B_0-2		1045			X	X								
-04	Grid B_18-24		1045			X	X	X	X	X	X			HOLD	
-05	Grid C_0-2		1300			X	X								
-06	Grid C_18-24		1300			X	X	X	X	X	X			HOLD	
-07	Grid D_0-2		1430			X	X								
-08	Grid D_18-24		1430			X	X	X	X	X	X			HOLD	
-09	Grid P_0-2		826			X	X								
-10	Grid P_18-24		826			X	X	X	X	X	X			HOLD	

Container Type
Preservative

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
PWGC	10-13-21 16:30		1600
	10/13/21 19:45		
AA	10/14/21 0300	AA	10/13/21 20:30
			10/14/21 0300
			10/14/21 03:00

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ALPHA ANALYTICAL

NEW YORK CHAIN OF CUSTODY

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193
Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 2

Date Rec'd in Lab: 10/14/21

ALPHA Job #: L2155998

Client Information
Client: PwC
Address: 630 Johnson Ave
Bohemia, NY 11716
Phone: 631 589 6353
Fax:
Email: Thomas.m.Pwgroup.com

Project Information
Project Name: HKV2101
Project Location:
Project #
(Use Project name as Project #) ☐
Project Manager: Thomas Mellon
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☒ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☒ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
Hold Deeper samples; to be run based on Shallow results

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Pesticides	TAL Metals	VOC	SVOC	Herbicides	PCB's	Total Bottle	Sample Specific Comments
55998-01	Grid Q-0-2	10/13/21	10:20	S	JL	X	X						
-02	Grid Q-18-24		10:20		JL	X	X	X	X	X	X		hold
-03	Grid R-0-2		11:30		JL	X	X	X	X	X	X		
-04	Grid R-18-24		11:30		JL	X	X	X	X	X	X		hold
-05	Grid S-0-2		13:40		JL	X	X						
-06	Grid S-18-24		13:40		JL	X	X	X	X	X	X		hold
-07	Grid T-0-2		15:00		JL	X	X						
-08	Grid T-18-24		15:00		JL	X	X	X	X	X	X		hold

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	
Preservative	

Relinquished By:	Date/Time	Received By:	Date/Time
PwC	10/13/21 1715		10/13/21 1715
	10/13/21 1715		10/13/21 20:30
	10/14/21 0300		10/14/21 03:00

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L2156337
Client:	P. W. Grosser 630 Johnson Avenue Suite 7 Bohemia, NY 11716
ATTN:	Thomas Melia
Phone:	(631) 589-6353
Project Name:	HKV2101
Project Number:	Not Specified
Report Date:	10/29/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2156337-01	GRID E_0-2	SOIL	Not Specified	10/14/21 08:03	10/14/21
L2156337-02	GRID E_18-24	SOIL	Not Specified	10/14/21 08:03	10/14/21
L2156337-03	GRID F_0-2	SOIL	Not Specified	10/14/21 09:07	10/14/21
L2156337-04	GRID F_18-24	SOIL	Not Specified	10/14/21 09:07	10/14/21
L2156337-05	GRID G_0-2	SOIL	Not Specified	10/14/21 11:45	10/14/21
L2156337-06	GRID G_18-24	SOIL	Not Specified	10/14/21 11:45	10/14/21
L2156337-07	GRID H_0-2	SOIL	Not Specified	10/14/21 10:59	10/14/21
L2156337-08	GRID H_18-24	SOIL	Not Specified	10/14/21 10:59	10/14/21
L2156337-09	GRID I_0-2	SOIL	Not Specified	10/14/21 13:18	10/14/21
L2156337-10	GRID I_18-24	SOIL	Not Specified	10/14/21 13:18	10/14/21
L2156337-11	GRID J_0-2	SOIL	Not Specified	10/14/21 13:50	10/14/21
L2156337-12	GRID J_18-24	SOIL	Not Specified	10/14/21 13:50	10/14/21
L2156337-13	GRID K_0-2	SOIL	Not Specified	10/14/21 15:10	10/14/21
L2156337-14	GRID K_18-24	SOIL	Not Specified	10/14/21 15:10	10/14/21
L2156337-15	GRID U_0-2	SOIL	Not Specified	10/14/21 08:39	10/14/21
L2156337-16	GRID U_18-24	SOIL	Not Specified	10/14/21 08:39	10/14/21
L2156337-17	GRID V_0-2	SOIL	Not Specified	10/14/21 10:20	10/14/21
L2156337-18	GRID V_18-24	SOIL	Not Specified	10/14/21 10:20	10/14/21
L2156337-19	GRID W_0-2	SOIL	Not Specified	10/14/21 12:11	10/14/21
L2156337-20	GRID W_18-24	SOIL	Not Specified	10/14/21 12:11	10/14/21
L2156337-21	GRID X_0-2	SOIL	Not Specified	10/14/21 12:46	10/14/21
L2156337-22	GRID X_18-24	SOIL	Not Specified	10/14/21 12:46	10/14/21
L2156337-23	GRID Y_0-2	SOIL	Not Specified	10/14/21 14:36	10/14/21
L2156337-24	GRID Y_18-24	SOIL	Not Specified	10/14/21 14:36	10/14/21

Project Name:	HKV2101	**Lab Number:**	L2156337
Project Number:	Not Specified	**Report Date:**	10/29/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	HKV2101	**Lab Number:**	L2156337
Project Number:	Not Specified	**Report Date:**	10/29/21

Case Narrative (continued)

Report Submission

October 29, 2021: This final report includes the results of the Pesticides analysis performed on L2156337-04, -06, -08, -10, -12, -14, -16, -18, -20, -22, and -24 and the results of the Total Metals analysis performed on L2156337-08, -10, -12 and -14.

October 21, 2021: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Total Metals

L2156337-01, -03, -05, -07, -08, -09,-10, -11, -12, -13, and -14, -15, -17, -19, -21, and -23: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by matrix interferences encountered during analysis.

The WG1563264-1 Method Blank, associated with L2156337-08, -10, -12, and -14, has a concentration above the reporting limit for iron. Since the associated sample concentrations are either greater than 10x the blank concentration or non-detect to the RL for this target analyte, no corrective action is required. Any results detected below the reporting limit are qualified with a "B".

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Tiffani Morrissey - Tiffani Morrissey

Title: Technical Director/Representative Date: 10/29/21

ORGANICS

VOLATILES

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-03
Client ID: GRID F_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 09:07
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 10/19/21 20:21
Analyst: JC
Percent Solids: 98%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.5	2.5	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.16	1
Chloroform	ND		ug/kg	1.6	0.15	1
Carbon tetrachloride	ND		ug/kg	1.1	0.25	1
1,2-Dichloropropane	ND		ug/kg	1.1	0.14	1
Dibromochloromethane	ND		ug/kg	1.1	0.15	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	0.29	1
Tetrachloroethene	ND		ug/kg	0.55	0.22	1
Chlorobenzene	ND		ug/kg	0.55	0.14	1
Trichlorofluoromethane	ND		ug/kg	4.4	0.76	1
1,2-Dichloroethane	ND		ug/kg	1.1	0.28	1
1,1,1-Trichloroethane	ND		ug/kg	0.55	0.18	1
Bromodichloromethane	ND		ug/kg	0.55	0.12	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	0.30	1
cis-1,3-Dichloropropene	ND		ug/kg	0.55	0.17	1
1,3-Dichloropropene, Total	ND		ug/kg	0.55	0.17	1
1,1-Dichloropropene	ND		ug/kg	0.55	0.17	1
Bromoform	ND		ug/kg	4.4	0.27	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.55	0.18	1
Benzene	ND		ug/kg	0.55	0.18	1
Toluene	ND		ug/kg	1.1	0.60	1
Ethylbenzene	ND		ug/kg	1.1	0.16	1
Chloromethane	ND		ug/kg	4.4	1.0	1
Bromomethane	ND		ug/kg	2.2	0.64	1
Vinyl chloride	ND		ug/kg	1.1	0.37	1
Chloroethane	ND		ug/kg	2.2	0.50	1
1,1-Dichloroethene	ND		ug/kg	1.1	0.26	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.15	1

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-03 Date Collected: 10/14/21 09:07

Client ID: GRID F_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.55	0.15	1
1,2-Dichlorobenzene	ND		ug/kg	2.2	0.16	1
1,3-Dichlorobenzene	ND		ug/kg	2.2	0.16	1
1,4-Dichlorobenzene	ND		ug/kg	2.2	0.19	1
Methyl tert butyl ether	ND		ug/kg	2.2	0.22	1
p/m-Xylene	ND		ug/kg	2.2	0.62	1
o-Xylene	ND		ug/kg	1.1	0.32	1
Xylenes, Total	ND		ug/kg	1.1	0.32	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	0.19	1
1,2-Dichloroethene, Total	ND		ug/kg	1.1	0.15	1
Dibromomethane	ND		ug/kg	2.2	0.26	1
Styrene	ND		ug/kg	1.1	0.22	1
Dichlorodifluoromethane	ND		ug/kg	11	1.0	1
Acetone	ND		ug/kg	11	5.3	1
Carbon disulfide	ND		ug/kg	11	5.0	1
2-Butanone	ND		ug/kg	11	2.4	1
Vinyl acetate	ND		ug/kg	11	2.4	1
4-Methyl-2-pentanone	ND		ug/kg	11	1.4	1
1,2,3-Trichloropropane	ND		ug/kg	2.2	0.14	1
2-Hexanone	ND		ug/kg	11	1.3	1
Bromochloromethane	ND		ug/kg	2.2	0.22	1
2,2-Dichloropropane	ND		ug/kg	2.2	0.22	1
1,2-Dibromoethane	ND		ug/kg	1.1	0.31	1
1,3-Dichloropropane	ND		ug/kg	2.2	0.18	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.55	0.14	1
Bromobenzene	ND		ug/kg	2.2	0.16	1
n-Butylbenzene	ND		ug/kg	1.1	0.18	1
sec-Butylbenzene	ND		ug/kg	1.1	0.16	1
tert-Butylbenzene	ND		ug/kg	2.2	0.13	1
o-Chlorotoluene	ND		ug/kg	2.2	0.21	1
p-Chlorotoluene	ND		ug/kg	2.2	0.12	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.3	1.1	1
Hexachlorobutadiene	ND		ug/kg	4.4	0.18	1
Isopropylbenzene	ND		ug/kg	1.1	0.12	1
p-Isopropyltoluene	ND		ug/kg	1.1	0.12	1
Naphthalene	ND		ug/kg	4.4	0.71	1
Acrylonitrile	ND		ug/kg	4.4	1.3	1

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-03 Date Collected: 10/14/21 09:07

Client ID: GRID F_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.1	0.19	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.2	0.35	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.2	0.30	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.2	0.21	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.2	0.37	1
1,4-Dioxane	ND		ug/kg	88	38.	1
p-Diethylbenzene	ND		ug/kg	2.2	0.19	1
p-Ethyltoluene	ND		ug/kg	2.2	0.42	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.2	0.21	1
Ethyl ether	ND		ug/kg	2.2	0.37	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.5	1.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	123		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	116		70-130

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-21
Client ID: GRID X_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 12:46
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 10/19/21 20:42
Analyst: JC
Percent Solids: 97%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.6	2.6	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.16	1
Chloroform	ND		ug/kg	1.7	0.16	1
Carbon tetrachloride	ND		ug/kg	1.1	0.26	1
1,2-Dichloropropane	ND		ug/kg	1.1	0.14	1
Dibromochloromethane	ND		ug/kg	1.1	0.16	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	0.30	1
Tetrachloroethene	ND		ug/kg	0.56	0.22	1
Chlorobenzene	ND		ug/kg	0.56	0.14	1
Trichlorofluoromethane	ND		ug/kg	4.5	0.78	1
1,2-Dichloroethane	ND		ug/kg	1.1	0.29	1
1,1,1-Trichloroethane	ND		ug/kg	0.56	0.19	1
Bromodichloromethane	ND		ug/kg	0.56	0.12	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	0.31	1
cis-1,3-Dichloropropene	ND		ug/kg	0.56	0.18	1
1,3-Dichloropropene, Total	ND		ug/kg	0.56	0.18	1
1,1-Dichloropropene	ND		ug/kg	0.56	0.18	1
Bromoform	ND		ug/kg	4.5	0.28	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.56	0.19	1
Benzene	ND		ug/kg	0.56	0.19	1
Toluene	ND		ug/kg	1.1	0.61	1
Ethylbenzene	ND		ug/kg	1.1	0.16	1
Chloromethane	ND		ug/kg	4.5	1.0	1
Bromomethane	ND		ug/kg	2.2	0.65	1
Vinyl chloride	ND		ug/kg	1.1	0.38	1
Chloroethane	ND		ug/kg	2.2	0.51	1
1,1-Dichloroethene	ND		ug/kg	1.1	0.27	1
trans-1,2-Dichloroethene	ND		ug/kg	1.7	0.15	1

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-21 Date Collected: 10/14/21 12:46

Client ID: GRID X_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.56	0.15	1
1,2-Dichlorobenzene	ND		ug/kg	2.2	0.16	1
1,3-Dichlorobenzene	ND		ug/kg	2.2	0.17	1
1,4-Dichlorobenzene	ND		ug/kg	2.2	0.19	1
Methyl tert butyl ether	ND		ug/kg	2.2	0.22	1
p/m-Xylene	ND		ug/kg	2.2	0.63	1
o-Xylene	ND		ug/kg	1.1	0.33	1
Xylenes, Total	ND		ug/kg	1.1	0.33	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	0.20	1
1,2-Dichloroethene, Total	ND		ug/kg	1.1	0.15	1
Dibromomethane	ND		ug/kg	2.2	0.27	1
Styrene	ND		ug/kg	1.1	0.22	1
Dichlorodifluoromethane	ND		ug/kg	11	1.0	1
Acetone	ND		ug/kg	11	5.4	1
Carbon disulfide	ND		ug/kg	11	5.1	1
2-Butanone	ND		ug/kg	11	2.5	1
Vinyl acetate	ND		ug/kg	11	2.4	1
4-Methyl-2-pentanone	ND		ug/kg	11	1.4	1
1,2,3-Trichloropropane	ND		ug/kg	2.2	0.14	1
2-Hexanone	ND		ug/kg	11	1.3	1
Bromochloromethane	ND		ug/kg	2.2	0.23	1
2,2-Dichloropropane	ND		ug/kg	2.2	0.23	1
1,2-Dibromoethane	ND		ug/kg	1.1	0.31	1
1,3-Dichloropropane	ND		ug/kg	2.2	0.19	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.56	0.15	1
Bromobenzene	ND		ug/kg	2.2	0.16	1
n-Butylbenzene	ND		ug/kg	1.1	0.19	1
sec-Butylbenzene	ND		ug/kg	1.1	0.16	1
tert-Butylbenzene	ND		ug/kg	2.2	0.13	1
o-Chlorotoluene	ND		ug/kg	2.2	0.21	1
p-Chlorotoluene	ND		ug/kg	2.2	0.12	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.4	1.1	1
Hexachlorobutadiene	ND		ug/kg	4.5	0.19	1
Isopropylbenzene	ND		ug/kg	1.1	0.12	1
p-Isopropyltoluene	ND		ug/kg	1.1	0.12	1
Naphthalene	ND		ug/kg	4.5	0.73	1
Acrylonitrile	ND		ug/kg	4.5	1.3	1

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-21 Date Collected: 10/14/21 12:46

Client ID: GRID X_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.1	0.19	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.2	0.36	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.2	0.30	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.2	0.22	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.2	0.37	1
1,4-Dioxane	ND		ug/kg	90	39.	1
p-Diethylbenzene	ND		ug/kg	2.2	0.20	1
p-Ethyltoluene	ND		ug/kg	2.2	0.43	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.2	0.21	1
Ethyl ether	ND		ug/kg	2.2	0.38	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.6	1.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	123		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	116		70-130

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/19/21 18:58
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 03,21 Batch: WG1560884-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
1,3-Dichloropropene, Total	ND		ug/kg	0.50	0.16
1,1-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/19/21 18:58
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 03,21 Batch: WG1560884-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
1,2-Dichloroethene, Total	ND		ug/kg	1.0	0.14
Dibromomethane	ND		ug/kg	2.0	0.24
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
Vinyl acetate	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
1,2,3-Trichloropropane	ND		ug/kg	2.0	0.13
2-Hexanone	ND		ug/kg	10	1.2
Bromochloromethane	ND		ug/kg	2.0	0.20
2,2-Dichloropropane	ND		ug/kg	2.0	0.20
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
1,3-Dichloropropane	ND		ug/kg	2.0	0.17
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	0.13
Bromobenzene	ND		ug/kg	2.0	0.14
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
o-Chlorotoluene	ND		ug/kg	2.0	0.19

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/19/21 18:58
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 03,21 Batch: WG1560884-5					
p-Chlorotoluene	ND		ug/kg	2.0	0.11
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Hexachlorobutadiene	ND		ug/kg	4.0	0.17
Isopropylbenzene	ND		ug/kg	1.0	0.11
p-Isopropyltoluene	ND		ug/kg	1.0	0.11
Naphthalene	ND		ug/kg	4.0	0.65
Acrylonitrile	ND		ug/kg	4.0	1.2
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	0.32
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
1,4-Dioxane	ND		ug/kg	80	35.
p-Diethylbenzene	ND		ug/kg	2.0	0.18
p-Ethyltoluene	ND		ug/kg	2.0	0.38
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.0	0.19
Ethyl ether	ND		ug/kg	2.0	0.34
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	1.4

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	112		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 03,21 Batch: WG1560884-3 WG1560884-4								
Methylene chloride	110		112		70-130	2		30
1,1-Dichloroethane	101		101		70-130	0		30
Chloroform	101		102		70-130	1		30
Carbon tetrachloride	98		100		70-130	2		30
1,2-Dichloropropane	95		98		70-130	3		30
Dibromochloromethane	89		96		70-130	8		30
1,1,2-Trichloroethane	93		98		70-130	5		30
Tetrachloroethene	100		104		70-130	4		30
Chlorobenzene	99		101		70-130	2		30
Trichlorofluoromethane	109		109		70-139	0		30
1,2-Dichloroethane	95		98		70-130	3		30
1,1,1-Trichloroethane	106		108		70-130	2		30
Bromodichloromethane	93		98		70-130	5		30
trans-1,3-Dichloropropene	90		97		70-130	7		30
cis-1,3-Dichloropropene	92		97		70-130	5		30
1,1-Dichloropropene	108		107		70-130	1		30
Bromoform	83		87		70-130	5		30
1,1,2,2-Tetrachloroethane	106		106		70-130	0		30
Benzene	101		102		70-130	1		30
Toluene	99		102		70-130	3		30
Ethylbenzene	106		107		70-130	1		30
Chloromethane	107		109		52-130	2		30
Bromomethane	94		91		57-147	3		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 03,21 Batch: WG1560884-3 WG1560884-4								
Vinyl chloride	118		116		67-130	2		30
Chloroethane	119		121		50-151	2		30
1,1-Dichloroethene	106		105		65-135	1		30
trans-1,2-Dichloroethene	105		102		70-130	3		30
Trichloroethene	98		102		70-130	4		30
1,2-Dichlorobenzene	102		100		70-130	2		30
1,3-Dichlorobenzene	103		100		70-130	3		30
1,4-Dichlorobenzene	101		99		70-130	2		30
Methyl tert butyl ether	96		94		66-130	2		30
p/m-Xylene	104		106		70-130	2		30
o-Xylene	105		106		70-130	1		30
cis-1,2-Dichloroethene	97		100		70-130	3		30
Dibromomethane	91		98		70-130	7		30
Styrene	104		105		70-130	1		30
Dichlorodifluoromethane	**148**	Q	146		30-146	1		30
Acetone	58		71		54-140	20		30
Carbon disulfide	104		106		59-130	2		30
2-Butanone	73		78		70-130	7		30
Vinyl acetate	82		85		70-130	4		30
4-Methyl-2-pentanone	81		89		70-130	9		30
1,2,3-Trichloropropane	94		95		68-130	1		30
2-Hexanone	77		88		70-130	13		30
Bromochloromethane	89		94		70-130	5		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 03,21 Batch: WG1560884-3 WG1560884-4								
2,2-Dichloropropane	93		94		70-130	1		30
1,2-Dibromoethane	96		101		70-130	5		30
1,3-Dichloropropane	98		101		69-130	3		30
1,1,1,2-Tetrachloroethane	96		99		70-130	3		30
Bromobenzene	102		100		70-130	2		30
n-Butylbenzene	115		110		70-130	4		30
sec-Butylbenzene	116		112		70-130	4		30
tert-Butylbenzene	115		110		70-130	4		30
o-Chlorotoluene	107		104		70-130	3		30
p-Chlorotoluene	110		106		70-130	4		30
1,2-Dibromo-3-chloropropane	77		81		68-130	5		30
Hexachlorobutadiene	109		105		67-130	4		30
Isopropylbenzene	114		110		70-130	4		30
p-Isopropyltoluene	114		108		70-130	5		30
Naphthalene	88		90		70-130	2		30
Acrylonitrile	80		81		70-130	1		30
n-Propylbenzene	115		110		70-130	4		30
1,2,3-Trichlorobenzene	96		95		70-130	1		30
1,2,4-Trichlorobenzene	98		95		70-130	3		30
1,3,5-Trimethylbenzene	111		109		70-130	2		30
1,2,4-Trimethylbenzene	110		105		70-130	5		30
1,4-Dioxane	83		93		65-136	11		30
p-Diethylbenzene	111		107		70-130	4		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156337

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 03,21 Batch: WG1560884-3 WG1560884-4								
p-Ethyltoluene	112		109		70-130	3		30
1,2,4,5-Tetramethylbenzene	112		108		70-130	4		30
Ethyl ether	92		100		67-130	8		30
trans-1,4-Dichloro-2-butene	81		85		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		104		70-130
Toluene-d8	107		108		70-130
4-Bromofluorobenzene	107		102		70-130
Dibromofluoromethane	102		104		70-130

SEMIVOLATILES

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-03
Client ID: GRID F_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 09:07
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 10/18/21 16:16
Analyst: CMM
Percent Solids: 98%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 01:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	130	17.	1
1,2,4-Trichlorobenzene	ND		ug/kg	170	19.	1
Hexachlorobenzene	ND		ug/kg	100	19.	1
Bis(2-chloroethyl)ether	ND		ug/kg	150	23.	1
2-Chloronaphthalene	ND		ug/kg	170	17.	1
1,2-Dichlorobenzene	ND		ug/kg	170	30.	1
1,3-Dichlorobenzene	ND		ug/kg	170	29.	1
1,4-Dichlorobenzene	ND		ug/kg	170	29.	1
3,3'-Dichlorobenzidine	ND		ug/kg	170	44.	1
2,4-Dinitrotoluene	ND		ug/kg	170	33.	1
2,6-Dinitrotoluene	ND		ug/kg	170	29.	1
Fluoranthene	ND		ug/kg	100	19.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	170	18.	1
4-Bromophenyl phenyl ether	ND		ug/kg	170	26.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	28.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	180	17.	1
Hexachlorobutadiene	ND		ug/kg	170	24.	1
Hexachlorocyclopentadiene	ND		ug/kg	480	150	1
Hexachloroethane	ND		ug/kg	130	27.	1
Isophorone	ND		ug/kg	150	22.	1
Naphthalene	ND		ug/kg	170	20.	1
Nitrobenzene	ND		ug/kg	150	25.	1
NDPA/DPA	ND		ug/kg	130	19.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	170	26.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	170	58.	1
Butyl benzyl phthalate	ND		ug/kg	170	42.	1
Di-n-butylphthalate	ND		ug/kg	170	32.	1
Di-n-octylphthalate	ND		ug/kg	170	57.	1

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-03 Date Collected: 10/14/21 09:07

Client ID: GRID F_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	170	16.	1
Dimethyl phthalate	ND		ug/kg	170	35.	1
Benzo(a)anthracene	ND		ug/kg	100	19.	1
Benzo(a)pyrene	ND		ug/kg	130	41.	1
Benzo(b)fluoranthene	ND		ug/kg	100	28.	1
Benzo(k)fluoranthene	ND		ug/kg	100	27.	1
Chrysene	ND		ug/kg	100	17.	1
Acenaphthylene	ND		ug/kg	130	26.	1
Anthracene	ND		ug/kg	100	33.	1
Benzo(ghi)perylene	ND		ug/kg	130	20.	1
Fluorene	ND		ug/kg	170	16.	1
Phenanthrene	ND		ug/kg	100	20.	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	19.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.	1
Pyrene	ND		ug/kg	100	17.	1
Biphenyl	ND		ug/kg	380	39.	1
4-Chloroaniline	ND		ug/kg	170	30.	1
2-Nitroaniline	ND		ug/kg	170	32.	1
3-Nitroaniline	ND		ug/kg	170	32.	1
4-Nitroaniline	ND		ug/kg	170	69.	1
Dibenzofuran	ND		ug/kg	170	16.	1
2-Methylnaphthalene	ND		ug/kg	200	20.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	170	17.	1
Acetophenone	ND		ug/kg	170	21.	1
2,4,6-Trichlorophenol	ND		ug/kg	100	32.	1
p-Chloro-m-cresol	ND		ug/kg	170	25.	1
2-Chlorophenol	ND		ug/kg	170	20.	1
2,4-Dichlorophenol	ND		ug/kg	150	27.	1
2,4-Dimethylphenol	ND		ug/kg	170	55.	1
2-Nitrophenol	ND		ug/kg	360	63.	1
4-Nitrophenol	ND		ug/kg	230	68.	1
2,4-Dinitrophenol	ND		ug/kg	800	78.	1
4,6-Dinitro-o-cresol	ND		ug/kg	440	80.	1
Pentachlorophenol	ND		ug/kg	130	37.	1
Phenol	ND		ug/kg	170	25.	1
2-Methylphenol	ND		ug/kg	170	26.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.	1

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-03 Date Collected: 10/14/21 09:07

Client ID: GRID F_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	170	32.	1
Benzoic Acid	370	J	ug/kg	540	170	1
Benzyl Alcohol	ND		ug/kg	170	51.	1
Carbazole	ND		ug/kg	170	16.	1
1,4-Dioxane	ND		ug/kg	25	7.7	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	67		25-120
Phenol-d6	71		10-120
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	74		30-120
2,4,6-Tribromophenol	94		10-136
4-Terphenyl-d14	66		18-120

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-21
Client ID: GRID X_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 12:46
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 10/18/21 16:39
Analyst: CMM
Percent Solids: 97%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 01:47

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	130	17.	1
1,2,4-Trichlorobenzene	ND		ug/kg	170	19.	1
Hexachlorobenzene	ND		ug/kg	100	19.	1
Bis(2-chloroethyl)ether	ND		ug/kg	150	23.	1
2-Chloronaphthalene	ND		ug/kg	170	17.	1
1,2-Dichlorobenzene	ND		ug/kg	170	30.	1
1,3-Dichlorobenzene	ND		ug/kg	170	29.	1
1,4-Dichlorobenzene	ND		ug/kg	170	29.	1
3,3'-Dichlorobenzidine	ND		ug/kg	170	45.	1
2,4-Dinitrotoluene	ND		ug/kg	170	34.	1
2,6-Dinitrotoluene	ND		ug/kg	170	29.	1
Fluoranthene	ND		ug/kg	100	19.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	170	18.	1
4-Bromophenyl phenyl ether	ND		ug/kg	170	26.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	29.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	180	17.	1
Hexachlorobutadiene	ND		ug/kg	170	24.	1
Hexachlorocyclopentadiene	ND		ug/kg	480	150	1
Hexachloroethane	ND		ug/kg	130	27.	1
Isophorone	ND		ug/kg	150	22.	1
Naphthalene	ND		ug/kg	170	20.	1
Nitrobenzene	ND		ug/kg	150	25.	1
NDPA/DPA	ND		ug/kg	130	19.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	170	26.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	170	58.	1
Butyl benzyl phthalate	ND		ug/kg	170	42.	1
Di-n-butylphthalate	ND		ug/kg	170	32.	1
Di-n-octylphthalate	ND		ug/kg	170	57.	1

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-21 Date Collected: 10/14/21 12:46

Client ID: GRID X_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	170	16.	1
Dimethyl phthalate	ND		ug/kg	170	35.	1
Benzo(a)anthracene	ND		ug/kg	100	19.	1
Benzo(a)pyrene	ND		ug/kg	130	41.	1
Benzo(b)fluoranthene	ND		ug/kg	100	28.	1
Benzo(k)fluoranthene	ND		ug/kg	100	27.	1
Chrysene	ND		ug/kg	100	17.	1
Acenaphthylene	ND		ug/kg	130	26.	1
Anthracene	ND		ug/kg	100	33.	1
Benzo(ghi)perylene	ND		ug/kg	130	20.	1
Fluorene	ND		ug/kg	170	16.	1
Phenanthrene	ND		ug/kg	100	20.	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	19.	1
Indeno(1,2,3-cd)pyrene	40	J	ug/kg	130	23.	1
Pyrene	ND		ug/kg	100	17.	1
Biphenyl	ND		ug/kg	380	39.	1
4-Chloroaniline	ND		ug/kg	170	30.	1
2-Nitroaniline	ND		ug/kg	170	32.	1
3-Nitroaniline	ND		ug/kg	170	32.	1
4-Nitroaniline	ND		ug/kg	170	69.	1
Dibenzofuran	ND		ug/kg	170	16.	1
2-Methylnaphthalene	ND		ug/kg	200	20.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	170	18.	1
Acetophenone	ND		ug/kg	170	21.	1
2,4,6-Trichlorophenol	ND		ug/kg	100	32.	1
p-Chloro-m-cresol	ND		ug/kg	170	25.	1
2-Chlorophenol	ND		ug/kg	170	20.	1
2,4-Dichlorophenol	ND		ug/kg	150	27.	1
2,4-Dimethylphenol	ND		ug/kg	170	55.	1
2-Nitrophenol	ND		ug/kg	360	63.	1
4-Nitrophenol	ND		ug/kg	230	68.	1
2,4-Dinitrophenol	ND		ug/kg	800	78.	1
4,6-Dinitro-o-cresol	ND		ug/kg	440	80.	1
Pentachlorophenol	ND		ug/kg	130	37.	1
Phenol	ND		ug/kg	170	25.	1
2-Methylphenol	ND		ug/kg	170	26.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.	1

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-21 Date Collected: 10/14/21 12:46

Client ID: GRID X_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	170	32.	1
Benzoic Acid	240	J	ug/kg	540	170	1
Benzyl Alcohol	ND		ug/kg	170	51.	1
Carbazole	ND		ug/kg	170	16.	1
1,4-Dioxane	ND		ug/kg	25	7.7	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	85		25-120
Phenol-d6	90		10-120
Nitrobenzene-d5	87		23-120
2-Fluorobiphenyl	90		30-120
2,4,6-Tribromophenol	118		10-136
4-Terphenyl-d14	85		18-120

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/16/21 16:24
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 10/16/21 01:37

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 03,21 Batch: WG1559404-1					
Acenaphthene	ND		ug/kg	130	17.
1,2,4-Trichlorobenzene	ND		ug/kg	160	19.
Hexachlorobenzene	ND		ug/kg	99	18.
Bis(2-chloroethyl)ether	ND		ug/kg	150	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
1,2-Dichlorobenzene	ND		ug/kg	160	30.
1,3-Dichlorobenzene	ND		ug/kg	160	28.
1,4-Dichlorobenzene	ND		ug/kg	160	29.
3,3'-Dichlorobenzidine	ND		ug/kg	160	44.
2,4-Dinitrotoluene	ND		ug/kg	160	33.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Fluoranthene	ND		ug/kg	99	19.
4-Chlorophenyl phenyl ether	ND		ug/kg	160	18.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	16.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachlorocyclopentadiene	ND		ug/kg	470	150
Hexachloroethane	ND		ug/kg	130	27.
Isophorone	ND		ug/kg	150	21.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
NDPA/DPA	ND		ug/kg	130	19.
n-Nitrosodi-n-propylamine	ND		ug/kg	160	25.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	57.
Butyl benzyl phthalate	ND		ug/kg	160	42.
Di-n-butylphthalate	ND		ug/kg	160	31.
Di-n-octylphthalate	ND		ug/kg	160	56.
Diethyl phthalate	ND		ug/kg	160	15.

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/16/21 16:24
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 10/16/21 01:37

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 03,21 Batch: WG1559404-1					
Dimethyl phthalate	ND		ug/kg	160	35.
Benzo(a)anthracene	ND		ug/kg	99	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Biphenyl	ND		ug/kg	380	38.
4-Chloroaniline	ND		ug/kg	160	30.
2-Nitroaniline	ND		ug/kg	160	32.
3-Nitroaniline	ND		ug/kg	160	31.
4-Nitroaniline	ND		ug/kg	160	68.
Dibenzofuran	ND		ug/kg	160	16.
2-Methylnaphthalene	ND		ug/kg	200	20.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	160	17.
Acetophenone	ND		ug/kg	160	20.
2,4,6-Trichlorophenol	ND		ug/kg	99	31.
p-Chloro-m-cresol	ND		ug/kg	160	24.
2-Chlorophenol	ND		ug/kg	160	20.
2,4-Dichlorophenol	ND		ug/kg	150	26.
2,4-Dimethylphenol	ND		ug/kg	160	54.
2-Nitrophenol	ND		ug/kg	360	62.

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/16/21 16:24
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 10/16/21 01:37

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 03,21 Batch: WG1559404-1					
4-Nitrophenol	ND		ug/kg	230	67.
2,4-Dinitrophenol	ND		ug/kg	790	77.
4,6-Dinitro-o-cresol	ND		ug/kg	430	79.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	160	32.
Benzoic Acid	ND		ug/kg	530	170
Benzyl Alcohol	ND		ug/kg	160	50.
Carbazole	ND		ug/kg	160	16.
1,4-Dioxane	ND		ug/kg	25	7.6

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	91		25-120
Phenol-d6	94		10-120
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	79		30-120
2,4,6-Tribromophenol	105		10-136
4-Terphenyl-d14	93		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156337

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03,21 Batch: WG1559404-2 WG1559404-3								
Acenaphthene	81		78		31-137	4		50
1,2,4-Trichlorobenzene	76		76		38-107	0		50
Hexachlorobenzene	80		78		40-140	3		50
Bis(2-chloroethyl)ether	77		77		40-140	0		50
2-Chloronaphthalene	76		73		40-140	4		50
1,2-Dichlorobenzene	76		75		40-140	1		50
1,3-Dichlorobenzene	73		72		40-140	1		50
1,4-Dichlorobenzene	74		72		28-104	3		50
3,3'-Dichlorobenzidine	81		76		40-140	6		50
2,4-Dinitrotoluene	81		81		40-132	0		50
2,6-Dinitrotoluene	83		81		40-140	2		50
Fluoranthene	80		80		40-140	0		50
4-Chlorophenyl phenyl ether	76		75		40-140	1		50
4-Bromophenyl phenyl ether	78		75		40-140	4		50
Bis(2-chloroisopropyl)ether	58		59		40-140	2		50
Bis(2-chloroethoxy)methane	74		72		40-117	3		50
Hexachlorobutadiene	71		70		40-140	1		50
Hexachlorocyclopentadiene	40		41		40-140	2		50
Hexachloroethane	80		79		40-140	1		50
Isophorone	71		70		40-140	1		50
Naphthalene	74		72		40-140	3		50
Nitrobenzene	81		80		40-140	1		50
NDPA/DPA	80		77		36-157	4		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156337

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03,21 Batch: WG1559404-2 WG1559404-3								
n-Nitrosodi-n-propylamine	74		72		32-121	3		50
Bis(2-ethylhexyl)phthalate	101		99		40-140	2		50
Butyl benzyl phthalate	96		95		40-140	1		50
Di-n-butylphthalate	86		86		40-140	0		50
Di-n-octylphthalate	100		96		40-140	4		50
Diethyl phthalate	80		79		40-140	1		50
Dimethyl phthalate	71		69		40-140	3		50
Benzo(a)anthracene	86		82		40-140	5		50
Benzo(a)pyrene	72		69		40-140	4		50
Benzo(b)fluoranthene	84		76		40-140	10		50
Benzo(k)fluoranthene	78		77		40-140	1		50
Chrysene	81		78		40-140	4		50
Acenaphthylene	71		68		40-140	4		50
Anthracene	81		77		40-140	5		50
Benzo(ghi)perylene	71		68		40-140	4		50
Fluorene	81		78		40-140	4		50
Phenanthrene	81		76		40-140	6		50
Dibenzo(a,h)anthracene	74		70		40-140	6		50
Indeno(1,2,3-cd)pyrene	72		70		40-140	3		50
Pyrene	82		79		35-142	4		50
Biphenyl	74		70		37-127	6		50
4-Chloroaniline	74		72		40-140	3		50
2-Nitroaniline	93		91		47-134	2		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156337

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03,21 Batch: WG1559404-2 WG1559404-3								
3-Nitroaniline	86		83		26-129	4		50
4-Nitroaniline	89		88		41-125	1		50
Dibenzofuran	79		77		40-140	3		50
2-Methylnaphthalene	71		68		40-140	4		50
1,2,4,5-Tetrachlorobenzene	76		74		40-117	3		50
Acetophenone	74		73		14-144	1		50
2,4,6-Trichlorophenol	83		80		30-130	4		50
p-Chloro-m-cresol	79		76		26-103	4		50
2-Chlorophenol	88		87		25-102	1		50
2,4-Dichlorophenol	86		82		30-130	5		50
2,4-Dimethylphenol	80		76		30-130	5		50
2-Nitrophenol	111		109		30-130	2		50
4-Nitrophenol	91		92		11-114	1		50
2,4-Dinitrophenol	30		30		4-130	0		50
4,6-Dinitro-o-cresol	35		36		10-130	3		50
Pentachlorophenol	81		79		17-109	3		50
Phenol	77		75		26-90	3		50
2-Methylphenol	84		82		30-130.	2		50
3-Methylphenol/4-Methylphenol	89		86		30-130	3		50
2,4,5-Trichlorophenol	89		85		30-130	5		50
Benzoic Acid	33		29		10-110	13		50
Benzyl Alcohol	78		78		40-140	0		50
Carbazole	82		79		54-128	4		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156337

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 03,21 Batch: WG1559404-2 WG1559404-3								
1,4-Dioxane	54		50		40-140	8		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	86		87		25-120
Phenol-d6	88		86		10-120
Nitrobenzene-d5	88		86		23-120
2-Fluorobiphenyl	75		72		30-120
2,4,6-Tribromophenol	92		91		10-136
4-Terphenyl-d14	85		85		18-120

PCBS

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-03
Client ID: GRID F_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 09:07
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 10/17/21 21:29
Analyst: AD
Percent Solids: 98%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 05:12
Cleanup Method: EPA 3665A
Cleanup Date: 10/16/21
Cleanup Method: EPA 3660B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	32.7	2.90	1	A
Aroclor 1221	ND		ug/kg	32.7	3.28	1	A
Aroclor 1232	ND		ug/kg	32.7	6.94	1	A
Aroclor 1242	ND		ug/kg	32.7	4.41	1	A
Aroclor 1248	ND		ug/kg	32.7	4.91	1	A
Aroclor 1254	ND		ug/kg	32.7	3.58	1	A
Aroclor 1260	ND		ug/kg	32.7	6.04	1	A
Aroclor 1262	ND		ug/kg	32.7	4.15	1	A
Aroclor 1268	ND		ug/kg	32.7	3.39	1	A
PCBs, Total	ND		ug/kg	32.7	2.90	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		30-150	A
Decachlorobiphenyl	77		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	73		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-21
Client ID: GRID X_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 12:46
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 10/17/21 21:37
Analyst: AD
Percent Solids: 97%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 05:12
Cleanup Method: EPA 3665A
Cleanup Date: 10/16/21
Cleanup Method: EPA 3660B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	33.7	2.99	1	A
Aroclor 1221	ND		ug/kg	33.7	3.37	1	A
Aroclor 1232	ND		ug/kg	33.7	7.14	1	A
Aroclor 1242	ND		ug/kg	33.7	4.54	1	A
Aroclor 1248	ND		ug/kg	33.7	5.05	1	A
Aroclor 1254	ND		ug/kg	33.7	3.68	1	A
Aroclor 1260	ND		ug/kg	33.7	6.22	1	A
Aroclor 1262	ND		ug/kg	33.7	4.28	1	A
Aroclor 1268	ND		ug/kg	33.7	3.49	1	A
PCBs, Total	ND		ug/kg	33.7	2.99	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		30-150	A
Decachlorobiphenyl	75		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		30-150	B
Decachlorobiphenyl	69		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 10/17/21 20:24
Analyst: CW

Extraction Method: EPA 3546
Extraction Date: 10/15/21 15:17
Cleanup Method: EPA 3665A
Cleanup Date: 10/15/21
Cleanup Method: EPA 3660B
Cleanup Date: 10/16/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 03,21 Batch: WG1559291-1						
Aroclor 1016	ND		ug/kg	32.5	2.89	A
Aroclor 1221	ND		ug/kg	32.5	3.26	A
Aroclor 1232	ND		ug/kg	32.5	6.90	A
Aroclor 1242	ND		ug/kg	32.5	4.38	A
Aroclor 1248	ND		ug/kg	32.5	4.88	A
Aroclor 1254	ND		ug/kg	32.5	3.56	A
Aroclor 1260	ND		ug/kg	32.5	6.01	A
Aroclor 1262	ND		ug/kg	32.5	4.13	A
Aroclor 1268	ND		ug/kg	32.5	3.37	A
PCBs, Total	ND		ug/kg	32.5	2.89	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73		30-150	A
Decachlorobiphenyl	83		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	78		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156337

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 03,21 Batch: WG1559291-2 WG1559291-3									
Aroclor 1016	82		81		40-140	1		50	A
Aroclor 1260	87		83		40-140	5		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73		73		30-150	A
Decachlorobiphenyl	86		82		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		70		30-150	B
Decachlorobiphenyl	78		77		30-150	B

PESTICIDES

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-01
Client ID: GRID E_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 08:03
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 13:37
Analyst: JAW
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:25
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	2.05	0.401	1	A
Lindane	ND		ug/kg	0.853	0.381	1	A
Alpha-BHC	ND		ug/kg	0.853	0.242	1	A
Beta-BHC	ND		ug/kg	2.05	0.776	1	A
Heptachlor	ND		ug/kg	1.02	0.459	1	A
Aldrin	ND		ug/kg	2.05	0.721	1	A
Heptachlor epoxide	ND		ug/kg	3.84	1.15	1	A
Endrin	ND		ug/kg	0.853	0.350	1	A
Endrin aldehyde	ND		ug/kg	2.56	0.896	1	A
Endrin ketone	ND		ug/kg	2.05	0.527	1	A
Dieldrin	ND		ug/kg	1.28	0.640	1	A
4,4'-DDE	ND		ug/kg	2.05	0.473	1	A
4,4'-DDD	ND		ug/kg	2.05	0.730	1	A
4,4'-DDT	ND		ug/kg	3.84	1.65	1	A
Endosulfan I	ND		ug/kg	2.05	0.484	1	A
Endosulfan II	ND		ug/kg	2.05	0.684	1	A
Endosulfan sulfate	ND		ug/kg	0.853	0.406	1	A
Methoxychlor	ND		ug/kg	3.84	1.19	1	A
Toxaphene	ND		ug/kg	38.4	10.7	1	A
cis-Chlordane	ND		ug/kg	2.56	0.713	1	A
trans-Chlordane	ND		ug/kg	2.56	0.676	1	A
Chlordane	ND		ug/kg	17.0	6.78	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-01 Date Collected: 10/14/21 08:03

Client ID: GRID E_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	88		30-150	A
Decachlorobiphenyl	107		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	71		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-03
Client ID: GRID F_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 09:07
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 13:49
Analyst: JAW
Percent Solids: 98%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:25
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.59	0.311	1	A
Lindane	ND		ug/kg	0.663	0.296	1	A
Alpha-BHC	ND		ug/kg	0.663	0.188	1	A
Beta-BHC	ND		ug/kg	1.59	0.603	1	A
Heptachlor	ND		ug/kg	0.795	0.356	1	A
Aldrin	ND		ug/kg	1.59	0.560	1	A
Heptachlor epoxide	ND		ug/kg	2.98	0.895	1	A
Endrin	ND		ug/kg	0.663	0.272	1	A
Endrin aldehyde	ND		ug/kg	1.99	0.696	1	A
Endrin ketone	ND		ug/kg	1.59	0.410	1	A
Dieldrin	3.82		ug/kg	0.994	0.497	1	A
4,4'-DDE	68.3		ug/kg	1.59	0.368	1	A
4,4'-DDD	1.51	J	ug/kg	1.59	0.567	1	B
4,4'-DDT	87.2		ug/kg	2.98	1.28	1	A
Endosulfan I	ND		ug/kg	1.59	0.376	1	A
Endosulfan II	ND		ug/kg	1.59	0.532	1	A
Endosulfan sulfate	ND		ug/kg	0.663	0.315	1	A
Methoxychlor	ND		ug/kg	2.98	0.928	1	A
Toxaphene	ND		ug/kg	29.8	8.35	1	A
cis-Chlordane	ND		ug/kg	1.99	0.554	1	A
trans-Chlordane	ND		ug/kg	1.99	0.525	1	A
Chlordane	ND		ug/kg	13.2	5.27	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-03 Date Collected: 10/14/21 09:07

Client ID: GRID F_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	86		30-150	A
Decachlorobiphenyl	102		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	71		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-03
Client ID: GRID F_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 09:07
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 10/20/21 18:00
Analyst: AR
Percent Solids: 98%
Methylation Date: 10/20/21 12:46

Extraction Method: EPA 8151A
Extraction Date: 10/19/21 12:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
2,4-D	ND		ug/kg	167	10.5	1	A
2,4,5-T	ND		ug/kg	167	5.18	1	A
2,4,5-TP (Silvex)	ND		ug/kg	167	4.45	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	93		30-150	A
DCAA	74		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-04
Client ID: GRID F_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 09:07
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 16:23
Analyst: AR
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.92	0.377	1	A
Lindane	ND		ug/kg	0.802	0.358	1	A
Alpha-BHC	ND		ug/kg	0.802	0.228	1	A
Beta-BHC	ND		ug/kg	1.92	0.730	1	A
Heptachlor	ND		ug/kg	0.962	0.431	1	A
Aldrin	ND		ug/kg	1.92	0.677	1	A
Heptachlor epoxide	ND		ug/kg	3.61	1.08	1	A
Endrin	ND		ug/kg	0.802	0.329	1	A
Endrin aldehyde	ND		ug/kg	2.40	0.842	1	A
Endrin ketone	ND		ug/kg	1.92	0.495	1	A
Dieldrin	0.980	J	ug/kg	1.20	0.601	1	A
4,4'-DDE	19.1		ug/kg	1.92	0.445	1	A
4,4'-DDD	ND		ug/kg	1.92	0.686	1	A
4,4'-DDT	26.6		ug/kg	3.61	1.55	1	B
Endosulfan I	ND		ug/kg	1.92	0.454	1	A
Endosulfan II	0.860	J	ug/kg	1.92	0.643	1	A
Endosulfan sulfate	1.93		ug/kg	0.802	0.382	1	B
Methoxychlor	ND		ug/kg	3.61	1.12	1	A
Toxaphene	ND		ug/kg	36.1	10.1	1	A
cis-Chlordane	ND		ug/kg	2.40	0.670	1	A
trans-Chlordane	ND		ug/kg	2.40	0.635	1	A
Chlordane	ND		ug/kg	16.0	6.37	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-04 Date Collected: 10/14/21 09:07

Client ID: GRID F_18-24 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	97		30-150	A
Decachlorobiphenyl	100		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	97		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-05
Client ID: GRID G_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 11:45
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 14:00
Analyst: JAW
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:25
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.64	0.322	1	A
Lindane	ND		ug/kg	0.685	0.306	1	A
Alpha-BHC	ND		ug/kg	0.685	0.194	1	A
Beta-BHC	ND		ug/kg	1.64	0.623	1	A
Heptachlor	ND		ug/kg	0.822	0.368	1	A
Aldrin	ND		ug/kg	1.64	0.579	1	A
Heptachlor epoxide	ND		ug/kg	3.08	0.925	1	A
Endrin	ND		ug/kg	0.685	0.281	1	A
Endrin aldehyde	ND		ug/kg	2.05	0.719	1	A
Endrin ketone	ND		ug/kg	1.64	0.423	1	A
Dieldrin	3.98	P	ug/kg	1.03	0.514	1	A
4,4'-DDE	66.2		ug/kg	1.64	0.380	1	A
4,4'-DDD	ND		ug/kg	1.64	0.586	1	A
4,4'-DDT	88.2		ug/kg	3.08	1.32	1	A
Endosulfan I	ND		ug/kg	1.64	0.388	1	A
Endosulfan II	ND		ug/kg	1.64	0.549	1	A
Endosulfan sulfate	ND		ug/kg	0.685	0.326	1	A
Methoxychlor	ND		ug/kg	3.08	0.959	1	A
Toxaphene	ND		ug/kg	30.8	8.63	1	A
cis-Chlordane	ND		ug/kg	2.05	0.573	1	A
trans-Chlordane	ND		ug/kg	2.05	0.542	1	A
Chlordane	ND		ug/kg	13.7	5.44	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-05 Date Collected: 10/14/21 11:45

Client ID: GRID G_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	89		30-150	A
Decachlorobiphenyl	98		30-150	A
2,4,5,6-Tetrachloro-m-xylene	67		30-150	B
Decachlorobiphenyl	66		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-06
Client ID: GRID G_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 11:45
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 16:35
Analyst: AR
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.74	0.341	1	A
Lindane	ND		ug/kg	0.725	0.324	1	A
Alpha-BHC	ND		ug/kg	0.725	0.206	1	A
Beta-BHC	ND		ug/kg	1.74	0.660	1	A
Heptachlor	ND		ug/kg	0.870	0.390	1	A
Aldrin	ND		ug/kg	1.74	0.613	1	A
Heptachlor epoxide	ND		ug/kg	3.26	0.979	1	A
Endrin	ND		ug/kg	0.725	0.297	1	A
Endrin aldehyde	ND		ug/kg	2.18	0.761	1	A
Endrin ketone	ND		ug/kg	1.74	0.448	1	A
Dieldrin	0.687	J	ug/kg	1.09	0.544	1	A
4,4'-DDE	12.6		ug/kg	1.74	0.402	1	A
4,4'-DDD	ND		ug/kg	1.74	0.621	1	A
4,4'-DDT	17.0		ug/kg	3.26	1.40	1	A
Endosulfan I	ND		ug/kg	1.74	0.411	1	A
Endosulfan II	ND		ug/kg	1.74	0.581	1	B
Endosulfan sulfate	0.541	JIP	ug/kg	0.725	0.345	1	A
Methoxychlor	ND		ug/kg	3.26	1.02	1	A
Toxaphene	ND		ug/kg	32.6	9.14	1	A
cis-Chlordane	ND		ug/kg	2.18	0.606	1	A
trans-Chlordane	ND		ug/kg	2.18	0.574	1	A
Chlordane	ND		ug/kg	14.5	5.76	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-06 Date Collected: 10/14/21 11:45

Client ID: GRID G_18-24 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	95		30-150	A
Decachlorobiphenyl	107		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		30-150	B
Decachlorobiphenyl	105		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-07
Client ID: GRID H_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 10:59
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 14:11
Analyst: SDC
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:25
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.70	0.333	1	A
Lindane	ND		ug/kg	0.708	0.316	1	A
Alpha-BHC	ND		ug/kg	0.708	0.201	1	A
Beta-BHC	ND		ug/kg	1.70	0.644	1	A
Heptachlor	ND		ug/kg	0.849	0.381	1	A
Aldrin	ND		ug/kg	1.70	0.598	1	A
Heptachlor epoxide	ND		ug/kg	3.18	0.956	1	A
Endrin	ND		ug/kg	0.708	0.290	1	A
Endrin aldehyde	ND		ug/kg	2.12	0.743	1	A
Endrin ketone	ND		ug/kg	1.70	0.437	1	A
Dieldrin	52.1		ug/kg	1.06	0.531	1	A
4,4'-DDE	476	E	ug/kg	1.70	0.393	1	A
4,4'-DDD	6.83		ug/kg	1.70	0.606	1	B
4,4'-DDT	780	E	ug/kg	3.18	1.37	1	A
Endosulfan I	ND		ug/kg	1.70	0.401	1	A
Endosulfan II	ND		ug/kg	1.70	0.568	1	A
Endosulfan sulfate	ND		ug/kg	0.708	0.337	1	A
Methoxychlor	ND		ug/kg	3.18	0.991	1	A
Toxaphene	ND		ug/kg	31.8	8.92	1	A
cis-Chlordane	ND		ug/kg	2.12	0.592	1	A
trans-Chlordane	ND		ug/kg	2.12	0.560	1	A
Chlordane	ND		ug/kg	14.2	5.63	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-07 Date Collected: 10/14/21 10:59

Client ID: GRID H_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	94		30-150	A
Decachlorobiphenyl	102		30-150	A
2,4,5,6-Tetrachloro-m-xylene	86		30-150	B
Decachlorobiphenyl	69		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-07 D
Client ID: GRID H_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 10:59
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/20/21 10:56
Analyst: SDC
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:25
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDE	400		ug/kg	34.0	7.86	20	A
4,4'-DDT	793		ug/kg	63.7	27.3	20	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-08
Client ID: GRID H_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 10:59
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 16:48
Analyst: AR
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.71	0.335	1	A
Lindane	ND		ug/kg	0.713	0.318	1	A
Alpha-BHC	ND		ug/kg	0.713	0.202	1	A
Beta-BHC	ND		ug/kg	1.71	0.648	1	A
Heptachlor	ND		ug/kg	0.855	0.383	1	A
Aldrin	ND		ug/kg	1.71	0.602	1	A
Heptachlor epoxide	ND		ug/kg	3.21	0.962	1	A
Endrin	0.386	JIP	ug/kg	0.713	0.292	1	A
Endrin aldehyde	ND		ug/kg	2.14	0.748	1	A
Endrin ketone	ND		ug/kg	1.71	0.440	1	A
Dieldrin	16.0		ug/kg	1.07	0.534	1	B
4,4'-DDE	132		ug/kg	1.71	0.396	1	B
4,4'-DDD	1.21	JIP	ug/kg	1.71	0.610	1	A
4,4'-DDT	282	E	ug/kg	3.21	1.38	1	A
Endosulfan I	ND		ug/kg	1.71	0.404	1	A
Endosulfan II	1.94		ug/kg	1.71	0.572	1	A
Endosulfan sulfate	9.59		ug/kg	0.713	0.339	1	A
Methoxychlor	1.01	JIP	ug/kg	3.21	0.998	1	B
Toxaphene	ND		ug/kg	32.1	8.98	1	A
cis-Chlordane	ND		ug/kg	2.14	0.596	1	A
trans-Chlordane	ND		ug/kg	2.14	0.564	1	A
Chlordane	ND		ug/kg	14.2	5.66	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-08 Date Collected: 10/14/21 10:59

Client ID: GRID H_18-24 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		30-150	A
Decachlorobiphenyl	88		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		30-150	B
Decachlorobiphenyl	88		30-150	B

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-08 D
Client ID: GRID H_18-24
Sample Location: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/29/21 11:31
Analyst: AR
Percent Solids: 93%

Date Collected: 10/14/21 10:59
Date Received: 10/14/21
Field Prep: Not Specified

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDT	315		ug/kg	16.0	6.88	5	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-09
Client ID: GRID I_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 13:18
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 14:22
Analyst: SDC
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:25
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.71	0.336	1	A
Lindane	ND		ug/kg	0.714	0.319	1	A
Alpha-BHC	ND		ug/kg	0.714	0.203	1	A
Beta-BHC	ND		ug/kg	1.71	0.650	1	A
Heptachlor	ND		ug/kg	0.857	0.384	1	A
Aldrin	ND		ug/kg	1.71	0.603	1	A
Heptachlor epoxide	ND		ug/kg	3.21	0.964	1	A
Endrin	ND		ug/kg	0.714	0.293	1	A
Endrin aldehyde	ND		ug/kg	2.14	0.750	1	A
Endrin ketone	ND		ug/kg	1.71	0.441	1	A
Dieldrin	25.3		ug/kg	1.07	0.535	1	A
4,4'-DDE	367	E	ug/kg	1.71	0.396	1	A
4,4'-DDD	8.88		ug/kg	1.71	0.611	1	A
4,4'-DDT	512	E	ug/kg	3.21	1.38	1	A
Endosulfan I	ND		ug/kg	1.71	0.405	1	A
Endosulfan II	ND		ug/kg	1.71	0.572	1	A
Endosulfan sulfate	ND		ug/kg	0.714	0.340	1	A
Methoxychlor	ND		ug/kg	3.21	1.00	1	A
Toxaphene	ND		ug/kg	32.1	9.00	1	A
cis-Chlordane	ND		ug/kg	2.14	0.597	1	A
trans-Chlordane	ND		ug/kg	2.14	0.565	1	A
Chlordane	ND		ug/kg	14.3	5.68	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-09 Date Collected: 10/14/21 13:18

Client ID: GRID I_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	85		30-150	A
Decachlorobiphenyl	111		30-150	A
2,4,5,6-Tetrachloro-m-xylene	81		30-150	B
Decachlorobiphenyl	91		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-09 D
Client ID: GRID I_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 13:18
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/20/21 10:34
Analyst: SDC
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:25
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDE	269		ug/kg	17.1	3.96	10	A
4,4'-DDT	427		ug/kg	32.1	13.8	10	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-10
Client ID: GRID I_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 13:18
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 17:01
Analyst: AR
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.67	0.327	1	A
Lindane	ND		ug/kg	0.696	0.311	1	A
Alpha-BHC	ND		ug/kg	0.696	0.198	1	A
Beta-BHC	ND		ug/kg	1.67	0.633	1	A
Heptachlor	ND		ug/kg	0.835	0.374	1	A
Aldrin	ND		ug/kg	1.67	0.588	1	A
Heptachlor epoxide	ND		ug/kg	3.13	0.939	1	A
Endrin	ND		ug/kg	0.696	0.285	1	A
Endrin aldehyde	ND		ug/kg	2.09	0.730	1	A
Endrin ketone	ND		ug/kg	1.67	0.430	1	A
Dieldrin	3.31		ug/kg	1.04	0.522	1	A
4,4'-DDE	55.4		ug/kg	1.67	0.386	1	B
4,4'-DDD	0.830	J	ug/kg	1.67	0.595	1	B
4,4'-DDT	98.3		ug/kg	3.13	1.34	1	A
Endosulfan I	ND		ug/kg	1.67	0.394	1	A
Endosulfan II	0.823	J	ug/kg	1.67	0.558	1	A
Endosulfan sulfate	3.53		ug/kg	0.696	0.331	1	B
Methoxychlor	ND		ug/kg	3.13	0.974	1	A
Toxaphene	ND		ug/kg	31.3	8.76	1	A
cis-Chlordane	ND		ug/kg	2.09	0.581	1	A
trans-Chlordane	ND		ug/kg	2.09	0.551	1	A
Chlordane	ND		ug/kg	13.9	5.53	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-10 Date Collected: 10/14/21 13:18

Client ID: GRID I_18-24 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	100		30-150	A
Decachlorobiphenyl	109		30-150	A
2,4,5,6-Tetrachloro-m-xylene	82		30-150	B
Decachlorobiphenyl	107		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-11
Client ID: GRID J_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 13:50
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 14:33
Analyst: SDC
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:25
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.65	0.322	1	A
Lindane	ND		ug/kg	0.686	0.307	1	A
Alpha-BHC	ND		ug/kg	0.686	0.195	1	A
Beta-BHC	ND		ug/kg	1.65	0.624	1	A
Heptachlor	ND		ug/kg	0.824	0.369	1	A
Aldrin	ND		ug/kg	1.65	0.580	1	A
Heptachlor epoxide	ND		ug/kg	3.09	0.926	1	A
Endrin	ND		ug/kg	0.686	0.281	1	A
Endrin aldehyde	ND		ug/kg	2.06	0.721	1	A
Endrin ketone	ND		ug/kg	1.65	0.424	1	A
Dieldrin	20.2		ug/kg	1.03	0.515	1	A
4,4'-DDE	325	E	ug/kg	1.65	0.381	1	A
4,4'-DDD	5.60		ug/kg	1.65	0.588	1	B
4,4'-DDT	524	E	ug/kg	3.09	1.32	1	A
Endosulfan I	ND		ug/kg	1.65	0.389	1	A
Endosulfan II	ND		ug/kg	1.65	0.550	1	A
Endosulfan sulfate	ND		ug/kg	0.686	0.327	1	A
Methoxychlor	ND		ug/kg	3.09	0.961	1	A
Toxaphene	ND		ug/kg	30.9	8.65	1	A
cis-Chlordane	ND		ug/kg	2.06	0.574	1	A
trans-Chlordane	ND		ug/kg	2.06	0.544	1	A
Chlordane	ND		ug/kg	13.7	5.46	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-11 Date Collected: 10/14/21 13:50

Client ID: GRID J_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	82		30-150	A
Decachlorobiphenyl	106		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	76		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-11 D
Client ID: GRID J_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 13:50
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/20/21 10:45
Analyst: SDC
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:25
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDE	272		ug/kg	16.5	3.81	10	A
4,4'-DDT	502		ug/kg	30.9	13.2	10	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-12
Client ID: GRID J_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 13:50
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 17:13
Analyst: AR
Percent Solids: 97%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.64	0.320	1	A
Lindane	ND		ug/kg	0.682	0.305	1	A
Alpha-BHC	ND		ug/kg	0.682	0.194	1	A
Beta-BHC	ND		ug/kg	1.64	0.620	1	A
Heptachlor	ND		ug/kg	0.818	0.367	1	A
Aldrin	ND		ug/kg	1.64	0.576	1	A
Heptachlor epoxide	ND		ug/kg	3.07	0.920	1	A
Endrin	ND		ug/kg	0.682	0.280	1	A
Endrin aldehyde	ND		ug/kg	2.04	0.716	1	A
Endrin ketone	ND		ug/kg	1.64	0.421	1	A
Dieldrin	0.595	J	ug/kg	1.02	0.511	1	A
4,4'-DDE	11.1		ug/kg	1.64	0.378	1	A
4,4'-DDD	ND		ug/kg	1.64	0.584	1	A
4,4'-DDT	19.2		ug/kg	3.07	1.32	1	A
Endosulfan I	ND		ug/kg	1.64	0.386	1	A
Endosulfan II	ND		ug/kg	1.64	0.547	1	A
Endosulfan sulfate	ND		ug/kg	0.682	0.324	1	A
Methoxychlor	ND		ug/kg	3.07	0.954	1	A
Toxaphene	ND		ug/kg	30.7	8.59	1	A
cis-Chlordane	ND		ug/kg	2.04	0.570	1	A
trans-Chlordane	ND		ug/kg	2.04	0.540	1	A
Chlordane	ND		ug/kg	13.6	5.42	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-12 Date Collected: 10/14/21 13:50

Client ID: GRID J_18-24 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	102		30-150	A
Decachlorobiphenyl	116		30-150	A
2,4,5,6-Tetrachloro-m-xylene	80		30-150	B
Decachlorobiphenyl	110		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-13
Client ID: GRID K_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 15:10
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 14:45
Analyst: SDC
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:25
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.70	0.333	1	A
Lindane	ND		ug/kg	0.708	0.316	1	A
Alpha-BHC	ND		ug/kg	0.708	0.201	1	A
Beta-BHC	ND		ug/kg	1.70	0.644	1	A
Heptachlor	ND		ug/kg	0.850	0.381	1	A
Aldrin	ND		ug/kg	1.70	0.598	1	A
Heptachlor epoxide	ND		ug/kg	3.18	0.956	1	A
Endrin	ND		ug/kg	0.708	0.290	1	A
Endrin aldehyde	ND		ug/kg	2.12	0.743	1	A
Endrin ketone	ND		ug/kg	1.70	0.438	1	A
Dieldrin	30.0		ug/kg	1.06	0.531	1	A
4,4'-DDE	427	E	ug/kg	1.70	0.393	1	A
4,4'-DDD	9.79		ug/kg	1.70	0.606	1	B
4,4'-DDT	721	E	ug/kg	3.18	1.37	1	A
Endosulfan I	ND		ug/kg	1.70	0.401	1	A
Endosulfan II	ND		ug/kg	1.70	0.568	1	A
Endosulfan sulfate	ND		ug/kg	0.708	0.337	1	A
Methoxychlor	ND		ug/kg	3.18	0.991	1	A
Toxaphene	ND		ug/kg	31.8	8.92	1	A
cis-Chlordane	ND		ug/kg	2.12	0.592	1	A
trans-Chlordane	ND		ug/kg	2.12	0.561	1	A
Chlordane	ND		ug/kg	14.2	5.63	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-13 Date Collected: 10/14/21 15:10

Client ID: GRID K_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		30-150	A
Decachlorobiphenyl	107		30-150	A
2,4,5,6-Tetrachloro-m-xylene	85		30-150	B
Decachlorobiphenyl	75		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-13 D
Client ID: GRID K_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 15:10
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/20/21 11:07
Analyst: AR
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:25
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDE	378		ug/kg	34.0	7.86	20	A
4,4'-DDT	764		ug/kg	63.7	27.3	20	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-14
Client ID: GRID K_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 15:10
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 17:26
Analyst: AR
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.63	0.320	1	A
Lindane	ND		ug/kg	0.680	0.304	1	A
Alpha-BHC	ND		ug/kg	0.680	0.193	1	A
Beta-BHC	ND		ug/kg	1.63	0.619	1	A
Heptachlor	ND		ug/kg	0.816	0.366	1	A
Aldrin	ND		ug/kg	1.63	0.575	1	A
Heptachlor epoxide	ND		ug/kg	3.06	0.918	1	A
Endrin	ND		ug/kg	0.680	0.279	1	A
Endrin aldehyde	ND		ug/kg	2.04	0.714	1	A
Endrin ketone	ND		ug/kg	1.63	0.420	1	A
Dieldrin	0.768	J	ug/kg	1.02	0.510	1	A
4,4'-DDE	10.6		ug/kg	1.63	0.378	1	B
4,4'-DDD	ND		ug/kg	1.63	0.582	1	A
4,4'-DDT	21.3		ug/kg	3.06	1.31	1	B
Endosulfan I	ND		ug/kg	1.63	0.386	1	A
Endosulfan II	ND		ug/kg	1.63	0.546	1	A
Endosulfan sulfate	0.687	IP	ug/kg	0.680	0.324	1	A
Methoxychlor	ND		ug/kg	3.06	0.952	1	A
Toxaphene	ND		ug/kg	30.6	8.57	1	A
cis-Chlordane	ND		ug/kg	2.04	0.569	1	A
trans-Chlordane	ND		ug/kg	2.04	0.539	1	A
Chlordane	ND		ug/kg	13.6	5.41	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-14 Date Collected: 10/14/21 15:10

Client ID: GRID K_18-24 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	91		30-150	A
Decachlorobiphenyl	107		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	108		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-15
Client ID: GRID U_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 08:39
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 14:56
Analyst: JAW
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:25
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.74	0.342	1	A
Lindane	ND		ug/kg	0.727	0.325	1	A
Alpha-BHC	ND		ug/kg	0.727	0.206	1	A
Beta-BHC	ND		ug/kg	1.74	0.662	1	A
Heptachlor	ND		ug/kg	0.873	0.391	1	A
Aldrin	ND		ug/kg	1.74	0.614	1	A
Heptachlor epoxide	ND		ug/kg	3.27	0.982	1	A
Endrin	ND		ug/kg	0.727	0.298	1	A
Endrin aldehyde	ND		ug/kg	2.18	0.764	1	A
Endrin ketone	ND		ug/kg	1.74	0.449	1	A
Dieldrin	6.08	P	ug/kg	1.09	0.545	1	A
4,4'-DDE	47.3		ug/kg	1.74	0.404	1	A
4,4'-DDD	3.06	P	ug/kg	1.74	0.622	1	B
4,4'-DDT	89.2		ug/kg	3.27	1.40	1	A
Endosulfan I	ND		ug/kg	1.74	0.412	1	A
Endosulfan II	ND		ug/kg	1.74	0.583	1	A
Endosulfan sulfate	ND		ug/kg	0.727	0.346	1	A
Methoxychlor	ND		ug/kg	3.27	1.02	1	A
Toxaphene	ND		ug/kg	32.7	9.16	1	A
cis-Chlordane	ND		ug/kg	2.18	0.608	1	A
trans-Chlordane	ND		ug/kg	2.18	0.576	1	A
Chlordane	ND		ug/kg	14.5	5.78	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-15 Date Collected: 10/14/21 08:39

Client ID: GRID U_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	81		30-150	A
Decachlorobiphenyl	103		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		30-150	B
Decachlorobiphenyl	76		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-16
Client ID: GRID U_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 08:39
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 17:38
Analyst: AR
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.78	0.350	1	A
Lindane	ND		ug/kg	0.744	0.333	1	A
Alpha-BHC	ND		ug/kg	0.744	0.211	1	A
Beta-BHC	ND		ug/kg	1.78	0.677	1	A
Heptachlor	ND		ug/kg	0.893	0.400	1	A
Aldrin	ND		ug/kg	1.78	0.629	1	A
Heptachlor epoxide	ND		ug/kg	3.35	1.00	1	A
Endrin	ND		ug/kg	0.744	0.305	1	A
Endrin aldehyde	ND		ug/kg	2.23	0.781	1	A
Endrin ketone	ND		ug/kg	1.78	0.460	1	A
Dieldrin	ND		ug/kg	1.12	0.558	1	A
4,4'-DDE	2.44		ug/kg	1.78	0.413	1	A
4,4'-DDD	ND		ug/kg	1.78	0.637	1	A
4,4'-DDT	4.92		ug/kg	3.35	1.44	1	A
Endosulfan I	ND		ug/kg	1.78	0.422	1	A
Endosulfan II	ND		ug/kg	1.78	0.597	1	A
Endosulfan sulfate	ND		ug/kg	0.744	0.354	1	A
Methoxychlor	ND		ug/kg	3.35	1.04	1	A
Toxaphene	ND		ug/kg	33.5	9.38	1	A
cis-Chlordane	ND		ug/kg	2.23	0.622	1	A
trans-Chlordane	ND		ug/kg	2.23	0.589	1	A
Chlordane	ND		ug/kg	14.9	5.92	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-16 Date Collected: 10/14/21 08:39

Client ID: GRID U_18-24 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	91		30-150	A
Decachlorobiphenyl	101		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	98		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-17
Client ID: GRID V_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 10:20
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 15:07
Analyst: JAW
Percent Solids: 77%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:26
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	2.05	0.401	1	A
Lindane	ND		ug/kg	0.854	0.382	1	A
Alpha-BHC	ND		ug/kg	0.854	0.242	1	A
Beta-BHC	ND		ug/kg	2.05	0.777	1	A
Heptachlor	ND		ug/kg	1.02	0.459	1	A
Aldrin	ND		ug/kg	2.05	0.721	1	A
Heptachlor epoxide	ND		ug/kg	3.84	1.15	1	A
Endrin	ND		ug/kg	0.854	0.350	1	A
Endrin aldehyde	ND		ug/kg	2.56	0.896	1	A
Endrin ketone	ND		ug/kg	2.05	0.528	1	A
Dieldrin	2.29	P	ug/kg	1.28	0.640	1	A
4,4'-DDE	16.8		ug/kg	2.05	0.474	1	A
4,4'-DDD	ND		ug/kg	2.05	0.731	1	A
4,4'-DDT	36.7		ug/kg	3.84	1.65	1	A
Endosulfan I	ND		ug/kg	2.05	0.484	1	A
Endosulfan II	ND		ug/kg	2.05	0.685	1	A
Endosulfan sulfate	ND		ug/kg	0.854	0.406	1	A
Methoxychlor	ND		ug/kg	3.84	1.20	1	A
Toxaphene	ND		ug/kg	38.4	10.8	1	A
cis-Chlordane	ND		ug/kg	2.56	0.714	1	A
trans-Chlordane	ND		ug/kg	2.56	0.676	1	A
Chlordane	ND		ug/kg	17.1	6.79	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-17 Date Collected: 10/14/21 10:20

Client ID: GRID V_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	85		30-150	A
Decachlorobiphenyl	111		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	78		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-18
Client ID: GRID V_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 10:20
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 17:51
Analyst: AR
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.67	0.327	1	A
Lindane	ND		ug/kg	0.697	0.311	1	A
Alpha-BHC	ND		ug/kg	0.697	0.198	1	A
Beta-BHC	ND		ug/kg	1.67	0.634	1	A
Heptachlor	ND		ug/kg	0.836	0.375	1	A
Aldrin	ND		ug/kg	1.67	0.589	1	A
Heptachlor epoxide	ND		ug/kg	3.14	0.940	1	A
Endrin	1.82		ug/kg	0.697	0.286	1	B
Endrin aldehyde	ND		ug/kg	2.09	0.732	1	A
Endrin ketone	ND		ug/kg	1.67	0.430	1	A
Dieldrin	12.4		ug/kg	1.04	0.522	1	A
4,4'-DDE	134		ug/kg	1.67	0.387	1	B
4,4'-DDD	3.42	IP	ug/kg	1.67	0.596	1	A
4,4'-DDT	325	E	ug/kg	3.14	1.34	1	A
Endosulfan I	ND		ug/kg	1.67	0.395	1	A
Endosulfan II	1.52	J	ug/kg	1.67	0.559	1	B
Endosulfan sulfate	10.8		ug/kg	0.697	0.332	1	A
Methoxychlor	2.74	JIP	ug/kg	3.14	0.975	1	B
Toxaphene	ND		ug/kg	31.4	8.78	1	A
cis-Chlordane	ND		ug/kg	2.09	0.582	1	A
trans-Chlordane	ND		ug/kg	2.09	0.552	1	A
Chlordane	ND		ug/kg	13.9	5.54	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-18 Date Collected: 10/14/21 10:20

Client ID: GRID V_18-24 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	90		30-150	A
Decachlorobiphenyl	105		30-150	A
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	100		30-150	B

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-18 D
Client ID: GRID V_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 10:20
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/29/21 11:42
Analyst: AR
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDT	335		ug/kg	15.7	6.72	5	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-19
Client ID: GRID W_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 12:11
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 15:18
Analyst: JAW
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:26
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.97	0.386	1	A
Lindane	ND		ug/kg	0.820	0.367	1	A
Alpha-BHC	ND		ug/kg	0.820	0.233	1	A
Beta-BHC	ND		ug/kg	1.97	0.746	1	A
Heptachlor	ND		ug/kg	0.984	0.441	1	A
Aldrin	ND		ug/kg	1.97	0.693	1	A
Heptachlor epoxide	ND		ug/kg	3.69	1.11	1	A
Endrin	ND		ug/kg	0.820	0.336	1	A
Endrin aldehyde	ND		ug/kg	2.46	0.861	1	A
Endrin ketone	ND		ug/kg	1.97	0.507	1	A
Dieldrin	2.52		ug/kg	1.23	0.615	1	A
4,4'-DDE	38.5		ug/kg	1.97	0.455	1	A
4,4'-DDD	ND		ug/kg	1.97	0.702	1	A
4,4'-DDT	53.0		ug/kg	3.69	1.58	1	A
Endosulfan I	ND		ug/kg	1.97	0.465	1	A
Endosulfan II	ND		ug/kg	1.97	0.658	1	A
Endosulfan sulfate	ND		ug/kg	0.820	0.390	1	A
Methoxychlor	ND		ug/kg	3.69	1.15	1	A
Toxaphene	ND		ug/kg	36.9	10.3	1	A
cis-Chlordane	ND		ug/kg	2.46	0.686	1	A
trans-Chlordane	ND		ug/kg	2.46	0.650	1	A
Chlordane	ND		ug/kg	16.4	6.52	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-19 Date Collected: 10/14/21 12:11

Client ID: GRID W_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	91		30-150	A
Decachlorobiphenyl	109		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		30-150	B
Decachlorobiphenyl	83		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-20
Client ID: GRID W_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 12:11
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 18:03
Analyst: AR
Percent Solids: 95%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.64	0.321	1	A
Lindane	ND		ug/kg	0.683	0.305	1	A
Alpha-BHC	ND		ug/kg	0.683	0.194	1	A
Beta-BHC	ND		ug/kg	1.64	0.622	1	A
Heptachlor	ND		ug/kg	0.820	0.367	1	A
Aldrin	ND		ug/kg	1.64	0.577	1	A
Heptachlor epoxide	ND		ug/kg	3.07	0.922	1	A
Endrin	ND		ug/kg	0.683	0.280	1	A
Endrin aldehyde	ND		ug/kg	2.05	0.717	1	A
Endrin ketone	ND		ug/kg	1.64	0.422	1	A
Dieldrin	ND		ug/kg	1.02	0.512	1	B
4,4'-DDE	5.43		ug/kg	1.64	0.379	1	B
4,4'-DDD	ND		ug/kg	1.64	0.585	1	A
4,4'-DDT	8.67		ug/kg	3.07	1.32	1	A
Endosulfan I	ND		ug/kg	1.64	0.387	1	A
Endosulfan II	ND		ug/kg	1.64	0.548	1	A
Endosulfan sulfate	ND		ug/kg	0.683	0.325	1	A
Methoxychlor	ND		ug/kg	3.07	0.956	1	A
Toxaphene	ND		ug/kg	30.7	8.61	1	A
cis-Chlordane	ND		ug/kg	2.05	0.571	1	A
trans-Chlordane	ND		ug/kg	2.05	0.541	1	A
Chlordane	ND		ug/kg	13.7	5.43	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-20 Date Collected: 10/14/21 12:11

Client ID: GRID W_18-24 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	111		30-150	A
Decachlorobiphenyl	114		30-150	A
2,4,5,6-Tetrachloro-m-xylene	92		30-150	B
Decachlorobiphenyl	121		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-21
Client ID: GRID X_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 12:46
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 15:29
Analyst: JAW
Percent Solids: 97%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:26
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.62	0.318	1	A
Lindane	ND		ug/kg	0.676	0.302	1	A
Alpha-BHC	ND		ug/kg	0.676	0.192	1	A
Beta-BHC	ND		ug/kg	1.62	0.615	1	A
Heptachlor	ND		ug/kg	0.811	0.364	1	A
Aldrin	ND		ug/kg	1.62	0.571	1	A
Heptachlor epoxide	ND		ug/kg	3.04	0.912	1	A
Endrin	ND		ug/kg	0.676	0.277	1	A
Endrin aldehyde	ND		ug/kg	2.03	0.710	1	A
Endrin ketone	ND		ug/kg	1.62	0.418	1	A
Dieldrin	ND		ug/kg	1.01	0.507	1	A
4,4'-DDE	6.76		ug/kg	1.62	0.375	1	A
4,4'-DDD	1.34	JP	ug/kg	1.62	0.578	1	B
4,4'-DDT	13.9		ug/kg	3.04	1.30	1	A
Endosulfan I	ND		ug/kg	1.62	0.383	1	A
Endosulfan II	ND		ug/kg	1.62	0.542	1	A
Endosulfan sulfate	ND		ug/kg	0.676	0.322	1	A
Methoxychlor	ND		ug/kg	3.04	0.946	1	A
Toxaphene	ND		ug/kg	30.4	8.51	1	A
cis-Chlordane	ND		ug/kg	2.03	0.565	1	A
trans-Chlordane	ND		ug/kg	2.03	0.535	1	A
Chlordane	ND		ug/kg	13.5	5.37	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-21 Date Collected: 10/14/21 12:46

Client ID: GRID X_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	80		30-150	A
Decachlorobiphenyl	97		30-150	A
2,4,5,6-Tetrachloro-m-xylene	68		30-150	B
Decachlorobiphenyl	72		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-21
Client ID: GRID X_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 12:46
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 10/20/21 18:19
Analyst: AR
Percent Solids: 97%
Methylation Date: 10/20/21 12:46

Extraction Method: EPA 8151A
Extraction Date: 10/19/21 12:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
2,4-D	ND		ug/kg	171	10.8	1	A
2,4,5-T	ND		ug/kg	171	5.29	1	A
2,4,5-TP (Silvex)	ND		ug/kg	171	4.54	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	92		30-150	A
DCAA	73		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-22
Client ID: GRID X_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 12:46
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 18:16
Analyst: AR
Percent Solids: 98%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.58	0.308	1	A
Lindane	ND		ug/kg	0.656	0.293	1	A
Alpha-BHC	ND		ug/kg	0.656	0.186	1	A
Beta-BHC	ND		ug/kg	1.58	0.597	1	A
Heptachlor	ND		ug/kg	0.788	0.353	1	A
Aldrin	ND		ug/kg	1.58	0.555	1	A
Heptachlor epoxide	ND		ug/kg	2.95	0.886	1	A
Endrin	ND		ug/kg	0.656	0.269	1	A
Endrin aldehyde	ND		ug/kg	1.97	0.689	1	A
Endrin ketone	ND		ug/kg	1.58	0.406	1	A
Dieldrin	ND		ug/kg	0.984	0.492	1	A
4,4'-DDE	1.30	J	ug/kg	1.58	0.364	1	B
4,4'-DDD	ND		ug/kg	1.58	0.562	1	A
4,4'-DDT	2.57	J	ug/kg	2.95	1.27	1	B
Endosulfan I	ND		ug/kg	1.58	0.372	1	A
Endosulfan II	ND		ug/kg	1.58	0.526	1	A
Endosulfan sulfate	ND		ug/kg	0.656	0.312	1	A
Methoxychlor	ND		ug/kg	2.95	0.919	1	A
Toxaphene	ND		ug/kg	29.5	8.27	1	A
cis-Chlordane	ND		ug/kg	1.97	0.549	1	A
trans-Chlordane	ND		ug/kg	1.97	0.520	1	A
Chlordane	ND		ug/kg	13.1	5.22	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-22 Date Collected: 10/14/21 12:46

Client ID: GRID X_18-24 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	96		30-150	A
Decachlorobiphenyl	109		30-150	A
2,4,5,6-Tetrachloro-m-xylene	79		30-150	B
Decachlorobiphenyl	109		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-23
Client ID: GRID Y_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 14:36
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 15:40
Analyst: JAW
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:26
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.70	0.332	1	A
Lindane	ND		ug/kg	0.706	0.316	1	A
Alpha-BHC	ND		ug/kg	0.706	0.201	1	A
Beta-BHC	ND		ug/kg	1.70	0.643	1	A
Heptachlor	ND		ug/kg	0.848	0.380	1	A
Aldrin	ND		ug/kg	1.70	0.597	1	A
Heptachlor epoxide	ND		ug/kg	3.18	0.954	1	A
Endrin	ND		ug/kg	0.706	0.290	1	A
Endrin aldehyde	ND		ug/kg	2.12	0.742	1	A
Endrin ketone	ND		ug/kg	1.70	0.437	1	A
Dieldrin	4.27		ug/kg	1.06	0.530	1	A
4,4'-DDE	67.3		ug/kg	1.70	0.392	1	A
4,4'-DDD	1.71		ug/kg	1.70	0.605	1	B
4,4'-DDT	116		ug/kg	3.18	1.36	1	A
Endosulfan I	ND		ug/kg	1.70	0.400	1	A
Endosulfan II	ND		ug/kg	1.70	0.567	1	A
Endosulfan sulfate	ND		ug/kg	0.706	0.336	1	A
Methoxychlor	ND		ug/kg	3.18	0.989	1	A
Toxaphene	ND		ug/kg	31.8	8.90	1	A
cis-Chlordane	ND		ug/kg	2.12	0.591	1	A
trans-Chlordane	ND		ug/kg	2.12	0.560	1	A
Chlordane	ND		ug/kg	14.1	5.62	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-23 Date Collected: 10/14/21 14:36

Client ID: GRID Y_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	80		30-150	A
Decachlorobiphenyl	95		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		30-150	B
Decachlorobiphenyl	72		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-24
Client ID: GRID Y_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 14:36
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 18:29
Analyst: AR
Percent Solids: 98%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.61	0.316	1	A
Lindane	ND		ug/kg	0.672	0.300	1	A
Alpha-BHC	ND		ug/kg	0.672	0.191	1	A
Beta-BHC	ND		ug/kg	1.61	0.611	1	A
Heptachlor	ND		ug/kg	0.806	0.361	1	A
Aldrin	ND		ug/kg	1.61	0.568	1	A
Heptachlor epoxide	ND		ug/kg	3.02	0.907	1	A
Endrin	ND		ug/kg	0.672	0.275	1	A
Endrin aldehyde	ND		ug/kg	2.02	0.705	1	A
Endrin ketone	ND		ug/kg	1.61	0.415	1	A
Dieldrin	ND		ug/kg	1.01	0.504	1	B
4,4'-DDE	1.42	J	ug/kg	1.61	0.373	1	B
4,4'-DDD	ND		ug/kg	1.61	0.575	1	A
4,4'-DDT	3.38		ug/kg	3.02	1.30	1	B
Endosulfan I	ND		ug/kg	1.61	0.381	1	A
Endosulfan II	ND		ug/kg	1.61	0.539	1	A
Endosulfan sulfate	ND		ug/kg	0.672	0.320	1	A
Methoxychlor	ND		ug/kg	3.02	0.941	1	A
Toxaphene	ND		ug/kg	30.2	8.46	1	A
cis-Chlordane	ND		ug/kg	2.02	0.562	1	A
trans-Chlordane	ND		ug/kg	2.02	0.532	1	A
Chlordane	ND		ug/kg	13.4	5.34	1	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-24 Date Collected: 10/14/21 14:36

Client ID: GRID Y_18-24 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	89		30-150	A
Decachlorobiphenyl	101		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		30-150	B
Decachlorobiphenyl	101		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/18/21 12:08
Analyst: SDC

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:25
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 Batch: WG1559426-1						
Delta-BHC	ND		ug/kg	1.58	0.310	A
Lindane	ND		ug/kg	0.660	0.295	A
Alpha-BHC	ND		ug/kg	0.660	0.188	A
Beta-BHC	ND		ug/kg	1.58	0.601	A
Heptachlor	ND		ug/kg	0.793	0.355	A
Aldrin	ND		ug/kg	1.58	0.558	A
Heptachlor epoxide	ND		ug/kg	2.97	0.892	A
Endrin	ND		ug/kg	0.660	0.271	A
Endrin aldehyde	ND		ug/kg	1.98	0.694	A
Endrin ketone	ND		ug/kg	1.58	0.408	A
Dieldrin	ND		ug/kg	0.991	0.495	A
4,4'-DDE	ND		ug/kg	1.58	0.366	A
4,4'-DDD	ND		ug/kg	1.58	0.565	A
4,4'-DDT	ND		ug/kg	2.97	1.27	A
Endosulfan I	ND		ug/kg	1.58	0.374	A
Endosulfan II	ND		ug/kg	1.58	0.530	A
Endosulfan sulfate	ND		ug/kg	0.660	0.314	A
Methoxychlor	ND		ug/kg	2.97	0.925	A
Toxaphene	ND		ug/kg	29.7	8.32	A
cis-Chlordane	ND		ug/kg	1.98	0.552	A
trans-Chlordane	ND		ug/kg	1.98	0.523	A
Chlordane	ND		ug/kg	13.2	5.25	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/18/21 12:08
Analyst: SDC

Extraction Method: EPA 3546
Extraction Date: 10/16/21 04:25
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 Batch: WG1559426-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	84		30-150	A
Decachlorobiphenyl	109		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	76		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8151A
Analytical Date: 10/20/21 18:56
Analyst: AR

Extraction Method: EPA 8151A
Extraction Date: 10/19/21 12:49

Methylation Date: 10/20/21 12:46

Parameter	Result	Qualifier	Units	RL	MDL	Column
Chlorinated Herbicides by GC - Westborough Lab for sample(s): 03,21 Batch: WG1560477-1						
2,4-D	ND		ug/kg	162	10.2	A
2,4,5-T	ND		ug/kg	162	5.01	A
2,4,5-TP (Silvex)	ND		ug/kg	162	4.30	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
DCAA	76		30-150	A
DCAA	70		30-150	B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/26/21 08:50
Analyst: SDC

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/26/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 04,06,08,10,12,14,16,18,20,22,24 Batch: WG1562985-1						
Delta-BHC	ND		ug/kg	1.52	0.297	A
Lindane	ND		ug/kg	0.632	0.282	A
Alpha-BHC	ND		ug/kg	0.632	0.179	A
Beta-BHC	ND		ug/kg	1.52	0.575	A
Heptachlor	ND		ug/kg	0.758	0.340	A
Aldrin	ND		ug/kg	1.52	0.534	A
Heptachlor epoxide	ND		ug/kg	2.84	0.853	A
Endrin	ND		ug/kg	0.632	0.259	A
Endrin aldehyde	ND		ug/kg	1.90	0.663	A
Endrin ketone	ND		ug/kg	1.52	0.390	A
Dieldrin	ND		ug/kg	0.948	0.474	A
4,4'-DDE	ND		ug/kg	1.52	0.351	A
4,4'-DDD	ND		ug/kg	1.52	0.541	A
4,4'-DDT	ND		ug/kg	2.84	1.22	A
Endosulfan I	ND		ug/kg	1.52	0.358	A
Endosulfan II	ND		ug/kg	1.52	0.507	A
Endosulfan sulfate	ND		ug/kg	0.632	0.301	A
Methoxychlor	ND		ug/kg	2.84	0.884	A
Toxaphene	ND		ug/kg	28.4	7.96	A
cis-Chlordane	ND		ug/kg	1.90	0.528	A
trans-Chlordane	ND		ug/kg	1.90	0.500	A
Chlordane	ND		ug/kg	12.6	5.02	A

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/26/21 08:50
Analyst: SDC

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/26/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 04,06,08,10,12,14,16,18,20,22,24 Batch: WG1562985-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		30-150	A
Decachlorobiphenyl	90		30-150	A
2,4,5,6-Tetrachloro-m-xylene	83		30-150	B
Decachlorobiphenyl	106		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156337

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 Batch: WG1559426-2 WG1559426-3									
Delta-BHC	86		81		30-150	6		30	A
Lindane	87		84		30-150	4		30	A
Alpha-BHC	83		82		30-150	1		30	A
Beta-BHC	90		90		30-150	0		30	A
Heptachlor	95		94		30-150	1		30	A
Aldrin	90		89		30-150	1		30	A
Heptachlor epoxide	81		76		30-150	6		30	A
Endrin	91		85		30-150	7		30	A
Endrin aldehyde	70		61		30-150	14		30	A
Endrin ketone	86		84		30-150	2		30	A
Dieldrin	94		89		30-150	5		30	A
4,4'-DDE	88		83		30-150	6		30	A
4,4'-DDD	93		87		30-150	7		30	A
4,4'-DDT	82		80		30-150	2		30	A
Endosulfan I	83		80		30-150	4		30	A
Endosulfan II	87		82		30-150	6		30	A
Endosulfan sulfate	82		80		30-150	2		30	A
Methoxychlor	106		108		30-150	2		30	A
cis-Chlordane	75		73		30-150	3		30	A
trans-Chlordane	106		101		30-150	5		30	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156337

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 Batch: WG1559426-2 WG1559426-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	88		85		30-150	A
Decachlorobiphenyl	108		107		30-150	A
2,4,5,6-Tetrachloro-m-xylene	78		77		30-150	B
Decachlorobiphenyl	77		72		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156337

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Chlorinated Herbicides by GC - Westborough Lab Associated sample(s): 03,21 Batch: WG1560477-2 WG1560477-3									
2,4-D	79		78		30-150	1		30	A
2,4,5-T	74		74		30-150	0		30	A
2,4,5-TP (Silvex)	75		76		30-150	1		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
DCAA	81		86		30-150	A
DCAA	71		74		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156337

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 04,06,08,10,12,14,16,18,20,22,24 Batch: WG1562985-2 WG1562985-3									
Delta-BHC	78		71		30-150	9		30	A
Lindane	87		80		30-150	8		30	A
Alpha-BHC	89		81		30-150	9		30	A
Beta-BHC	85		82		30-150	4		30	A
Heptachlor	90		83		30-150	8		30	A
Aldrin	83		76		30-150	9		30	A
Heptachlor epoxide	85		70		30-150	19		30	A
Endrin	90		81		30-150	11		30	A
Endrin aldehyde	70		65		30-150	7		30	A
Endrin ketone	92		82		30-150	11		30	A
Dieldrin	92		83		30-150	10		30	A
4,4'-DDE	84		78		30-150	7		30	A
4,4'-DDD	89		79		30-150	12		30	A
4,4'-DDT	94		85		30-150	10		30	A
Endosulfan I	84		78		30-150	7		30	A
Endosulfan II	90		87		30-150	3		30	A
Endosulfan sulfate	77		69		30-150	11		30	A
Methoxychlor	87		77		30-150	12		30	A
cis-Chlordane	78		71		30-150	9		30	A
trans-Chlordane	89		79		30-150	12		30	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 04,06,08,10,12,14,16,18,20,22,24 Batch: WG1562985-2 WG1562985-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		64		30-150	A
Decachlorobiphenyl	96		89		30-150	A
2,4,5,6-Tetrachloro-m-xylene	89		80		30-150	B
Decachlorobiphenyl	114		100		30-150	B

METALS

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-01 Date Collected: 10/14/21 08:03

Client ID: GRID E_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	10200		mg/kg	9.88	2.67	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	4.94	0.375	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Arsenic, Total	2.80		mg/kg	0.988	0.205	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Barium, Total	21.2		mg/kg	0.988	0.172	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Beryllium, Total	0.306	J	mg/kg	0.494	0.033	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Cadmium, Total	0.118	J	mg/kg	0.988	0.097	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Calcium, Total	84.6		mg/kg	9.88	3.46	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Chromium, Total	10.3		mg/kg	0.988	0.095	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Cobalt, Total	2.91		mg/kg	1.98	0.164	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Copper, Total	2.65		mg/kg	0.988	0.255	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Iron, Total	10800		mg/kg	4.94	0.892	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Lead, Total	6.22		mg/kg	4.94	0.265	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Magnesium, Total	848		mg/kg	9.88	1.52	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Manganese, Total	54.8		mg/kg	0.988	0.157	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.083	0.054	1	10/18/21 22:02	10/19/21 06:04	EPA 7471B	1,7471B	AC
Nickel, Total	5.16		mg/kg	2.47	0.239	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Potassium, Total	182	J	mg/kg	247	14.2	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Selenium, Total	ND		mg/kg	1.98	0.255	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	0.988	0.280	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Sodium, Total	19.2	J	mg/kg	198	3.11	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Thallium, Total	ND		mg/kg	1.98	0.311	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Vanadium, Total	18.7		mg/kg	0.988	0.200	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD
Zinc, Total	13.7		mg/kg	4.94	0.289	2	10/18/21 21:33	10/19/21 15:27	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-03 Date Collected: 10/14/21 09:07

Client ID: GRID F_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 98%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	2980		mg/kg	8.17	2.21	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	4.08	0.310	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Arsenic, Total	3.43		mg/kg	0.817	0.170	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Barium, Total	4.60		mg/kg	0.817	0.142	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Beryllium, Total	0.065	J	mg/kg	0.408	0.027	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Cadmium, Total	ND		mg/kg	0.817	0.080	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Calcium, Total	107		mg/kg	8.17	2.86	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Chromium, Total	3.35		mg/kg	0.817	0.078	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Cobalt, Total	1.13	J	mg/kg	1.63	0.136	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Copper, Total	3.02		mg/kg	0.817	0.211	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Iron, Total	3320		mg/kg	4.08	0.738	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Lead, Total	4.37		mg/kg	4.08	0.219	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Magnesium, Total	265		mg/kg	8.17	1.26	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Manganese, Total	31.2		mg/kg	0.817	0.130	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.075	0.049	1	10/18/21 22:02	10/19/21 06:08	EPA 7471B	1,7471B	AC
Nickel, Total	1.66	J	mg/kg	2.04	0.198	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Potassium, Total	91.1	J	mg/kg	204	11.8	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Selenium, Total	ND		mg/kg	1.63	0.211	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	0.817	0.231	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Sodium, Total	10.0	J	mg/kg	163	2.57	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Thallium, Total	ND		mg/kg	1.63	0.257	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Vanadium, Total	6.46		mg/kg	0.817	0.166	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD
Zinc, Total	5.08		mg/kg	4.08	0.239	2	10/18/21 21:33	10/19/21 15:31	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-05 Date Collected: 10/14/21 11:45

Client ID: GRID G_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 96%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	4020		mg/kg	8.13	2.19	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	4.06	0.309	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Arsenic, Total	7.06		mg/kg	0.813	0.169	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Barium, Total	6.51		mg/kg	0.813	0.141	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Beryllium, Total	0.098	J	mg/kg	0.406	0.027	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Cadmium, Total	ND		mg/kg	0.813	0.080	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Calcium, Total	138		mg/kg	8.13	2.84	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Chromium, Total	4.36		mg/kg	0.813	0.078	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Cobalt, Total	1.28	J	mg/kg	1.62	0.135	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Copper, Total	5.66		mg/kg	0.813	0.210	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Iron, Total	4460		mg/kg	4.06	0.734	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Lead, Total	5.72		mg/kg	4.06	0.218	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Magnesium, Total	345		mg/kg	8.13	1.25	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Manganese, Total	33.0		mg/kg	0.813	0.129	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.066	0.043	1	10/18/21 22:02	10/19/21 06:28	EPA 7471B	1,7471B	AC
Nickel, Total	2.01	J	mg/kg	2.03	0.197	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Potassium, Total	111	J	mg/kg	203	11.7	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Selenium, Total	ND		mg/kg	1.62	0.210	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	0.813	0.230	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Sodium, Total	10.3	J	mg/kg	162	2.56	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Thallium, Total	ND		mg/kg	1.62	0.256	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Vanadium, Total	7.97		mg/kg	0.813	0.165	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD
Zinc, Total	6.52		mg/kg	4.06	0.238	2	10/18/21 21:33	10/19/21 15:36	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-07 Date Collected: 10/14/21 10:59

Client ID: GRID H_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	4620		mg/kg	8.16	2.20	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	4.08	0.310	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Arsenic, Total	26.3		mg/kg	0.816	0.170	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Barium, Total	8.03		mg/kg	0.816	0.142	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Beryllium, Total	0.106	J	mg/kg	0.408	0.027	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Cadmium, Total	0.090	J	mg/kg	0.816	0.080	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Calcium, Total	250		mg/kg	8.16	2.85	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Chromium, Total	5.02		mg/kg	0.816	0.078	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Cobalt, Total	0.701	J	mg/kg	1.63	0.135	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Copper, Total	11.7		mg/kg	0.816	0.210	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Iron, Total	5130		mg/kg	4.08	0.736	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Lead, Total	7.84		mg/kg	4.08	0.218	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Magnesium, Total	263		mg/kg	8.16	1.26	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Manganese, Total	18.1		mg/kg	0.816	0.130	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.074	0.048	1	10/18/21 22:02	10/19/21 06:31	EPA 7471B	1,7471B	AC
Nickel, Total	1.73	J	mg/kg	2.04	0.197	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Potassium, Total	99.2	J	mg/kg	204	11.7	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Selenium, Total	ND		mg/kg	1.63	0.210	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	0.816	0.231	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Sodium, Total	12.1	J	mg/kg	163	2.57	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Thallium, Total	ND		mg/kg	1.63	0.257	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Vanadium, Total	10.0		mg/kg	0.816	0.166	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD
Zinc, Total	7.60		mg/kg	4.08	0.239	2	10/18/21 21:33	10/19/21 15:40	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-08 Date Collected: 10/14/21 10:59

Client ID: GRID H_18-24 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6460		mg/kg	8.51	2.30	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	4.26	0.323	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Arsenic, Total	9.01		mg/kg	0.851	0.177	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Barium, Total	9.88		mg/kg	0.851	0.148	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Beryllium, Total	0.153	J	mg/kg	0.426	0.028	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Cadmium, Total	0.085	J	mg/kg	0.851	0.083	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Calcium, Total	143		mg/kg	8.51	2.98	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Chromium, Total	7.40		mg/kg	0.851	0.082	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Cobalt, Total	1.57	J	mg/kg	1.70	0.141	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Copper, Total	5.77		mg/kg	0.851	0.220	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Iron, Total	7500		mg/kg	4.26	0.769	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Lead, Total	4.61		mg/kg	4.26	0.228	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Magnesium, Total	522		mg/kg	8.51	1.31	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Manganese, Total	33.1		mg/kg	0.851	0.135	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.068	0.045	1	10/27/21 09:55	10/27/21 13:45	EPA 7471B	1,7471B	AC
Nickel, Total	3.23		mg/kg	2.13	0.206	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Potassium, Total	124	J	mg/kg	213	12.2	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Selenium, Total	0.349	J	mg/kg	1.70	0.220	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	0.851	0.241	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Sodium, Total	20.0	J	mg/kg	170	2.68	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Thallium, Total	ND		mg/kg	1.70	0.268	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Vanadium, Total	12.4		mg/kg	0.851	0.173	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD
Zinc, Total	9.67		mg/kg	4.26	0.249	2	10/27/21 06:20	10/27/21 14:48	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-09 Date Collected: 10/14/21 13:18

Client ID: GRID I_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	8450		mg/kg	8.66	2.34	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	4.33	0.329	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Arsenic, Total	20.4		mg/kg	0.866	0.180	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Barium, Total	16.2		mg/kg	0.866	0.151	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Beryllium, Total	0.225	J	mg/kg	0.433	0.029	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Cadmium, Total	0.138	J	mg/kg	0.866	0.085	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Calcium, Total	299		mg/kg	8.66	3.03	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Chromium, Total	9.20		mg/kg	0.866	0.083	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Cobalt, Total	2.25		mg/kg	1.73	0.144	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Copper, Total	11.2		mg/kg	0.866	0.223	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Iron, Total	9210		mg/kg	4.33	0.782	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Lead, Total	9.58		mg/kg	4.33	0.232	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Magnesium, Total	767		mg/kg	8.66	1.33	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Manganese, Total	47.4		mg/kg	0.866	0.138	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.079	0.051	1	10/18/21 22:02	10/19/21 06:35	EPA 7471B	1,7471B	AC
Nickel, Total	4.41		mg/kg	2.16	0.210	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Potassium, Total	169	J	mg/kg	216	12.5	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Selenium, Total	ND		mg/kg	1.73	0.223	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	0.866	0.245	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Sodium, Total	21.2	J	mg/kg	173	2.73	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Thallium, Total	ND		mg/kg	1.73	0.273	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Vanadium, Total	17.0		mg/kg	0.866	0.176	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD
Zinc, Total	14.3		mg/kg	4.33	0.254	2	10/18/21 21:33	10/19/21 15:45	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-10 Date Collected: 10/14/21 13:18

Client ID: GRID I_18-24 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	5810		mg/kg	8.18	2.21	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Antimony, Total	ND		mg/kg	4.09	0.311	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Arsenic, Total	5.94		mg/kg	0.818	0.170	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Barium, Total	10.1		mg/kg	0.818	0.142	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Beryllium, Total	0.172	J	mg/kg	0.409	0.027	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Cadmium, Total	0.082	J	mg/kg	0.818	0.080	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Calcium, Total	142		mg/kg	8.18	2.86	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Chromium, Total	6.32		mg/kg	0.818	0.079	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Cobalt, Total	2.12		mg/kg	1.64	0.136	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Copper, Total	4.43		mg/kg	0.818	0.211	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Iron, Total	6570		mg/kg	4.09	0.739	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Lead, Total	4.38		mg/kg	4.09	0.219	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Magnesium, Total	654		mg/kg	8.18	1.26	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Manganese, Total	43.9		mg/kg	0.818	0.130	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Mercury, Total	ND		mg/kg	0.068	0.044	1	10/27/21 09:55	10/27/21 13:48	EPA 7471B	1,7471B	AC
Nickel, Total	3.44		mg/kg	2.04	0.198	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Potassium, Total	147	J	mg/kg	204	11.8	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Selenium, Total	0.425	J	mg/kg	1.64	0.211	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Silver, Total	ND		mg/kg	0.818	0.232	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Sodium, Total	25.2	J	mg/kg	164	2.58	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.64	0.258	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Vanadium, Total	10.5		mg/kg	0.818	0.166	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL
Zinc, Total	10.1		mg/kg	4.09	0.240	2	10/27/21 06:20	10/27/21 16:50	EPA 3050B	1,6010D	DL

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-11 Date Collected: 10/14/21 13:50

Client ID: GRID J_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6140		mg/kg	8.61	2.32	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Antimony, Total	1.97	J	mg/kg	4.31	0.327	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Arsenic, Total	28.8		mg/kg	0.861	0.179	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Barium, Total	11.4		mg/kg	0.861	0.150	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Beryllium, Total	0.181	J	mg/kg	0.431	0.028	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Cadmium, Total	0.164	J	mg/kg	0.861	0.084	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Calcium, Total	390		mg/kg	8.61	3.01	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Chromium, Total	27.0		mg/kg	0.861	0.083	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Cobalt, Total	1.20	J	mg/kg	1.72	0.143	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Copper, Total	17.8		mg/kg	0.861	0.222	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Iron, Total	10600		mg/kg	4.31	0.778	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Lead, Total	10.9		mg/kg	4.31	0.231	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Magnesium, Total	409		mg/kg	8.61	1.33	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Manganese, Total	26.7		mg/kg	0.861	0.137	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.070	0.046	1	10/18/21 22:02	10/19/21 06:38	EPA 7471B	1,7471B	AC
Nickel, Total	2.65		mg/kg	2.15	0.208	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Potassium, Total	120	J	mg/kg	215	12.4	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Selenium, Total	0.465	J	mg/kg	1.72	0.222	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	0.861	0.244	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Sodium, Total	18.9	J	mg/kg	172	2.71	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Thallium, Total	ND		mg/kg	1.72	0.271	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Vanadium, Total	17.7		mg/kg	0.861	0.175	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD
Zinc, Total	10.2		mg/kg	4.31	0.252	2	10/18/21 21:33	10/19/21 16:07	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-12 Date Collected: 10/14/21 13:50

Client ID: GRID J_18-24 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 97%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	3120		mg/kg	8.16	2.20	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Antimony, Total	ND		mg/kg	4.08	0.310	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Arsenic, Total	1.49		mg/kg	0.816	0.170	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Barium, Total	4.32		mg/kg	0.816	0.142	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Beryllium, Total	0.073	J	mg/kg	0.408	0.027	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Cadmium, Total	ND		mg/kg	0.816	0.080	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Calcium, Total	49.0		mg/kg	8.16	2.86	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Chromium, Total	3.91		mg/kg	0.816	0.078	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Cobalt, Total	2.01		mg/kg	1.63	0.135	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Copper, Total	2.03		mg/kg	0.816	0.210	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Iron, Total	3260		mg/kg	4.08	0.737	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Lead, Total	1.95	J	mg/kg	4.08	0.219	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Magnesium, Total	271		mg/kg	8.16	1.26	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Manganese, Total	47.6		mg/kg	0.816	0.130	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Mercury, Total	ND		mg/kg	0.065	0.042	1	10/27/21 09:55	10/27/21 13:52	EPA 7471B	1,7471B	AC
Nickel, Total	1.72	J	mg/kg	2.04	0.197	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Potassium, Total	71.1	J	mg/kg	204	11.7	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Selenium, Total	ND		mg/kg	1.63	0.210	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Silver, Total	ND		mg/kg	0.816	0.231	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Sodium, Total	16.3	J	mg/kg	163	2.57	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.63	0.257	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Vanadium, Total	5.51		mg/kg	0.816	0.166	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL
Zinc, Total	4.43		mg/kg	4.08	0.239	2	10/27/21 06:20	10/27/21 16:55	EPA 3050B	1,6010D	DL

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-13 Date Collected: 10/14/21 15:10

Client ID: GRID K_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6610		mg/kg	8.39	2.26	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Antimony, Total	0.394	J	mg/kg	4.19	0.319	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Arsenic, Total	29.3		mg/kg	0.839	0.174	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Barium, Total	11.6		mg/kg	0.839	0.146	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Beryllium, Total	0.151	J	mg/kg	0.419	0.028	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Cadmium, Total	0.117	J	mg/kg	0.839	0.082	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Calcium, Total	371		mg/kg	8.39	2.94	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Chromium, Total	6.87		mg/kg	0.839	0.081	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Cobalt, Total	0.788	J	mg/kg	1.68	0.139	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Copper, Total	20.0		mg/kg	0.839	0.216	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Iron, Total	6040		mg/kg	4.19	0.757	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Lead, Total	9.85		mg/kg	4.19	0.225	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Magnesium, Total	364		mg/kg	8.39	1.29	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Manganese, Total	20.2		mg/kg	0.839	0.133	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.075	0.049	1	10/18/21 22:02	10/19/21 06:41	EPA 7471B	1,7471B	AC
Nickel, Total	2.34		mg/kg	2.10	0.203	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Potassium, Total	133	J	mg/kg	210	12.1	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Selenium, Total	0.285	J	mg/kg	1.68	0.216	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	0.839	0.237	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Sodium, Total	16.1	J	mg/kg	168	2.64	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Thallium, Total	ND		mg/kg	1.68	0.264	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Vanadium, Total	12.6		mg/kg	0.839	0.170	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD
Zinc, Total	9.71		mg/kg	4.19	0.246	2	10/18/21 21:33	10/19/21 16:12	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-14 Date Collected: 10/14/21 15:10

Client ID: GRID K_18-24 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	5780		mg/kg	8.27	2.23	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Antimony, Total	ND		mg/kg	4.14	0.314	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Arsenic, Total	3.49		mg/kg	0.827	0.172	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Barium, Total	10.1		mg/kg	0.827	0.144	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Beryllium, Total	0.141	J	mg/kg	0.414	0.027	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Cadmium, Total	ND		mg/kg	0.827	0.081	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Calcium, Total	94.9		mg/kg	8.27	2.90	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Chromium, Total	6.06		mg/kg	0.827	0.079	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Cobalt, Total	1.40	J	mg/kg	1.65	0.137	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Copper, Total	4.49		mg/kg	0.827	0.213	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Iron, Total	5660		mg/kg	4.14	0.747	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Lead, Total	3.36	J	mg/kg	4.14	0.222	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Magnesium, Total	565		mg/kg	8.27	1.27	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Manganese, Total	26.3		mg/kg	0.827	0.132	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Mercury, Total	ND		mg/kg	0.068	0.044	1	10/27/21 09:55	10/27/21 13:55	EPA 7471B	1,7471B	AC
Nickel, Total	3.21		mg/kg	2.07	0.200	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Potassium, Total	134	J	mg/kg	207	11.9	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Selenium, Total	ND		mg/kg	1.65	0.213	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Silver, Total	ND		mg/kg	0.827	0.234	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Sodium, Total	21.0	J	mg/kg	165	2.61	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.65	0.261	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Vanadium, Total	9.26		mg/kg	0.827	0.168	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL
Zinc, Total	11.2		mg/kg	4.14	0.242	2	10/27/21 06:20	10/27/21 16:59	EPA 3050B	1,6010D	DL

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-15 Date Collected: 10/14/21 08:39

Client ID: GRID U_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	4930		mg/kg	8.54	2.30	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	4.27	0.324	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Arsenic, Total	9.86		mg/kg	0.854	0.178	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Barium, Total	8.66		mg/kg	0.854	0.148	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Beryllium, Total	0.128	J	mg/kg	0.427	0.028	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Cadmium, Total	ND		mg/kg	0.854	0.084	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Calcium, Total	96.0		mg/kg	8.54	2.99	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Chromium, Total	5.60		mg/kg	0.854	0.082	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Cobalt, Total	0.973	J	mg/kg	1.71	0.142	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Copper, Total	4.50		mg/kg	0.854	0.220	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Iron, Total	5140		mg/kg	4.27	0.771	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Lead, Total	4.27		mg/kg	4.27	0.229	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Magnesium, Total	360		mg/kg	8.54	1.31	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Manganese, Total	18.6		mg/kg	0.854	0.136	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.074	0.048	1	10/18/21 22:02	10/19/21 06:45	EPA 7471B	1,7471B	AC
Nickel, Total	2.07	J	mg/kg	2.13	0.207	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Potassium, Total	100	J	mg/kg	213	12.3	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Selenium, Total	ND		mg/kg	1.71	0.220	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	0.854	0.242	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Sodium, Total	11.4	J	mg/kg	171	2.69	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Thallium, Total	ND		mg/kg	1.71	0.269	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Vanadium, Total	9.37		mg/kg	0.854	0.173	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD
Zinc, Total	6.73		mg/kg	4.27	0.250	2	10/18/21 21:33	10/19/21 16:16	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-17 Date Collected: 10/14/21 10:20

Client ID: GRID V_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 77%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	7600		mg/kg	10.3	2.78	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	5.14	0.391	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Arsenic, Total	7.87		mg/kg	1.03	0.214	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Barium, Total	12.3		mg/kg	1.03	0.179	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Beryllium, Total	0.175	J	mg/kg	0.514	0.034	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Cadmium, Total	ND		mg/kg	1.03	0.101	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Calcium, Total	97.6		mg/kg	10.3	3.60	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Chromium, Total	7.63		mg/kg	1.03	0.099	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Cobalt, Total	1.64	J	mg/kg	2.06	0.171	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Copper, Total	6.00		mg/kg	1.03	0.265	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Iron, Total	8260		mg/kg	5.14	0.929	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Lead, Total	6.39		mg/kg	5.14	0.276	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Magnesium, Total	530		mg/kg	10.3	1.58	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Manganese, Total	35.9		mg/kg	1.03	0.164	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.093	0.060	1	10/18/21 22:02	10/19/21 06:48	EPA 7471B	1,7471B	AC
Nickel, Total	3.37		mg/kg	2.57	0.249	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Potassium, Total	145	J	mg/kg	257	14.8	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Selenium, Total	ND		mg/kg	2.06	0.265	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	1.03	0.291	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Sodium, Total	12.5	J	mg/kg	206	3.24	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Thallium, Total	ND		mg/kg	2.06	0.324	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Vanadium, Total	14.1		mg/kg	1.03	0.209	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD
Zinc, Total	11.3		mg/kg	5.14	0.301	2	10/18/21 21:33	10/19/21 16:54	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-19 Date Collected: 10/14/21 12:11

Client ID: GRID W_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	7240		mg/kg	10.2	2.76	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	5.10	0.388	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Arsenic, Total	10.4		mg/kg	1.02	0.212	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Barium, Total	11.0		mg/kg	1.02	0.178	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Beryllium, Total	0.184	J	mg/kg	0.510	0.034	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Cadmium, Total	0.102	J	mg/kg	1.02	0.100	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Calcium, Total	121		mg/kg	10.2	3.57	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Chromium, Total	7.91		mg/kg	1.02	0.098	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Cobalt, Total	1.51	J	mg/kg	2.04	0.169	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Copper, Total	8.11		mg/kg	1.02	0.263	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Iron, Total	8510		mg/kg	5.10	0.922	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Lead, Total	6.63		mg/kg	5.10	0.274	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Magnesium, Total	481		mg/kg	10.2	1.57	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Manganese, Total	35.9		mg/kg	1.02	0.162	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.085	0.056	1	10/18/21 22:02	10/19/21 06:51	EPA 7471B	1,7471B	AC
Nickel, Total	3.17		mg/kg	2.55	0.247	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Potassium, Total	146	J	mg/kg	255	14.7	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Selenium, Total	ND		mg/kg	2.04	0.263	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	1.02	0.289	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Sodium, Total	13.9	J	mg/kg	204	3.22	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Thallium, Total	ND		mg/kg	2.04	0.322	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Vanadium, Total	14.4		mg/kg	1.02	0.207	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD
Zinc, Total	10.4		mg/kg	5.10	0.299	2	10/18/21 21:33	10/19/21 16:58	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-21 Date Collected: 10/14/21 12:46

Client ID: GRID X_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 97%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	5880		mg/kg	7.82	2.11	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	3.91	0.297	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Arsenic, Total	5.23		mg/kg	0.782	0.163	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Barium, Total	11.0		mg/kg	0.782	0.136	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Beryllium, Total	0.148	J	mg/kg	0.391	0.026	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Cadmium, Total	0.078	J	mg/kg	0.782	0.077	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Calcium, Total	70.8		mg/kg	7.82	2.74	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Chromium, Total	6.83		mg/kg	0.782	0.075	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Cobalt, Total	2.27		mg/kg	1.56	0.130	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Copper, Total	5.50		mg/kg	0.782	0.202	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Iron, Total	6640		mg/kg	3.91	0.706	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Lead, Total	5.58		mg/kg	3.91	0.210	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Magnesium, Total	580		mg/kg	7.82	1.20	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Manganese, Total	53.8		mg/kg	0.782	0.124	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.068	0.044	1	10/18/21 22:02	10/19/21 06:54	EPA 7471B	1,7471B	AC
Nickel, Total	3.47		mg/kg	1.95	0.189	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Potassium, Total	133	J	mg/kg	195	11.3	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Selenium, Total	ND		mg/kg	1.56	0.202	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	0.782	0.221	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Sodium, Total	10.8	J	mg/kg	156	2.46	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Thallium, Total	ND		mg/kg	1.56	0.246	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Vanadium, Total	11.3		mg/kg	0.782	0.159	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD
Zinc, Total	11.0		mg/kg	3.91	0.229	2	10/18/21 21:33	10/19/21 17:03	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-23 Date Collected: 10/14/21 14:36

Client ID: GRID Y_0-2 Date Received: 10/14/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6870		mg/kg	8.34	2.25	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Antimony, Total	ND		mg/kg	4.17	0.317	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Arsenic, Total	10.5		mg/kg	0.834	0.174	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Barium, Total	12.0		mg/kg	0.834	0.145	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Beryllium, Total	0.167	J	mg/kg	0.417	0.028	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Cadmium, Total	0.092	J	mg/kg	0.834	0.082	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Calcium, Total	113		mg/kg	8.34	2.92	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Chromium, Total	7.22		mg/kg	0.834	0.080	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Cobalt, Total	2.34		mg/kg	1.67	0.138	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Copper, Total	9.71		mg/kg	0.834	0.215	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Iron, Total	7350		mg/kg	4.17	0.753	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Lead, Total	6.43		mg/kg	4.17	0.224	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Magnesium, Total	648		mg/kg	8.34	1.28	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Manganese, Total	52.0		mg/kg	0.834	0.133	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Mercury, Total	ND		mg/kg	0.076	0.049	1	10/18/21 22:02	10/19/21 06:58	EPA 7471B	1,7471B	AC
Nickel, Total	3.75		mg/kg	2.08	0.202	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Potassium, Total	145	J	mg/kg	208	12.0	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Selenium, Total	ND		mg/kg	1.67	0.215	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Silver, Total	ND		mg/kg	0.834	0.236	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Sodium, Total	12.1	J	mg/kg	167	2.63	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Thallium, Total	ND		mg/kg	1.67	0.263	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Vanadium, Total	12.8		mg/kg	0.834	0.169	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD
Zinc, Total	11.9		mg/kg	4.17	0.244	2	10/18/21 21:33	10/19/21 17:07	EPA 3050B	1,6010D	GD

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 Batch: WG1559274-1										
Aluminum, Total	ND		mg/kg	4.00	1.08	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Antimony, Total	ND		mg/kg	2.00	0.152	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Arsenic, Total	ND		mg/kg	0.400	0.083	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Barium, Total	ND		mg/kg	0.400	0.070	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Beryllium, Total	ND		mg/kg	0.200	0.013	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Cadmium, Total	ND		mg/kg	0.400	0.039	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Calcium, Total	ND		mg/kg	4.00	1.40	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Chromium, Total	ND		mg/kg	0.400	0.038	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Cobalt, Total	ND		mg/kg	0.800	0.066	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Copper, Total	ND		mg/kg	0.400	0.103	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Iron, Total	0.376	J	mg/kg	2.00	0.361	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Lead, Total	ND		mg/kg	2.00	0.107	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Magnesium, Total	ND		mg/kg	4.00	0.616	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Manganese, Total	ND		mg/kg	0.400	0.064	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Nickel, Total	ND		mg/kg	1.00	0.097	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Potassium, Total	ND		mg/kg	100	5.76	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Selenium, Total	ND		mg/kg	0.800	0.103	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Silver, Total	ND		mg/kg	0.400	0.113	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Sodium, Total	1.57	J	mg/kg	80.0	1.26	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Thallium, Total	ND		mg/kg	0.800	0.126	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Vanadium, Total	ND		mg/kg	0.400	0.081	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD
Zinc, Total	ND		mg/kg	2.00	0.117	1	10/18/21 21:33	10/19/21 14:10	1,6010D	GD

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 Batch: WG1559276-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	10/18/21 22:02	10/19/21 05:41	1,7471B	AC

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 08,10,12,14 Batch: WG1563264-1										
Aluminum, Total	ND		mg/kg	4.00	1.08	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Antimony, Total	ND		mg/kg	2.00	0.152	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Arsenic, Total	ND		mg/kg	0.400	0.083	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Barium, Total	ND		mg/kg	0.400	0.070	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Beryllium, Total	ND		mg/kg	0.200	0.013	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Cadmium, Total	ND		mg/kg	0.400	0.039	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Calcium, Total	ND		mg/kg	4.00	1.40	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Chromium, Total	ND		mg/kg	0.400	0.038	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Cobalt, Total	ND		mg/kg	0.800	0.066	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Copper, Total	ND		mg/kg	0.400	0.103	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Iron, Total	2.36		mg/kg	2.00	0.361	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Lead, Total	ND		mg/kg	2.00	0.107	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Magnesium, Total	ND		mg/kg	4.00	0.616	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Manganese, Total	0.072	J	mg/kg	0.400	0.064	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Nickel, Total	ND		mg/kg	1.00	0.097	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Potassium, Total	ND		mg/kg	100	5.76	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Selenium, Total	ND		mg/kg	0.800	0.103	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Silver, Total	ND		mg/kg	0.400	0.113	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Sodium, Total	5.52	J	mg/kg	80.0	1.26	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Thallium, Total	ND		mg/kg	0.800	0.126	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Vanadium, Total	ND		mg/kg	0.400	0.081	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Zinc, Total	ND		mg/kg	2.00	0.117	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL

Prep Information

Digestion Method: EPA 3050B

Project Name: HKV2101 **Lab Number:** L2156337

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 08,10,12,14 Batch: WG1563265-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	10/27/21 09:55	10/27/21 13:19	1,7471B	AC

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156337

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 Batch: WG1559274-2 SRM Lot Number: D109-540								
Aluminum, Total	80		-		50-150	-		
Antimony, Total	126		-		19-250	-		
Arsenic, Total	107		-		70-130	-		
Barium, Total	108		-		75-125	-		
Beryllium, Total	103		-		75-125	-		
Cadmium, Total	105		-		75-125	-		
Calcium, Total	96		-		73-128	-		
Chromium, Total	102		-		70-130	-		
Cobalt, Total	106		-		75-125	-		
Copper, Total	102		-		75-125	-		
Iron, Total	104		-		35-165	-		
Lead, Total	102		-		72-128	-		
Magnesium, Total	85		-		62-138	-		
Manganese, Total	96		-		74-126	-		
Nickel, Total	102		-		70-130	-		
Potassium, Total	93		-		59-141	-		
Selenium, Total	102		-		68-132	-		
Silver, Total	101		-		68-131	-		
Sodium, Total	104		-		35-165	-		
Thallium, Total	105		-		68-131	-		
Vanadium, Total	109		-		59-141	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156337

Report Date: 10/29/21

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 Batch: WG1559274-2 SRM Lot Number: D109-540					
Zinc, Total	104	-	70-130	-	
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 Batch: WG1559276-2 SRM Lot Number: D109-540					
Mercury, Total	98	-	60-140	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156337

Report Date: 10/29/21

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08,10,12,14 Batch: WG1563264-2 SRM Lot Number: D109-540					
Aluminum, Total	65	-	50-150	-	
Antimony, Total	140	-	19-250	-	
Arsenic, Total	96	-	70-130	-	
Barium, Total	93	-	75-125	-	
Beryllium, Total	90	-	75-125	-	
Cadmium, Total	94	-	75-125	-	
Calcium, Total	91	-	73-128	-	
Chromium, Total	99	-	70-130	-	
Cobalt, Total	91	-	75-125	-	
Copper, Total	100	-	75-125	-	
Iron, Total	87	-	35-165	-	
Lead, Total	90	-	72-128	-	
Magnesium, Total	82	-	62-138	-	
Manganese, Total	88	-	74-126	-	
Nickel, Total	91	-	70-130	-	
Potassium, Total	87	-	59-141	-	
Selenium, Total	95	-	68-132	-	
Silver, Total	98	-	68-131	-	
Sodium, Total	94	-	35-165	-	
Thallium, Total	96	-	68-131	-	
Vanadium, Total	96	-	59-141	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156337

Report Date: 10/29/21

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08,10,12,14 Batch: WG1563264-2 SRM Lot Number: D109-540					
Zinc, Total	92	-	70-130	-	
Total Metals - Mansfield Lab Associated sample(s): 08,10,12,14 Batch: WG1563265-2 SRM Lot Number: D109-540					
Mercury, Total	99	-	60-140	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 QC Batch ID: WG1559274-3 QC Sample: L2153641-08 Client ID: MS Sample												
Aluminum, Total	12100	181	16200	**2260**	Q	-	-		75-125	-		20
Antimony, Total	ND	45.3	31.3	**69**	Q	-	-		75-125	-		20
Arsenic, Total	3.08	10.9	12.8	89		-	-		75-125	-		20
Barium, Total	14.4	181	179	91		-	-		75-125	-		20
Beryllium, Total	0.142J	4.53	3.96	87		-	-		75-125	-		20
Cadmium, Total	0.102J	4.81	4.06	84		-	-		75-125	-		20
Calcium, Total	192	907	873	75		-	-		75-125	-		20
Chromium, Total	13.6	18.1	30.6	94		-	-		75-125	-		20
Cobalt, Total	0.992	45.3	37.1	80		-	-		75-125	-		20
Copper, Total	4.96	22.7	26.1	93		-	-		75-125	-		20
Iron, Total	9460	90.7	9900	**485**	Q	-	-		75-125	-		20
Lead, Total	9.02	48.1	44.2	**73**	Q	-	-		75-125	-		20
Magnesium, Total	148	907	834	76		-	-		75-125	-		20
Manganese, Total	13.3	45.3	48.1	77		-	-		75-125	-		20
Nickel, Total	3.53	45.3	39.4	79		-	-		75-125	-		20
Potassium, Total	163	907	1000	92		-	-		75-125	-		20
Selenium, Total	ND	10.9	8.59	79		-	-		75-125	-		20
Silver, Total	ND	27.2	24.7	91		-	-		75-125	-		20
Sodium, Total	22.7J	907	843	93		-	-		75-125	-		20
Thallium, Total	ND	10.9	8.82	81		-	-		75-125	-		20
Vanadium, Total	20.5	45.3	62.2	92		-	-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 QC Batch ID: WG1559274-3 QC Sample: L2153641-08 Client ID: MS Sample										
Zinc, Total	6.66	45.3	43.4	81		-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 QC Batch ID: WG1559276-3 QC Sample: L2153970-10 Client ID: MS Sample										
Mercury, Total	0.083	0.144	0.192	**76**	Q	-	-	80-120	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08,10,12,14 QC Batch ID: WG1563264-3 QC Sample: L2157115-01 Client ID: MS Sample										
Aluminum, Total	2240	184	3000	**413**	Q	-	-	75-125	-	20
Antimony, Total	ND	46	37.2	81		-	-	75-125	-	20
Arsenic, Total	0.736J	11	10.3	93		-	-	75-125	-	20
Barium, Total	4.20	184	188	100		-	-	75-125	-	20
Beryllium, Total	ND	4.6	4.33	94		-	-	75-125	-	20
Cadmium, Total	ND	4.88	4.79	98		-	-	75-125	-	20
Calcium, Total	163	920	1080	100		-	-	75-125	-	20
Chromium, Total	4.26	18.4	23.8	106		-	-	75-125	-	20
Cobalt, Total	0.382J	46	41.7	91		-	-	75-125	-	20
Copper, Total	1.83	23	25.9	105		-	-	75-125	-	20
Iron, Total	2450B	92	3000	**598**	Q	-	-	75-125	-	20
Lead, Total	5.15	48.8	52.2	96		-	-	75-125	-	20
Magnesium, Total	84.1	920	1010	101		-	-	75-125	-	20
Manganese, Total	8.34	46	53.0	97		-	-	75-125	-	20
Nickel, Total	0.718J	46	42.9	93		-	-	75-125	-	20
Potassium, Total	96.6J	920	965	105		-	-	75-125	-	20
Selenium, Total	ND	11	9.30	84		-	-	75-125	-	20
Silver, Total	ND	27.6	31.7	115		-	-	75-125	-	20
Sodium, Total	13.4J	920	947	103		-	-	75-125	-	20
Thallium, Total	ND	11	10.2	92		-	-	75-125	-	20
Vanadium, Total	6.56	46	55.0	105		-	-	75-125	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08,10,12,14 QC Batch ID: WG1563264-3 QC Sample: L2157115-01 Client ID: MS Sample									
Zinc, Total	5.07	46	50.9	100	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 08,10,12,14 QC Batch ID: WG1563265-3 QC Sample: L2157115-01 Client ID: MS Sample									
Mercury, Total	ND	0.152	0.152	100	-	-	80-120	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156337

Report Date: 10/29/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 QC Batch ID: WG1559274-4 QC Sample: L2153641-08 Client ID: DUP Sample						
Lead, Total	9.02	5.24	mg/kg	**53**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 QC Batch ID: WG1559276-4 QC Sample: L2153970-10 Client ID: DUP Sample						
Mercury, Total	0.083	0.076	mg/kg	8		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

Parameter	Native Sample	Duplicate Sample	Units	RPD		RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08,10,12,14 QC Batch ID: WG1563264-4 QC Sample: L2157115-01 Client ID: DUP Sample						
Aluminum, Total	2240	2430	mg/kg	8		20
Antimony, Total	ND	ND	mg/kg	NC		20
Arsenic, Total	0.736J	1.11	mg/kg	NC		20
Barium, Total	4.20	5.89	mg/kg	**33**	Q	20
Beryllium, Total	ND	ND	mg/kg	NC		20
Cadmium, Total	ND	ND	mg/kg	NC		20
Calcium, Total	163	189	mg/kg	15		20
Chromium, Total	4.26	5.92	mg/kg	**33**	Q	20
Cobalt, Total	0.382J	0.394J	mg/kg	NC		20
Copper, Total	1.83	2.25	mg/kg	**21**	Q	20
Iron, Total	2450B	3370	mg/kg	**32**	Q	20
Lead, Total	5.15	6.17	mg/kg	18		20
Magnesium, Total	84.1	113	mg/kg	**29**	Q	20
Manganese, Total	8.34	9.44	mg/kg	12		20
Nickel, Total	0.718J	0.891J	mg/kg	NC		20
Potassium, Total	96.6J	90.5J	mg/kg	NC		20
Selenium, Total	ND	ND	mg/kg	NC		20
Silver, Total	ND	ND	mg/kg	NC		20
Sodium, Total	13.4J	14.1J	mg/kg	NC		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08,10,12,14 QC Batch ID: WG1563264-4 QC Sample: L2157115-01 Client ID: DUP Sample					
Thallium, Total	ND	ND	mg/kg	NC	20
Vanadium, Total	6.56	7.78	mg/kg	17	20
Zinc, Total	5.07	6.20	mg/kg	20	20
Total Metals - Mansfield Lab Associated sample(s): 08,10,12,14 QC Batch ID: WG1563265-4 QC Sample: L2157115-01 Client ID: DUP Sample					
Mercury, Total	ND	ND	mg/kg	NC	20

Project Name: HKV2101
Project Number: Not Specified

Lab Serial Dilution Analysis
Batch Quality Control

Lab Number: L2156337
Report Date: 10/29/21

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 08,10,12,14 QC Batch ID: WG1563264-6 QC Sample: L2157115-01 Client ID: DUP Sample						
Aluminum, Total	2240	2330	mg/kg	4		20
Iron, Total	2450B	2570	mg/kg	5		20

INORGANICS
&
MISCELLANEOUS

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-01
Client ID: GRID E_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 08:03
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.0		%	0.100	NA	1	-	10/15/21 11:26	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-03
Client ID: GRID F_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 09:07
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	97.6		%	0.100	NA	1	-	10/15/21 11:26	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-04
Client ID: GRID F_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 09:07
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.1		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-05
Client ID: GRID G_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 11:45
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	95.8		%	0.100	NA	1	-	10/15/21 11:26	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-06
Client ID: GRID G_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 11:45
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.4		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-07
Client ID: GRID H_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 10:59
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.4		%	0.100	NA	1	-	10/15/21 11:26	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-08
Client ID: GRID H_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 10:59
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.5		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-09
Client ID: GRID I_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 13:18
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.1		%	0.100	NA	1	-	10/15/21 11:26	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-10
Client ID: GRID I_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 13:18
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.3		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-11
Client ID: GRID J_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 13:50
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.8		%	0.100	NA	1	-	10/15/21 11:26	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-12
Client ID: GRID J_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 13:50
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	96.5		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-13
Client ID: GRID K_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 15:10
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.5		%	0.100	NA	1	-	10/15/21 11:26	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-14
Client ID: GRID K_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 15:10
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.4		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-15
Client ID: GRID U_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 08:39
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.8		%	0.100	NA	1	-	10/15/21 11:26	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-16
Client ID: GRID U_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 08:39
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.1		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-17
Client ID: GRID V_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 10:20
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	76.5		%	0.100	NA	1	-	10/15/21 11:26	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-18
Client ID: GRID V_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 10:20
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.9		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-19
Client ID: GRID W_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 12:11
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.0		%	0.100	NA	1	-	10/15/21 11:26	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-20
Client ID: GRID W_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 12:11
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	95.0		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-21
Client ID: GRID X_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 12:46
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	97.1		%	0.100	NA	1	-	10/15/21 11:26	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-22
Client ID: GRID X_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 12:46
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	98.1		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-23
Client ID: GRID Y_0-2
Sample Location: Not Specified

Date Collected: 10/14/21 14:36
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.0		%	0.100	NA	1	-	10/15/21 11:26	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156337-24
Client ID: GRID Y_18-24
Sample Location: Not Specified

Date Collected: 10/14/21 14:36
Date Received: 10/14/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	97.6		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Lab Duplicate Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13,15,17,19,21,23 QC Batch ID: WG1559076-1 QC Sample: L2156337-01 Client ID: GRID E_0-2						
Solids, Total	78.0	77.8	%	0		20
General Chemistry - Westborough Lab Associated sample(s): 04,06,08,10,12,14,16,18,20,22,24 QC Batch ID: WG1563217-1 QC Sample: L2156337-04 Client ID: GRID F_18-24						
Solids, Total	81.1	80.7	%	0		20

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2156337-01A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),AL-TI(180),CU-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),PB-TI(180),V-TI(180),CO-TI(180),FE-TI(180),MN-TI(180),HG-T(28),MG-TI(180),K-TI(180),CD-TI(180),CA-TI(180),NA-TI(180)
L2156337-01B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)
L2156337-02A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		HOLD-METAL(180)
L2156337-02B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		HOLD-WETCHEM(),HOLD-8081(14)
L2156337-03A	Vial MeOH preserved	A	NA		5.3	Y	Absent		NYTCL-8260HLW(14)
L2156337-03B	Vial water preserved	A	NA		5.3	Y	Absent	15-OCT-21 08:56	NYTCL-8260HLW(14)
L2156337-03C	Vial water preserved	A	NA		5.3	Y	Absent	15-OCT-21 08:56	NYTCL-8260HLW(14)
L2156337-03D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),AL-TI(180),CU-TI(180),SE-TI(180),PB-TI(180),SB-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CD-TI(180),CA-TI(180),K-TI(180),NA-TI(180)
L2156337-03E	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),AL-TI(180),CU-TI(180),SE-TI(180),PB-TI(180),SB-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CD-TI(180),CA-TI(180),K-TI(180),NA-TI(180)
L2156337-03F	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2156337-03G	Glass 120ml/4oz unpreserved	A	NA		5.3	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2156337-03H	Plastic 2oz unpreserved for TS	A	NA		5.3	Y	Absent		TS(7)
L2156337-03J	Glass 500ml/16oz unpreserved	A	NA		5.3	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2156337-04A	Vial MeOH preserved	A	NA		5.3	Y	Absent		HOLD-8260HLW(14)
L2156337-04B	Vial water preserved	A	NA		5.3	Y	Absent	15-OCT-21 08:56	HOLD-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2156337-04C	Vial water preserved	A	NA		5.3	Y	Absent	15-OCT-21 08:56	HOLD-8260HLW(14)
L2156337-04D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		HOLD-METAL(180)
L2156337-04E	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		HOLD-8151(14),HOLD-8270(14),HOLD-8082(14)
L2156337-04F	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		HOLD-8151(14),TS(7),NYTCL-8081(14),HOLD-8270(14),HOLD-8082(14)
L2156337-04G	Glass 120ml/4oz unpreserved	A	NA		5.3	Y	Absent		HOLD-8151(14),HOLD-8270(14),HOLD-8082(14)
L2156337-04H	Plastic 2oz unpreserved for TS	A	NA		5.3	Y	Absent		-
L2156337-04J	Glass 500ml/16oz unpreserved	A	NA		5.3	Y	Absent		HOLD-8151(14),HOLD-8270(14),HOLD-8082(14)
L2156337-05A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),AL-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),ZN-TI(180),SE-TI(180),SB-TI(180),CO-TI(180),V-TI(180),MG-TI(180),MN-TI(180),FE-TI(180),HG-T(28),NA-TI(180),CD-TI(180),K-TI(180),CA-TI(180)
L2156337-05B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)
L2156337-06A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		HOLD-METAL(180)
L2156337-06B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)
L2156337-07A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),NI-TI(180),TL-TI(180),CR-TI(180),PB-TI(180),ZN-TI(180),CU-TI(180),SE-TI(180),SB-TI(180),V-TI(180),CO-TI(180),FE-TI(180),MN-TI(180),MG-TI(180),HG-T(28),NA-TI(180),CA-TI(180),K-TI(180),CD-TI(180)
L2156337-07B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)
L2156337-08A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),AL-TI(180),CU-TI(180),SE-TI(180),PB-TI(180),SB-TI(180),ZN-TI(180),V-TI(180),CO-TI(180),FE-TI(180),MN-TI(180),HG-T(28),HOLD-METAL(180),MG-TI(180),CA-TI(180),NA-TI(180),CD-TI(180),K-TI(180)
L2156337-08B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)
L2156337-09A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),TL-TI(180),AL-TI(180),NI-TI(180),CR-TI(180),ZN-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),CU-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MG-TI(180),MN-TI(180),HG-T(28),K-TI(180),NA-TI(180),CD-TI(180),CA-TI(180)
L2156337-09B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)

*Values in parentheses indicate holding time in days

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2156337-10A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),AL-TI(180),TL-TI(180),NI-TI(180),CR-TI(180),CU-TI(180),PB-TI(180),SE-TI(180),SB-TI(180),ZN-TI(180),V-TI(180),CO-TI(180),MG-TI(180),HG-T(28),FE-TI(180),HOLD-METAL(180),MN-TI(180),NA-TI(180),CD-TI(180),CA-TI(180),K-TI(180)
L2156337-10B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)
L2156337-11A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),TL-TI(180),NI-TI(180),AL-TI(180),CU-TI(180),PB-TI(180),ZN-TI(180),SB-TI(180),SE-TI(180),V-TI(180),CO-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),NA-TI(180),CD-TI(180),CA-TI(180),K-TI(180)
L2156337-11B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)
L2156337-12A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),TL-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),ZN-TI(180),SB-TI(180),CU-TI(180),PB-TI(180),SE-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),HOLD-METAL(180),MN-TI(180),MG-TI(180),K-TI(180),CD-TI(180),NA-TI(180),CA-TI(180)
L2156337-12B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)
L2156337-13A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),NI-TI(180),AL-TI(180),TL-TI(180),CR-TI(180),SB-TI(180),ZN-TI(180),CU-TI(180),PB-TI(180),SE-TI(180),V-TI(180),CO-TI(180),FE-TI(180),MG-TI(180),HG-T(28),MN-TI(180),K-TI(180),CD-TI(180),NA-TI(180),CA-TI(180)
L2156337-13B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)
L2156337-14A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),NI-TI(180),AL-TI(180),CR-TI(180),TL-TI(180),SE-TI(180),CU-TI(180),SB-TI(180),PB-TI(180),ZN-TI(180),V-TI(180),CO-TI(180),HG-T(28),MN-TI(180),MG-TI(180),HOLD-METAL(180),FE-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L2156337-14B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)
L2156337-15A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),AL-TI(180),NI-TI(180),TL-TI(180),ZN-TI(180),SE-TI(180),SB-TI(180),PB-TI(180),CU-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MN-TI(180),MG-TI(180),HG-T(28),K-TI(180),CD-TI(180),CA-TI(180),NA-TI(180)
L2156337-15B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)

*Values in parentheses indicate holding time in days

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2156337-16A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		HOLD-METAL(180)
L2156337-16B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)
L2156337-17A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),NI-TI(180),AL-TI(180),CR-TI(180),TL-TI(180),PB-TI(180),CU-TI(180),SE-TI(180),SB-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MN-TI(180),MG-TI(180),CD-TI(180),NA-TI(180),CA-TI(180),K-TI(180)
L2156337-17B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)
L2156337-18A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		HOLD-METAL(180)
L2156337-18B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)
L2156337-19A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),AL-TI(180),PB-TI(180),ZN-TI(180),CU-TI(180),SB-TI(180),SE-TI(180),V-TI(180),CO-TI(180),MN-TI(180),HG-T(28),MG-TI(180),FE-TI(180),K-TI(180),NA-TI(180),CA-TI(180),CD-TI(180)
L2156337-19B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)
L2156337-20A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		HOLD-METAL(180)
L2156337-20B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)
L2156337-21A	Vial MeOH preserved	A	NA		5.3	Y	Absent		NYTCL-8260HLW(14)
L2156337-21B	Vial water preserved	A	NA		5.3	Y	Absent	15-OCT-21 08:56	NYTCL-8260HLW(14)
L2156337-21C	Vial water preserved	A	NA		5.3	Y	Absent	15-OCT-21 08:56	NYTCL-8260HLW(14)
L2156337-21D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),ZN-TI(180),SB-TI(180),PB-TI(180),CU-TI(180),SE-TI(180),V-TI(180),CO-TI(180),FE-TI(180),MG-TI(180),MN-TI(180),HG-T(28),CD-TI(180),NA-TI(180),CA-TI(180),K-TI(180)
L2156337-21E	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2156337-21F	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2156337-21G	Glass 120ml/4oz unpreserved	A	NA		5.3	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2156337-21H	Plastic 2oz unpreserved for TS	A	NA		5.3	Y	Absent		TS(7)
L2156337-21J	Glass 500ml/16oz unpreserved	A	NA		5.3	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2156337-22A	Vial MeOH preserved	A	NA		5.3	Y	Absent		HOLD-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156337
Report Date: 10/29/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2156337-22B	Vial water preserved	A	NA		5.3	Y	Absent	15-OCT-21 08:56	HOLD-8260HLW(14)
L2156337-22C	Vial water preserved	A	NA		5.3	Y	Absent	15-OCT-21 08:56	HOLD-8260HLW(14)
L2156337-22D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		HOLD-METAL(180)
L2156337-22E	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		HOLD-8151(14),HOLD-8270(14),HOLD-8082(14)
L2156337-22F	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		HOLD-8151(14),TS(7),NYTCL-8081(14),HOLD-8270(14),HOLD-8082(14)
L2156337-22G	Glass 120ml/4oz unpreserved	A	NA		5.3	Y	Absent		HOLD-8151(14),HOLD-8270(14),HOLD-8082(14)
L2156337-22H	Plastic 2oz unpreserved for TS	A	NA		5.3	Y	Absent		-
L2156337-22J	Glass 500ml/16oz unpreserved	A	NA		5.3	Y	Absent		HOLD-8151(14),HOLD-8270(14),HOLD-8082(14)
L2156337-23A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),AL-TI(180),NI-TI(180),TL-TI(180),SE-TI(180),ZN-TI(180),CU-TI(180),SB-TI(180),PB-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MN-TI(180),HG-T(28),MG-TI(180),CA-TI(180),CD-TI(180),NA-TI(180),K-TI(180)
L2156337-23B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)
L2156337-24A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		HOLD-METAL(180)
L2156337-24B	Glass 60mL/2oz unpreserved	A	NA		5.3	Y	Absent		TS(7),NYTCL-8081(14)

*Values in parentheses indicate holding time in days

Project Name:	HKV2101	**Lab Number:**	L2156337
Project Number:	Not Specified	**Report Date:**	10/29/21

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HKV2101	**Lab Number:**	L2156337
Project Number:	Not Specified	**Report Date:**	10/29/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HKV2101	**Lab Number:**	L2156337
Project Number:	Not Specified	**Report Date:**	10/29/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers

Project Name:	HKV2101	**Lab Number:**	L2156337
Project Number:	Not Specified	**Report Date:**	10/29/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 3

Date Rec'd in Lab: 10/15/21

ALPHA Job #: L2156337

Client Information
Client: PWGC
Address: 630 Johnson Ave
Bohemia NY 11716
Phone: 631 589 6353
Fax:
Email: ThomasM@pwgcorp.com

Project Information
Project Name: HKV 2101
Project Location:
Project #
(Use Project name as Project #) ☐
Project Manager: Thomas Melia
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☒ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☒ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
hold Deeper Samples; To be run based upon Shallow results

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Pesticides	TAL metals	VOCs	SVOCs	Herbicides	PCB's			Sample Specific Comments
L2156337 -01	Grid E_0-2	10/14/21	08:03	S	JL	X	X							
-02	Grid E_18-24		08:03			X	X							hold
-03	Grid F_0-2		09:07			X	X	X	X	X	X			
-04	Grid F_18-24		09:07			X	X	X	X	X	X			hold
-05	Grid G_0-2		11:45			X	X							
-06	Grid G_18-24		11:45			X	X							hold
-07	Grid H_0-2		10:59			X	X							
-08	Grid H_18-24		10:59			X	X							hold
-09	Grid I_0-2		13:18			X	X							
-10	Grid I_18-24		13:18			X	X							hold

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type														
Preservative														

Relinquished By:	Date/Time	Received By:	Date/Time
PWGC	10-14-21 1600		
	10-14-21 2130	AAL	10/14/21 2130
AAL		AAL	10/15/21 0009
AAL	10/15/21 0245		10/15/21 0845

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 3

Date Rec'd in Lab: 10/15/21

ALPHA Job #: L2156337

Client Information
Client: PWGC
Address: 630 Johnson Ave
Bohemia, NY 11716
Phone:
Fax:
Email: Thomas.M@pwgroup.com

Project Information
Project Name: HLCV2101
Project Location:
Project #
(Use Project name as Project #) ☐
Project Manager: Thomas Mellin
ALPHAQuote #:

Turn-Around Time
Standard ☑ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☑ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☑ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
Hold deeper samples, run based on shallow results.

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Pesticides	TAL metals	VOC	SVOC	Herbicides	PCB's			Sample Specific Comments	Total Bottle
56337 -11	Grid J_0-2	10/14/21	1350	S	WH	X	X								
-12	Grid J_18-24		1350											HOLD	
-13	Grid K_0-2		1510												
-14	Grid K_18-24		1510											HOLD	
-15	Grid U_0-2		839												
-16	Grid U_18-24		839											HOLD	
-17	Grid V_0-2		1020												
-18	Grid V_18-24		1020											HOLD	
-19	Grid W_0-2		1211												
-20	Grid W_18-24		1211											HOLD	

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
Will Hunter	10-14-21/16:00	MOR	10/14/21 16:00
MOR	10/14/21 2100	[illegible] AAL	10/14/21 23:30
[illegible] AAL	[illegible] 0245	[illegible] AAL	10/15/21 0005
[illegible]	[illegible]	[illegible]	10/15/21 02:45

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 3 of 3

Date Rec'd in Lab: 10/15/21

ALPHA Job #: L2157337

Client Information

Client: PW GC
Address: 630 Johnson Ave
Phone: 631 589 6353
Fax:
Email: Thomas.M@pwgrosses.com

Project Information

Project Name: HKV2101
Project Location:
Project #
(Use Project name as Project #) ☐
Project Manager: Thomas Mella
ALPHAQuote #:

Turn-Around Time

Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables

☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement

☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☒ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information

☒ Same as Client Info
PO #

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
hold deeper samples; To be run based on shallow result

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Pesticides	TAL metals	VOCs	SVOCs	Herbicides	PCB's	Total Bottle	Sample Specific Comments
L2157337 -21	Grid X_0-2	10/14/21	12:46	S	JL	X	X	X	X	X	X		
-22	Grid X_18-24	↓	12:46	↓	↓	X	X	X	X	X	X		hold
-23	Grid Y_0-2	↓	14:36	↓	↓	X	X						
-24	Grid Y_18-24	↓	14:36	↓	↓	X	X						hold
					JL								

Container Type
Preservative

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
PWGC	10/14/21 16:00		16:00
	10/15/21 2105	AAL	10/15/21 2105
AAL			
	10/15/21 0245		10/15/21 02:45

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L2156730
Client:	P. W. Grosser 630 Johnson Avenue Suite 7 Bohemia, NY 11716
ATTN:	Thomas Melia
Phone:	(631) 589-6353
Project Name:	HKV2101
Project Number:	Not Specified
Report Date:	10/29/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2156730-01	GRID AA_0-2	SOIL	Not Specified	10/15/21 14:45	10/15/21
L2156730-02	GRID AA_18-24	SOIL	Not Specified	10/15/21 14:45	10/15/21
L2156730-03	GRID AB_0-2	SOIL	Not Specified	10/15/21 12:06	10/15/21
L2156730-04	GRID AB_18-24	SOIL	Not Specified	10/15/21 12:06	10/15/21
L2156730-05	GRID AC_0-2	SOIL	Not Specified	10/15/21 11:24	10/15/21
L2156730-06	GRID AC_18-24	SOIL	Not Specified	10/15/21 11:24	10/15/21
L2156730-07	GRID AD_0-2	SOIL	Not Specified	10/15/21 09:05	10/15/21
L2156730-08	GRID AD_18-24	SOIL	Not Specified	10/15/21 09:05	10/15/21
L2156730-09	GRID L_0-2	SOIL	Not Specified	10/15/21 14:01	10/15/21
L2156730-10	GRID L_18-24	SOIL	Not Specified	10/15/21 14:01	10/15/21
L2156730-11	GRID M_0-2	SOIL	Not Specified	10/15/21 13:30	10/15/21
L2156730-12	GRID M_18-24	SOIL	Not Specified	10/15/21 13:30	10/15/21
L2156730-13	GRID N_0-2	SOIL	Not Specified	10/15/21 10:20	10/15/21
L2156730-14	GRID N_18-24	SOIL	Not Specified	10/15/21 10:20	10/15/21
L2156730-15	GRID O_0-2	SOIL	Not Specified	10/15/21 09:50	10/15/21
L2156730-16	GRID O_18-24	SOIL	Not Specified	10/15/21 09:50	10/15/21
L2156730-17	GRID Z_0-2	SOIL	Not Specified	10/15/21 15:27	10/15/21
L2156730-18	GRID Z_18-24	SOIL	Not Specified	10/15/21 15:27	10/15/21

Project Name:	HKV2101	**Lab Number:**	L2156730
Project Number:	Not Specified	**Report Date:**	10/29/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: HKV2101 **Lab Number:** L2156730
Project Number: Not Specified **Report Date:** 10/29/21

Case Narrative (continued)

Report Submission
October 29, 2021: This final report includes the results of the Pesticides analysis performed on L2156730-02, -04, -06, -08, -10, -12, -14, -16, and -18; the TAL Metals analysis performed on L2156730-06, -08, -10, -12, -14, and -16; and the Semivolatile Organics analysis performed on L2156730-09.
October 22, 2021: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt
L2156730-09: Sample containers for Volatile Organics, Semivolatile Organics, PCBs, Herbicides were received, but were not listed on the chain of custody. At the client's request, these analyses were performed.

Semivolatile Organics
The WG1559564-2/-3 LCS/LCSD recoveries, associated with L2156730-07, are below the acceptance criteria for benzoic acid (0%/0%); however, it has been identified as a "difficult" analyte. The results of the associated sample are reported.
The WG1561189-3 LCSD recovery, associated with L2156730-09, is below the acceptance criteria for benzoic acid (4%); however, it has been identified as a "difficult" analyte. The results of the associated sample are reported.

Total Metals
L2156730-01, -03, and -05 through -17: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by matrix interferences encountered during analysis.
The WG1560034-1 Method Blank, associated with L2156730-01, -03, -05, -07, -09, -11, -13, -15, and -17, has a concentration above the reporting limit for iron. Since the associated sample concentrations are either greater than 10x the blank concentration or non-detect to the RL for this target analyte, no corrective action is

Project Name:	HKV2101	**Lab Number:**	L2156730
Project Number:	Not Specified	**Report Date:**	10/29/21

Case Narrative (continued)

required. Any results detected below the reporting limit are qualified with a "B".

The WG1563264-1 Method Blank, associated with L2156730-06, -08, -10, -12, -14, and -16, has a concentration above the reporting limit for iron. Since the associated sample concentrations are either greater than 10x the blank concentration or non-detect to the RL for this target analyte, no corrective action is required. Any results detected below the reporting limit are qualified with a "B".

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 10/29/21

ORGANICS

VOLATILES

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-07
Client ID: GRID AD_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 09:05
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 10/21/21 11:59
Analyst: MKS
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.4	2.5	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.16	1
Chloroform	0.18	J	ug/kg	1.6	0.15	1
Carbon tetrachloride	ND		ug/kg	1.1	0.25	1
1,2-Dichloropropane	ND		ug/kg	1.1	0.14	1
Dibromochloromethane	ND		ug/kg	1.1	0.15	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	0.29	1
Tetrachloroethene	ND		ug/kg	0.54	0.21	1
Chlorobenzene	ND		ug/kg	0.54	0.14	1
Trichlorofluoromethane	ND		ug/kg	4.4	0.76	1
1,2-Dichloroethane	ND		ug/kg	1.1	0.28	1
1,1,1-Trichloroethane	ND		ug/kg	0.54	0.18	1
Bromodichloromethane	ND		ug/kg	0.54	0.12	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	0.30	1
cis-1,3-Dichloropropene	ND		ug/kg	0.54	0.17	1
1,3-Dichloropropene, Total	ND		ug/kg	0.54	0.17	1
1,1-Dichloropropene	ND		ug/kg	0.54	0.17	1
Bromoform	ND		ug/kg	4.4	0.27	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.54	0.18	1
Benzene	ND		ug/kg	0.54	0.18	1
Toluene	ND		ug/kg	1.1	0.59	1
Ethylbenzene	ND		ug/kg	1.1	0.15	1
Chloromethane	ND		ug/kg	4.4	1.0	1
Bromomethane	ND		ug/kg	2.2	0.63	1
Vinyl chloride	ND		ug/kg	1.1	0.36	1
Chloroethane	ND		ug/kg	2.2	0.49	1
1,1-Dichloroethene	ND		ug/kg	1.1	0.26	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.15	1

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-07 Date Collected: 10/15/21 09:05

Client ID: GRID AD_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.54	0.15	1
1,2-Dichlorobenzene	ND		ug/kg	2.2	0.16	1
1,3-Dichlorobenzene	ND		ug/kg	2.2	0.16	1
1,4-Dichlorobenzene	ND		ug/kg	2.2	0.19	1
Methyl tert butyl ether	ND		ug/kg	2.2	0.22	1
p/m-Xylene	ND		ug/kg	2.2	0.61	1
o-Xylene	ND		ug/kg	1.1	0.32	1
Xylenes, Total	ND		ug/kg	1.1	0.32	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	0.19	1
1,2-Dichloroethene, Total	ND		ug/kg	1.1	0.15	1
Dibromomethane	ND		ug/kg	2.2	0.26	1
Styrene	ND		ug/kg	1.1	0.21	1
Dichlorodifluoromethane	ND		ug/kg	11	1.0	1
Acetone	ND		ug/kg	11	5.2	1
Carbon disulfide	ND		ug/kg	11	5.0	1
2-Butanone	ND		ug/kg	11	2.4	1
Vinyl acetate	ND		ug/kg	11	2.3	1
4-Methyl-2-pentanone	ND		ug/kg	11	1.4	1
1,2,3-Trichloropropane	ND		ug/kg	2.2	0.14	1
2-Hexanone	ND		ug/kg	11	1.3	1
Bromochloromethane	ND		ug/kg	2.2	0.22	1
2,2-Dichloropropane	ND		ug/kg	2.2	0.22	1
1,2-Dibromoethane	ND		ug/kg	1.1	0.30	1
1,3-Dichloropropane	ND		ug/kg	2.2	0.18	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.54	0.14	1
Bromobenzene	ND		ug/kg	2.2	0.16	1
n-Butylbenzene	ND		ug/kg	1.1	0.18	1
sec-Butylbenzene	ND		ug/kg	1.1	0.16	1
tert-Butylbenzene	ND		ug/kg	2.2	0.13	1
o-Chlorotoluene	ND		ug/kg	2.2	0.21	1
p-Chlorotoluene	ND		ug/kg	2.2	0.12	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.3	1.1	1
Hexachlorobutadiene	ND		ug/kg	4.4	0.18	1
Isopropylbenzene	ND		ug/kg	1.1	0.12	1
p-Isopropyltoluene	ND		ug/kg	1.1	0.12	1
Naphthalene	ND		ug/kg	4.4	0.71	1
Acrylonitrile	ND		ug/kg	4.4	1.2	1

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-07 Date Collected: 10/15/21 09:05

Client ID: GRID AD_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.1	0.19	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.2	0.35	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.2	0.30	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.2	0.21	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.2	0.36	1
1,4-Dioxane	ND		ug/kg	87	38.	1
p-Diethylbenzene	ND		ug/kg	2.2	0.19	1
p-Ethyltoluene	ND		ug/kg	2.2	0.42	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.2	0.21	1
Ethyl ether	ND		ug/kg	2.2	0.37	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.4	1.5	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	98		70-130

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-09
Client ID: GRID L_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 14:01
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 10/21/21 12:37
Analyst: MKS
Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.8	3.1	1
1,1-Dichloroethane	ND		ug/kg	1.4	0.20	1
Chloroform	ND		ug/kg	2.0	0.19	1
Carbon tetrachloride	ND		ug/kg	1.4	0.31	1
1,2-Dichloropropane	ND		ug/kg	1.4	0.17	1
Dibromochloromethane	ND		ug/kg	1.4	0.19	1
1,1,2-Trichloroethane	ND		ug/kg	1.4	0.36	1
Tetrachloroethene	ND		ug/kg	0.68	0.27	1
Chlorobenzene	ND		ug/kg	0.68	0.17	1
Trichlorofluoromethane	ND		ug/kg	5.4	0.95	1
1,2-Dichloroethane	ND		ug/kg	1.4	0.35	1
1,1,1-Trichloroethane	ND		ug/kg	0.68	0.23	1
Bromodichloromethane	ND		ug/kg	0.68	0.15	1
trans-1,3-Dichloropropene	ND		ug/kg	1.4	0.37	1
cis-1,3-Dichloropropene	ND		ug/kg	0.68	0.22	1
1,3-Dichloropropene, Total	ND		ug/kg	0.68	0.22	1
1,1-Dichloropropene	ND		ug/kg	0.68	0.22	1
Bromoform	ND		ug/kg	5.4	0.34	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.68	0.23	1
Benzene	ND		ug/kg	0.68	0.23	1
Toluene	ND		ug/kg	1.4	0.74	1
Ethylbenzene	ND		ug/kg	1.4	0.19	1
Chloromethane	ND		ug/kg	5.4	1.3	1
Bromomethane	ND		ug/kg	2.7	0.79	1
Vinyl chloride	ND		ug/kg	1.4	0.46	1
Chloroethane	ND		ug/kg	2.7	0.62	1
1,1-Dichloroethene	ND		ug/kg	1.4	0.32	1
trans-1,2-Dichloroethene	ND		ug/kg	2.0	0.19	1

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-09 Date Collected: 10/15/21 14:01

Client ID: GRID L_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.68	0.19	1
1,2-Dichlorobenzene	ND		ug/kg	2.7	0.20	1
1,3-Dichlorobenzene	ND		ug/kg	2.7	0.20	1
1,4-Dichlorobenzene	ND		ug/kg	2.7	0.23	1
Methyl tert butyl ether	ND		ug/kg	2.7	0.27	1
p/m-Xylene	ND		ug/kg	2.7	0.76	1
o-Xylene	ND		ug/kg	1.4	0.40	1
Xylenes, Total	ND		ug/kg	1.4	0.40	1
cis-1,2-Dichloroethene	ND		ug/kg	1.4	0.24	1
1,2-Dichloroethene, Total	ND		ug/kg	1.4	0.19	1
Dibromomethane	ND		ug/kg	2.7	0.32	1
Styrene	ND		ug/kg	1.4	0.27	1
Dichlorodifluoromethane	ND		ug/kg	14	1.2	1
Acetone	ND		ug/kg	14	6.6	1
Carbon disulfide	ND		ug/kg	14	6.2	1
2-Butanone	ND		ug/kg	14	3.0	1
Vinyl acetate	ND		ug/kg	14	2.9	1
4-Methyl-2-pentanone	ND		ug/kg	14	1.7	1
1,2,3-Trichloropropane	ND		ug/kg	2.7	0.17	1
2-Hexanone	ND		ug/kg	14	1.6	1
Bromochloromethane	ND		ug/kg	2.7	0.28	1
2,2-Dichloropropane	ND		ug/kg	2.7	0.28	1
1,2-Dibromoethane	ND		ug/kg	1.4	0.38	1
1,3-Dichloropropane	ND		ug/kg	2.7	0.23	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.68	0.18	1
Bromobenzene	ND		ug/kg	2.7	0.20	1
n-Butylbenzene	ND		ug/kg	1.4	0.23	1
sec-Butylbenzene	ND		ug/kg	1.4	0.20	1
tert-Butylbenzene	ND		ug/kg	2.7	0.16	1
o-Chlorotoluene	ND		ug/kg	2.7	0.26	1
p-Chlorotoluene	ND		ug/kg	2.7	0.15	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.1	1.4	1
Hexachlorobutadiene	ND		ug/kg	5.4	0.23	1
Isopropylbenzene	ND		ug/kg	1.4	0.15	1
p-Isopropyltoluene	ND		ug/kg	1.4	0.15	1
Naphthalene	ND		ug/kg	5.4	0.88	1
Acrylonitrile	ND		ug/kg	5.4	1.6	1

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-09 Date Collected: 10/15/21 14:01

Client ID: GRID L_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.4	0.23	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.7	0.44	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.7	0.37	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.7	0.26	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.7	0.45	1
1,4-Dioxane	ND		ug/kg	110	48.	1
p-Diethylbenzene	ND		ug/kg	2.7	0.24	1
p-Ethyltoluene	ND		ug/kg	2.7	0.52	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.7	0.26	1
Ethyl ether	ND		ug/kg	2.7	0.46	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	6.8	1.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	100		70-130

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/21/21 08:08
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 07,09 Batch: WG1560925-15					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	0.17	J	ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
1,3-Dichloropropene, Total	ND		ug/kg	0.50	0.16
1,1-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/21/21 08:08
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 07,09 Batch: WG1560925-15					
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
1,2-Dichloroethene, Total	ND		ug/kg	1.0	0.14
Dibromomethane	ND		ug/kg	2.0	0.24
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
Vinyl acetate	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
1,2,3-Trichloropropane	ND		ug/kg	2.0	0.13
2-Hexanone	ND		ug/kg	10	1.2
Bromochloromethane	ND		ug/kg	2.0	0.20
2,2-Dichloropropane	ND		ug/kg	2.0	0.20
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
1,3-Dichloropropane	ND		ug/kg	2.0	0.17
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	0.13
Bromobenzene	ND		ug/kg	2.0	0.14
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
o-Chlorotoluene	ND		ug/kg	2.0	0.19

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/21/21 08:08
Analyst: JC

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 07,09 Batch: WG1560925-15					
p-Chlorotoluene	ND		ug/kg	2.0	0.11
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Hexachlorobutadiene	ND		ug/kg	4.0	0.17
Isopropylbenzene	ND		ug/kg	1.0	0.11
p-Isopropyltoluene	ND		ug/kg	1.0	0.11
Naphthalene	ND		ug/kg	4.0	0.65
Acrylonitrile	ND		ug/kg	4.0	1.2
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	0.32
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
1,4-Dioxane	ND		ug/kg	80	35.
p-Diethylbenzene	ND		ug/kg	2.0	0.18
p-Ethyltoluene	ND		ug/kg	2.0	0.38
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.0	0.19
Ethyl ether	ND		ug/kg	2.0	0.34
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	1.4

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	99		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	94		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 07,09 Batch: WG1560925-13 WG1560925-14								
Methylene chloride	89		87		70-130	2		30
1,1-Dichloroethane	104		102		70-130	2		30
Chloroform	102		101		70-130	1		30
Carbon tetrachloride	103		102		70-130	1		30
1,2-Dichloropropane	103		102		70-130	1		30
Dibromochloromethane	104		105		70-130	1		30
1,1,2-Trichloroethane	102		102		70-130	0		30
Tetrachloroethene	104		103		70-130	1		30
Chlorobenzene	104		103		70-130	1		30
Trichlorofluoromethane	105		102		70-139	3		30
1,2-Dichloroethane	103		102		70-130	1		30
1,1,1-Trichloroethane	108		104		70-130	4		30
Bromodichloromethane	106		105		70-130	1		30
trans-1,3-Dichloropropene	106		106		70-130	0		30
cis-1,3-Dichloropropene	109		108		70-130	1		30
1,1-Dichloropropene	107		105		70-130	2		30
Bromoform	98		100		70-130	2		30
1,1,2,2-Tetrachloroethane	104		104		70-130	0		30
Benzene	106		105		70-130	1		30
Toluene	103		101		70-130	2		30
Ethylbenzene	107		106		70-130	1		30
Chloromethane	100		97		52-130	3		30
Bromomethane	98		96		57-147	2		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 07,09 Batch: WG1560925-13 WG1560925-14								
Vinyl chloride	106		102		67-130	4		30
Chloroethane	103		101		50-151	2		30
1,1-Dichloroethene	104		101		65-135	3		30
trans-1,2-Dichloroethene	104		100		70-130	4		30
Trichloroethene	104		101		70-130	3		30
1,2-Dichlorobenzene	101		101		70-130	0		30
1,3-Dichlorobenzene	104		103		70-130	1		30
1,4-Dichlorobenzene	103		103		70-130	0		30
Methyl tert butyl ether	100		100		66-130	0		30
p/m-Xylene	106		105		70-130	1		30
o-Xylene	107		106		70-130	1		30
cis-1,2-Dichloroethene	100		97		70-130	3		30
Dibromomethane	102		101		70-130	1		30
Styrene	111		110		70-130	1		30
Dichlorodifluoromethane	104		97		30-146	7		30
Acetone	84		81		54-140	4		30
Carbon disulfide	89		88		59-130	1		30
2-Butanone	89		86		70-130	3		30
Vinyl acetate	124		128		70-130	3		30
4-Methyl-2-pentanone	103		102		70-130	1		30
1,2,3-Trichloropropane	100		100		68-130	0		30
2-Hexanone	102		101		70-130	1		30
Bromochloromethane	101		100		70-130	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 07,09 Batch: WG1560925-13 WG1560925-14								
2,2-Dichloropropane	107		105		70-130	2		30
1,2-Dibromoethane	102		101		70-130	1		30
1,3-Dichloropropane	102		102		69-130	0		30
1,1,1,2-Tetrachloroethane	104		105		70-130	1		30
Bromobenzene	100		100		70-130	0		30
n-Butylbenzene	109		109		70-130	0		30
sec-Butylbenzene	106		106		70-130	0		30
tert-Butylbenzene	104		104		70-130	0		30
o-Chlorotoluene	104		104		70-130	0		30
p-Chlorotoluene	105		105		70-130	0		30
1,2-Dibromo-3-chloropropane	97		97		68-130	0		30
Hexachlorobutadiene	107		107		67-130	0		30
Isopropylbenzene	106		105		70-130	1		30
p-Isopropyltoluene	107		106		70-130	1		30
Naphthalene	104		104		70-130	0		30
Acrylonitrile	103		103		70-130	0		30
n-Propylbenzene	108		108		70-130	0		30
1,2,3-Trichlorobenzene	106		106		70-130	0		30
1,2,4-Trichlorobenzene	112		111		70-130	1		30
1,3,5-Trimethylbenzene	106		105		70-130	1		30
1,2,4-Trimethylbenzene	104		104		70-130	0		30
1,4-Dioxane	77		77		65-136	0		30
p-Diethylbenzene	108		107		70-130	1		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 07,09 Batch: WG1560925-13 WG1560925-14								
p-Ethyltoluene	106		106		70-130	0		30
1,2,4,5-Tetramethylbenzene	114		115		70-130	1		30
Ethyl ether	103		100		67-130	3		30
trans-1,4-Dichloro-2-butene	107		106		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		102		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	99		100		70-130
Dibromofluoromethane	99		98		70-130

SEMIVOLATILES

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-07
Client ID: GRID AD_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 09:05
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 10/18/21 05:12
Analyst: LJG
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 10/16/21 21:41

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	18.	1
1,2,4-Trichlorobenzene	ND		ug/kg	180	20.	1
Hexachlorobenzene	ND		ug/kg	110	20.	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	24.	1
2-Chloronaphthalene	ND		ug/kg	180	18.	1
1,2-Dichlorobenzene	ND		ug/kg	180	32.	1
1,3-Dichlorobenzene	ND		ug/kg	180	31.	1
1,4-Dichlorobenzene	ND		ug/kg	180	31.	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	47.	1
2,4-Dinitrotoluene	ND		ug/kg	180	36.	1
2,6-Dinitrotoluene	ND		ug/kg	180	31.	1
Fluoranthene	470		ug/kg	110	20.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	19.	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	27.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	210	30.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	18.	1
Hexachlorobutadiene	ND		ug/kg	180	26.	1
Hexachlorocyclopentadiene	ND		ug/kg	510	160	1
Hexachloroethane	ND		ug/kg	140	29.	1
Isophorone	ND		ug/kg	160	23.	1
Naphthalene	ND		ug/kg	180	22.	1
Nitrobenzene	ND		ug/kg	160	26.	1
NDPA/DPA	ND		ug/kg	140	20.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	28.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	180	62.	1
Butyl benzyl phthalate	ND		ug/kg	180	45.	1
Di-n-butylphthalate	ND		ug/kg	180	34.	1
Di-n-octylphthalate	ND		ug/kg	180	61.	1

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-07 Date Collected: 10/15/21 09:05

Client ID: GRID AD_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	180	16.	1
Dimethyl phthalate	200		ug/kg	180	37.	1
Benzo(a)anthracene	290		ug/kg	110	20.	1
Benzo(a)pyrene	200		ug/kg	140	44.	1
Benzo(b)fluoranthene	380		ug/kg	110	30.	1
Benzo(k)fluoranthene	100	J	ug/kg	110	28.	1
Chrysene	270		ug/kg	110	18.	1
Acenaphthylene	ND		ug/kg	140	28.	1
Anthracene	62	J	ug/kg	110	35.	1
Benzo(ghi)perylene	160		ug/kg	140	21.	1
Fluorene	20	J	ug/kg	180	17.	1
Phenanthrene	220		ug/kg	110	22.	1
Dibenzo(a,h)anthracene	38	J	ug/kg	110	21.	1
Indeno(1,2,3-cd)pyrene	170		ug/kg	140	25.	1
Pyrene	430		ug/kg	110	18.	1
Biphenyl	ND		ug/kg	410	41.	1
4-Chloroaniline	ND		ug/kg	180	32.	1
2-Nitroaniline	ND		ug/kg	180	34.	1
3-Nitroaniline	ND		ug/kg	180	34.	1
4-Nitroaniline	ND		ug/kg	180	74.	1
Dibenzofuran	ND		ug/kg	180	17.	1
2-Methylnaphthalene	ND		ug/kg	210	22.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	180	19.	1
Acetophenone	ND		ug/kg	180	22.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	34.	1
p-Chloro-m-cresol	ND		ug/kg	180	26.	1
2-Chlorophenol	ND		ug/kg	180	21.	1
2,4-Dichlorophenol	ND		ug/kg	160	29.	1
2,4-Dimethylphenol	ND		ug/kg	180	59.	1
2-Nitrophenol	ND		ug/kg	380	67.	1
4-Nitrophenol	ND		ug/kg	250	73.	1
2,4-Dinitrophenol	ND		ug/kg	860	83.	1
4,6-Dinitro-o-cresol	ND		ug/kg	460	86.	1
Pentachlorophenol	ND		ug/kg	140	39.	1
Phenol	ND		ug/kg	180	27.	1
2-Methylphenol	ND		ug/kg	180	28.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	260	28.	1

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-07 Date Collected: 10/15/21 09:05

Client ID: GRID AD_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	180	34.	1
Benzoic Acid	ND		ug/kg	580	180	1
Benzyl Alcohol	ND		ug/kg	180	54.	1
Carbazole	21	J	ug/kg	180	17.	1
1,4-Dioxane	ND		ug/kg	27	8.2	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	79		25-120
Phenol-d6	76		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	75		30-120
2,4,6-Tribromophenol	86		10-136
4-Terphenyl-d14	70		18-120

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-09
Client ID: GRID L_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 14:01
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 10/20/21 15:22
Analyst: JG
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 10/19/21 17:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	140	18.	1
1,2,4-Trichlorobenzene	ND		ug/kg	180	20.	1
Hexachlorobenzene	ND		ug/kg	100	20.	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	24.	1
2-Chloronaphthalene	ND		ug/kg	180	17.	1
1,2-Dichlorobenzene	ND		ug/kg	180	32.	1
1,3-Dichlorobenzene	ND		ug/kg	180	30.	1
1,4-Dichlorobenzene	ND		ug/kg	180	31.	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	47.	1
2,4-Dinitrotoluene	ND		ug/kg	180	35.	1
2,6-Dinitrotoluene	ND		ug/kg	180	30.	1
Fluoranthene	ND		ug/kg	100	20.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	19.	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	27.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	210	30.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	18.	1
Hexachlorobutadiene	ND		ug/kg	180	26.	1
Hexachlorocyclopentadiene	ND		ug/kg	500	160	1
Hexachloroethane	ND		ug/kg	140	28.	1
Isophorone	ND		ug/kg	160	23.	1
Naphthalene	ND		ug/kg	180	21.	1
Nitrobenzene	ND		ug/kg	160	26.	1
NDPA/DPA	ND		ug/kg	140	20.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	27.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	180	61.	1
Butyl benzyl phthalate	ND		ug/kg	180	44.	1
Di-n-butylphthalate	ND		ug/kg	180	33.	1
Di-n-octylphthalate	ND		ug/kg	180	60.	1

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-09 Date Collected: 10/15/21 14:01

Client ID: GRID L_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	180	16.	1
Dimethyl phthalate	ND		ug/kg	180	37.	1
Benzo(a)anthracene	ND		ug/kg	100	20.	1
Benzo(a)pyrene	ND		ug/kg	140	43.	1
Benzo(b)fluoranthene	ND		ug/kg	100	30.	1
Benzo(k)fluoranthene	ND		ug/kg	100	28.	1
Chrysene	ND		ug/kg	100	18.	1
Acenaphthylene	ND		ug/kg	140	27.	1
Anthracene	ND		ug/kg	100	34.	1
Benzo(ghi)perylene	ND		ug/kg	140	21.	1
Fluorene	ND		ug/kg	180	17.	1
Phenanthrene	ND		ug/kg	100	21.	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	20.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	24.	1
Pyrene	ND		ug/kg	100	18.	1
Biphenyl	ND		ug/kg	400	41.	1
4-Chloroaniline	ND		ug/kg	180	32.	1
2-Nitroaniline	ND		ug/kg	180	34.	1
3-Nitroaniline	ND		ug/kg	180	33.	1
4-Nitroaniline	ND		ug/kg	180	73.	1
Dibenzofuran	ND		ug/kg	180	17.	1
2-Methylnaphthalene	ND		ug/kg	210	21.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	180	18.	1
Acetophenone	ND		ug/kg	180	22.	1
2,4,6-Trichlorophenol	ND		ug/kg	100	33.	1
p-Chloro-m-cresol	ND		ug/kg	180	26.	1
2-Chlorophenol	ND		ug/kg	180	21.	1
2,4-Dichlorophenol	ND		ug/kg	160	28.	1
2,4-Dimethylphenol	ND		ug/kg	180	58.	1
2-Nitrophenol	ND		ug/kg	380	66.	1
4-Nitrophenol	ND		ug/kg	250	72.	1
2,4-Dinitrophenol	ND		ug/kg	840	82.	1
4,6-Dinitro-o-cresol	ND		ug/kg	460	84.	1
Pentachlorophenol	ND		ug/kg	140	39.	1
Phenol	ND		ug/kg	180	27.	1
2-Methylphenol	ND		ug/kg	180	27.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	250	28.	1

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-09 Date Collected: 10/15/21 14:01

Client ID: GRID L_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	180	34.	1
Benzoic Acid	ND		ug/kg	570	180	1
Benzyl Alcohol	ND		ug/kg	180	54.	1
Carbazole	ND		ug/kg	180	17.	1
1,4-Dioxane	ND		ug/kg	26	8.1	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	73		25-120
Phenol-d6	72		10-120
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	55		30-120
2,4,6-Tribromophenol	79		10-136
4-Terphenyl-d14	56		18-120

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/17/21 21:49
Analyst: JRW

Extraction Method: EPA 3546
Extraction Date: 10/16/21 17:59

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 07 Batch: WG1559564-1					
Acenaphthene	ND		ug/kg	130	17.
1,2,4-Trichlorobenzene	ND		ug/kg	160	18.
Hexachlorobenzene	ND		ug/kg	97	18.
Bis(2-chloroethyl)ether	ND		ug/kg	140	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
1,2-Dichlorobenzene	ND		ug/kg	160	29.
1,3-Dichlorobenzene	ND		ug/kg	160	28.
1,4-Dichlorobenzene	ND		ug/kg	160	28.
3,3'-Dichlorobenzidine	ND		ug/kg	160	43.
2,4-Dinitrotoluene	ND		ug/kg	160	32.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Fluoranthene	ND		ug/kg	97	18.
4-Chlorophenyl phenyl ether	ND		ug/kg	160	17.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	190	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	170	16.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachlorocyclopentadiene	ND		ug/kg	460	150
Hexachloroethane	ND		ug/kg	130	26.
Isophorone	ND		ug/kg	140	21.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	140	24.
NDPA/DPA	ND		ug/kg	130	18.
n-Nitrosodi-n-propylamine	ND		ug/kg	160	25.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	56.
Butyl benzyl phthalate	ND		ug/kg	160	41.
Di-n-butylphthalate	ND		ug/kg	160	30.
Di-n-octylphthalate	ND		ug/kg	160	55.
Diethyl phthalate	ND		ug/kg	160	15.

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/17/21 21:49
Analyst: JRW

Extraction Method: EPA 3546
Extraction Date: 10/16/21 17:59

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 07 Batch: WG1559564-1					
Dimethyl phthalate	ND		ug/kg	160	34.
Benzo(a)anthracene	ND		ug/kg	97	18.
Benzo(a)pyrene	ND		ug/kg	130	39.
Benzo(b)fluoranthene	ND		ug/kg	97	27.
Benzo(k)fluoranthene	ND		ug/kg	97	26.
Chrysene	ND		ug/kg	97	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	97	31.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	97	20.
Dibenzo(a,h)anthracene	ND		ug/kg	97	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	22.
Pyrene	ND		ug/kg	97	16.
Biphenyl	ND		ug/kg	370	37.
4-Chloroaniline	ND		ug/kg	160	29.
2-Nitroaniline	ND		ug/kg	160	31.
3-Nitroaniline	ND		ug/kg	160	30.
4-Nitroaniline	ND		ug/kg	160	67.
Dibenzofuran	ND		ug/kg	160	15.
2-Methylnaphthalene	ND		ug/kg	190	19.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	160	17.
Acetophenone	ND		ug/kg	160	20.
2,4,6-Trichlorophenol	ND		ug/kg	97	30.
p-Chloro-m-cresol	ND		ug/kg	160	24.
2-Chlorophenol	ND		ug/kg	160	19.
2,4-Dichlorophenol	ND		ug/kg	140	26.
2,4-Dimethylphenol	ND		ug/kg	160	53.
2-Nitrophenol	ND		ug/kg	350	61.

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/17/21 21:49
Analyst: JRW

Extraction Method: EPA 3546
Extraction Date: 10/16/21 17:59

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 07 Batch: WG1559564-1					
4-Nitrophenol	ND		ug/kg	220	66.
2,4-Dinitrophenol	ND		ug/kg	770	75.
4,6-Dinitro-o-cresol	ND		ug/kg	420	77.
Pentachlorophenol	ND		ug/kg	130	35.
Phenol	ND		ug/kg	160	24.
2-Methylphenol	ND		ug/kg	160	25.
3-Methylphenol/4-Methylphenol	ND		ug/kg	230	25.
2,4,5-Trichlorophenol	ND		ug/kg	160	31.
Benzoic Acid	ND		ug/kg	520	160
Benzyl Alcohol	ND		ug/kg	160	49.
Carbazole	ND		ug/kg	160	16.
1,4-Dioxane	ND		ug/kg	24	7.4

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	66		25-120
Phenol-d6	62		10-120
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	63		30-120
2,4,6-Tribromophenol	60		10-136
4-Terphenyl-d14	57		18-120

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/20/21 12:58
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 10/19/21 17:38

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 09 Batch: WG1561189-1					
Acenaphthene	ND		ug/kg	130	17.
1,2,4-Trichlorobenzene	ND		ug/kg	160	19.
Hexachlorobenzene	ND		ug/kg	98	18.
Bis(2-chloroethyl)ether	ND		ug/kg	150	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
1,2-Dichlorobenzene	ND		ug/kg	160	29.
1,3-Dichlorobenzene	ND		ug/kg	160	28.
1,4-Dichlorobenzene	ND		ug/kg	160	28.
3,3'-Dichlorobenzidine	ND		ug/kg	160	43.
2,4-Dinitrotoluene	ND		ug/kg	160	32.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Fluoranthene	ND		ug/kg	98	19.
4-Chlorophenyl phenyl ether	ND		ug/kg	160	17.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	16.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachlorocyclopentadiene	ND		ug/kg	470	150
Hexachloroethane	ND		ug/kg	130	26.
Isophorone	ND		ug/kg	150	21.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
NDPA/DPA	ND		ug/kg	130	18.
n-Nitrosodi-n-propylamine	ND		ug/kg	160	25.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	56.
Butyl benzyl phthalate	ND		ug/kg	160	41.
Di-n-butylphthalate	ND		ug/kg	160	31.
Di-n-octylphthalate	ND		ug/kg	160	55.
Diethyl phthalate	ND		ug/kg	160	15.

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/20/21 12:58
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 10/19/21 17:38

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 09 Batch: WG1561189-1					
Dimethyl phthalate	ND		ug/kg	160	34.
Benzo(a)anthracene	ND		ug/kg	98	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	98	27.
Benzo(k)fluoranthene	ND		ug/kg	98	26.
Chrysene	ND		ug/kg	98	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	98	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	98	20.
Dibenzo(a,h)anthracene	ND		ug/kg	98	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	98	16.
Biphenyl	ND		ug/kg	370	38.
4-Chloroaniline	ND		ug/kg	160	30.
2-Nitroaniline	ND		ug/kg	160	31.
3-Nitroaniline	ND		ug/kg	160	31.
4-Nitroaniline	ND		ug/kg	160	67.
Dibenzofuran	ND		ug/kg	160	15.
2-Methylnaphthalene	ND		ug/kg	200	20.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	160	17.
Acetophenone	ND		ug/kg	160	20.
2,4,6-Trichlorophenol	ND		ug/kg	98	31.
p-Chloro-m-cresol	ND		ug/kg	160	24.
2-Chlorophenol	ND		ug/kg	160	19.
2,4-Dichlorophenol	ND		ug/kg	150	26.
2,4-Dimethylphenol	ND		ug/kg	160	54.
2-Nitrophenol	ND		ug/kg	350	61.

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/20/21 12:58
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 10/19/21 17:38

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 09 Batch: WG1561189-1					
4-Nitrophenol	ND		ug/kg	230	66.
2,4-Dinitrophenol	ND		ug/kg	780	76.
4,6-Dinitro-o-cresol	ND		ug/kg	420	78.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	25.
3-Methylphenol/4-Methylphenol	ND		ug/kg	230	26.
2,4,5-Trichlorophenol	ND		ug/kg	160	31.
Benzoic Acid	ND		ug/kg	530	160
Benzyl Alcohol	ND		ug/kg	160	50.
Carbazole	ND		ug/kg	160	16.
1,4-Dioxane	ND		ug/kg	24	7.5

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	91		25-120
Phenol-d6	89		10-120
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	75		30-120
2,4,6-Tribromophenol	100		10-136
4-Terphenyl-d14	90		18-120

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1559564-2 WG1559564-3								
Acenaphthene	46		56		31-137	20		50
1,2,4-Trichlorobenzene	43		52		38-107	19		50
Hexachlorobenzene	47		57		40-140	19		50
Bis(2-chloroethyl)ether	45		55		40-140	20		50
2-Chloronaphthalene	49		58		40-140	17		50
1,2-Dichlorobenzene	45		53		40-140	16		50
1,3-Dichlorobenzene	45		53		40-140	16		50
1,4-Dichlorobenzene	44		52		28-104	17		50
3,3'-Dichlorobenzidine	44		52		40-140	17		50
2,4-Dinitrotoluene	49		60		40-132	20		50
2,6-Dinitrotoluene	54		66		40-140	20		50
Fluoranthene	48		58		40-140	19		50
4-Chlorophenyl phenyl ether	49		58		40-140	17		50
4-Bromophenyl phenyl ether	49		60		40-140	20		50
Bis(2-chloroisopropyl)ether	67		81		40-140	19		50
Bis(2-chloroethoxy)methane	45		54		40-117	18		50
Hexachlorobutadiene	50		59		40-140	17		50
Hexachlorocyclopentadiene	**34**	Q	44		40-140	26		50
Hexachloroethane	48		57		40-140	17		50
Isophorone	46		56		40-140	20		50
Naphthalene	48		57		40-140	17		50
Nitrobenzene	51		60		40-140	16		50
NDPA/DPA	50		61		36-157	20		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1559564-2 WG1559564-3								
n-Nitrosodi-n-propylamine	48		57		32-121	17		50
Bis(2-ethylhexyl)phthalate	59		72		40-140	20		50
Butyl benzyl phthalate	52		62		40-140	18		50
Di-n-butylphthalate	51		62		40-140	19		50
Di-n-octylphthalate	58		70		40-140	19		50
Diethyl phthalate	49		61		40-140	22		50
Dimethyl phthalate	47		58		40-140	21		50
Benzo(a)anthracene	50		61		40-140	20		50
Benzo(a)pyrene	48		58		40-140	19		50
Benzo(b)fluoranthene	51		63		40-140	21		50
Benzo(k)fluoranthene	51		60		40-140	16		50
Chrysene	48		58		40-140	19		50
Acenaphthylene	49		59		40-140	19		50
Anthracene	46		56		40-140	20		50
Benzo(ghi)perylene	48		60		40-140	22		50
Fluorene	51		60		40-140	16		50
Phenanthrene	46		56		40-140	20		50
Dibenzo(a,h)anthracene	45		57		40-140	24		50
Indeno(1,2,3-cd)pyrene	46		58		40-140	23		50
Pyrene	47		56		35-142	17		50
Biphenyl	48		58		37-127	19		50
4-Chloroaniline	53		44		40-140	19		50
2-Nitroaniline	56		66		47-134	16		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1559564-2 WG1559564-3								
3-Nitroaniline	45		54		26-129	18		50
4-Nitroaniline	46		56		41-125	20		50
Dibenzofuran	50		61		40-140	20		50
2-Methylnaphthalene	48		57		40-140	17		50
1,2,4,5-Tetrachlorobenzene	49		59		40-117	19		50
Acetophenone	44		54		14-144	20		50
2,4,6-Trichlorophenol	54		63		30-130	15		50
p-Chloro-m-cresol	55		67		26-103	20		50
2-Chlorophenol	49		60		25-102	20		50
2,4-Dichlorophenol	50		62		30-130	21		50
2,4-Dimethylphenol	50		60		30-130	18		50
2-Nitrophenol	55		66		30-130	18		50
4-Nitrophenol	63		75		11-114	17		50
2,4-Dinitrophenol	44		58		4-130	27		50
4,6-Dinitro-o-cresol	55		68		10-130	21		50
Pentachlorophenol	45		56		17-109	22		50
Phenol	46		54		26-90	16		50
2-Methylphenol	52		61		30-130.	16		50
3-Methylphenol/4-Methylphenol	54		66		30-130	20		50
2,4,5-Trichlorophenol	54		67		30-130	21		50
Benzoic Acid	**0**	Q	**0**	Q	10-110	NC		50
Benzyl Alcohol	50		60		40-140	18		50
Carbazole	**49**	Q	58		54-128	17		50

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1559564-2 WG1559564-3								
1,4-Dioxane	**38**	Q	45		40-140	17		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	53		65		25-120
Phenol-d6	52		63		10-120
Nitrobenzene-d5	51		62		23-120
2-Fluorobiphenyl	51		61		30-120
2,4,6-Tribromophenol	51		62		10-136
4-Terphenyl-d14	46		56		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 09 Batch: WG1561189-2 WG1561189-3								
Acenaphthene	91		55		31-137	49		50
1,2,4-Trichlorobenzene	83		52		38-107	46		50
Hexachlorobenzene	91		54		40-140	**51**	Q	50
Bis(2-chloroethyl)ether	81		52		40-140	44		50
2-Chloronaphthalene	84		52		40-140	47		50
1,2-Dichlorobenzene	82		52		40-140	45		50
1,3-Dichlorobenzene	81		51		40-140	45		50
1,4-Dichlorobenzene	81		52		28-104	44		50
3,3'-Dichlorobenzidine	87		48		40-140	**58**	Q	50
2,4-Dinitrotoluene	100		59		40-132	**52**	Q	50
2,6-Dinitrotoluene	102		60		40-140	**52**	Q	50
Fluoranthene	92		55		40-140	50		50
4-Chlorophenyl phenyl ether	90		52		40-140	**54**	Q	50
4-Bromophenyl phenyl ether	90		54		40-140	50		50
Bis(2-chloroisopropyl)ether	64		41		40-140	44		50
Bis(2-chloroethoxy)methane	82		51		40-117	47		50
Hexachlorobutadiene	80		49		40-140	48		50
Hexachlorocyclopentadiene	77		46		40-140	50		50
Hexachloroethane	92		59		40-140	44		50
Isophorone	80		50		40-140	46		50
Naphthalene	82		50		40-140	48		50
Nitrobenzene	89		55		40-140	47		50
NDPA/DPA	91		54		36-157	**51**	Q	50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 09 Batch: WG1561189-2 WG1561189-3								
n-Nitrosodi-n-propylamine	81		53		32-121	42		50
Bis(2-ethylhexyl)phthalate	113		66		40-140	**53**	Q	50
Butyl benzyl phthalate	117		65		40-140	**57**	Q	50
Di-n-butylphthalate	102		60		40-140	**52**	Q	50
Di-n-octylphthalate	112		67		40-140	50		50
Diethyl phthalate	97		57		40-140	**52**	Q	50
Dimethyl phthalate	89		52		40-140	**52**	Q	50
Benzo(a)anthracene	94		58		40-140	47		50
Benzo(a)pyrene	88		51		40-140	**53**	Q	50
Benzo(b)fluoranthene	101		57		40-140	**56**	Q	50
Benzo(k)fluoranthene	94		55		40-140	**52**	Q	50
Chrysene	92		52		40-140	**56**	Q	50
Acenaphthylene	82		49		40-140	50		50
Anthracene	92		54		40-140	**52**	Q	50
Benzo(ghi)perylene	97		56		40-140	**54**	Q	50
Fluorene	92		54		40-140	**52**	Q	50
Phenanthrene	91		54		40-140	**51**	Q	50
Dibenzo(a,h)anthracene	92		54		40-140	**52**	Q	50
Indeno(1,2,3-cd)pyrene	92		53		40-140	**54**	Q	50
Pyrene	93		55		35-142	**51**	Q	50
Biphenyl	84		52		37-127	47		50
4-Chloroaniline	75		43		40-140	**54**	Q	50
2-Nitroaniline	110		65		47-134	**51**	Q	50

Lab Control Sample Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 09 Batch: WG1561189-2 WG1561189-3								
3-Nitroaniline	98		55		26-129	**56**	Q	50
4-Nitroaniline	105		60		41-125	**55**	Q	50
Dibenzofuran	91		54		40-140	**51**	Q	50
2-Methylnaphthalene	77		47		40-140	48		50
1,2,4,5-Tetrachlorobenzene	86		53		40-117	47		50
Acetophenone	83		52		14-144	46		50
2,4,6-Trichlorophenol	92		57		30-130	47		50
p-Chloro-m-cresol	92		56		26-103	49		50
2-Chlorophenol	95		61		25-102	44		50
2,4-Dichlorophenol	94		60		30-130	44		50
2,4-Dimethylphenol	89		55		30-130	47		50
2-Nitrophenol	125		80		30-130	44		50
4-Nitrophenol	108		62		11-114	**54**	Q	50
2,4-Dinitrophenol	95		55		4-130	**53**	Q	50
4,6-Dinitro-o-cresol	120		74		10-130	47		50
Pentachlorophenol	82		49		17-109	50		50
Phenol	84		54		26-90	43		50
2-Methylphenol	92		57		30-130.	47		50
3-Methylphenol/4-Methylphenol	98		62		30-130	45		50
2,4,5-Trichlorophenol	101		59		30-130	**53**	Q	50
Benzoic Acid	10		**4**	Q	10-110	**82**	Q	50
Benzyl Alcohol	89		56		40-140	46		50
Carbazole	96		56		54-128	**53**	Q	50

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 09 Batch: WG1561189-2 WG1561189-3								
1,4-Dioxane	78		53		40-140	38		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	91		58		25-120
Phenol-d6	93		59		10-120
Nitrobenzene-d5	91		58		23-120
2-Fluorobiphenyl	79		47		30-120
2,4,6-Tribromophenol	102		58		10-136
4-Terphenyl-d14	94		53		18-120

PCBS

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-07
Client ID: GRID AD_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 09:05
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 10/19/21 11:37
Analyst: JM
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 10/18/21 18:11
Cleanup Method: EPA 3665A
Cleanup Date: 10/18/21
Cleanup Method: EPA 3660B
Cleanup Date: 10/18/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	34.8	3.09	1	A
Aroclor 1221	ND		ug/kg	34.8	3.48	1	A
Aroclor 1232	ND		ug/kg	34.8	7.37	1	A
Aroclor 1242	ND		ug/kg	34.8	4.69	1	A
Aroclor 1248	ND		ug/kg	34.8	5.22	1	A
Aroclor 1254	ND		ug/kg	34.8	3.80	1	A
Aroclor 1260	ND		ug/kg	34.8	6.42	1	A
Aroclor 1262	ND		ug/kg	34.8	4.42	1	A
Aroclor 1268	ND		ug/kg	34.8	3.60	1	A
PCBs, Total	ND		ug/kg	34.8	3.09	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	57		30-150	A
Decachlorobiphenyl	56		30-150	A
2,4,5,6-Tetrachloro-m-xylene	59		30-150	B
Decachlorobiphenyl	56		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-09
Client ID: GRID L_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 14:01
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 10/20/21 17:31
Analyst: AWS
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 10/19/21 20:27
Cleanup Method: EPA 3665A
Cleanup Date: 10/20/21
Cleanup Method: EPA 3660B
Cleanup Date: 10/20/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	34.4	3.06	1	A
Aroclor 1221	ND		ug/kg	34.4	3.45	1	A
Aroclor 1232	ND		ug/kg	34.4	7.30	1	A
Aroclor 1242	ND		ug/kg	34.4	4.64	1	A
Aroclor 1248	ND		ug/kg	34.4	5.17	1	A
Aroclor 1254	ND		ug/kg	34.4	3.77	1	A
Aroclor 1260	ND		ug/kg	34.4	6.37	1	A
Aroclor 1262	ND		ug/kg	34.4	4.37	1	A
Aroclor 1268	ND		ug/kg	34.4	3.57	1	A
PCBs, Total	ND		ug/kg	34.4	3.06	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		30-150	A
Decachlorobiphenyl	84		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	83		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 10/18/21 14:40
Analyst: CW

Extraction Method: EPA 3546
Extraction Date: 10/18/21 02:29
Cleanup Method: EPA 3665A
Cleanup Date: 10/18/21
Cleanup Method: EPA 3660B
Cleanup Date: 10/18/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 07 Batch: WG1559763-1						
Aroclor 1016	ND		ug/kg	31.8	2.82	A
Aroclor 1221	ND		ug/kg	31.8	3.18	A
Aroclor 1232	ND		ug/kg	31.8	6.74	A
Aroclor 1242	ND		ug/kg	31.8	4.28	A
Aroclor 1248	ND		ug/kg	31.8	4.77	A
Aroclor 1254	ND		ug/kg	31.8	3.48	A
Aroclor 1260	ND		ug/kg	31.8	5.87	A
Aroclor 1262	ND		ug/kg	31.8	4.04	A
Aroclor 1268	ND		ug/kg	31.8	3.29	A
PCBs, Total	ND		ug/kg	31.8	2.82	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	90		30-150	A
2,4,5,6-Tetrachloro-m-xylene	67		30-150	B
Decachlorobiphenyl	84		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 10/20/21 17:07
Analyst: AWS

Extraction Method: EPA 3546
Extraction Date: 10/19/21 20:27
Cleanup Method: EPA 3665A
Cleanup Date: 10/20/21
Cleanup Method: EPA 3660B
Cleanup Date: 10/20/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 09 Batch: WG1560670-1						
Aroclor 1016	ND		ug/kg	31.8	2.82	A
Aroclor 1221	ND		ug/kg	31.8	3.18	A
Aroclor 1232	ND		ug/kg	31.8	6.73	A
Aroclor 1242	ND		ug/kg	31.8	4.28	A
Aroclor 1248	ND		ug/kg	31.8	4.76	A
Aroclor 1254	ND		ug/kg	31.8	3.48	A
Aroclor 1260	ND		ug/kg	31.8	5.87	A
Aroclor 1262	ND		ug/kg	31.8	4.03	A
Aroclor 1268	5.06	J	ug/kg	31.8	3.29	A
PCBs, Total	5.06	J	ug/kg	31.8	2.82	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	82		30-150	A
Decachlorobiphenyl	99		30-150	A
2,4,5,6-Tetrachloro-m-xylene	87		30-150	B
Decachlorobiphenyl	95		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 07 Batch: WG1559763-2 WG1559763-3									
Aroclor 1016	75		78		40-140	4		50	A
Aroclor 1260	87		91		40-140	4		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		70		30-150	A
Decachlorobiphenyl	93		97		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		72		30-150	B
Decachlorobiphenyl	84		86		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 09 Batch: WG1560670-2 WG1560670-3									
Aroclor 1016	81		88		40-140	8		50	A
Aroclor 1260	83		94		40-140	12		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		81		30-150	A
Decachlorobiphenyl	85		96		30-150	A
2,4,5,6-Tetrachloro-m-xylene	79		84		30-150	B
Decachlorobiphenyl	83		90		30-150	B

PESTICIDES

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-01
Client ID: GRID AA_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 14:45
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 16:40
Analyst: SDC
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 10/17/21 00:01
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.76	0.345	1	A
Lindane	ND		ug/kg	0.734	0.328	1	A
Alpha-BHC	ND		ug/kg	0.734	0.208	1	A
Beta-BHC	ND		ug/kg	1.76	0.668	1	A
Heptachlor	ND		ug/kg	0.880	0.395	1	A
Aldrin	ND		ug/kg	1.76	0.620	1	A
Heptachlor epoxide	ND		ug/kg	3.30	0.990	1	A
Endrin	ND		ug/kg	0.734	0.301	1	A
Endrin aldehyde	ND		ug/kg	2.20	0.770	1	A
Endrin ketone	ND		ug/kg	1.76	0.453	1	A
Dieldrin	1.10		ug/kg	1.10	0.550	1	A
4,4'-DDE	4.44		ug/kg	1.76	0.407	1	B
4,4'-DDD	ND		ug/kg	1.76	0.628	1	B
4,4'-DDT	22.0		ug/kg	3.30	1.42	1	A
Endosulfan I	ND		ug/kg	1.76	0.416	1	A
Endosulfan II	ND		ug/kg	1.76	0.588	1	A
Endosulfan sulfate	ND		ug/kg	0.734	0.349	1	A
Methoxychlor	ND		ug/kg	3.30	1.03	1	A
Toxaphene	ND		ug/kg	33.0	9.24	1	A
cis-Chlordane	ND		ug/kg	2.20	0.613	1	A
trans-Chlordane	ND		ug/kg	2.20	0.581	1	A
Chlordane	ND		ug/kg	14.7	5.83	1	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-01 Date Collected: 10/15/21 14:45

Client ID: GRID AA_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		30-150	A
Decachlorobiphenyl	108		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		30-150	B
Decachlorobiphenyl	94		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-02
Client ID: GRID AA_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 14:45
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 18:41
Analyst: AR
Percent Solids: 98%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.55	0.303	1	A
Lindane	ND		ug/kg	0.644	0.288	1	A
Alpha-BHC	ND		ug/kg	0.644	0.183	1	A
Beta-BHC	ND		ug/kg	1.55	0.586	1	A
Heptachlor	ND		ug/kg	0.773	0.346	1	A
Aldrin	ND		ug/kg	1.55	0.544	1	A
Heptachlor epoxide	ND		ug/kg	2.90	0.870	1	A
Endrin	ND		ug/kg	0.644	0.264	1	A
Endrin aldehyde	ND		ug/kg	1.93	0.676	1	A
Endrin ketone	ND		ug/kg	1.55	0.398	1	A
Dieldrin	1.05		ug/kg	0.966	0.483	1	B
4,4'-DDE	20.4		ug/kg	1.55	0.358	1	B
4,4'-DDD	ND		ug/kg	1.55	0.551	1	B
4,4'-DDT	32.0		ug/kg	2.90	1.24	1	A
Endosulfan I	ND		ug/kg	1.55	0.365	1	A
Endosulfan II	ND		ug/kg	1.55	0.517	1	A
Endosulfan sulfate	1.06	P	ug/kg	0.644	0.307	1	B
Methoxychlor	ND		ug/kg	2.90	0.902	1	A
Toxaphene	ND		ug/kg	29.0	8.12	1	A
cis-Chlordane	ND		ug/kg	1.93	0.538	1	A
trans-Chlordane	ND		ug/kg	1.93	0.510	1	A
Chlordane	ND		ug/kg	12.9	5.12	1	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-02 Date Collected: 10/15/21 14:45

Client ID: GRID AA_18-24 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	86		30-150	A
Decachlorobiphenyl	91		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	95		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-03
Client ID: GRID AB_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 12:06
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 16:51
Analyst: SDC
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 10/17/21 00:01
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.66	0.326	1	A
Lindane	ND		ug/kg	0.693	0.310	1	A
Alpha-BHC	ND		ug/kg	0.693	0.197	1	A
Beta-BHC	ND		ug/kg	1.66	0.631	1	A
Heptachlor	ND		ug/kg	0.832	0.373	1	A
Aldrin	ND		ug/kg	1.66	0.586	1	A
Heptachlor epoxide	ND		ug/kg	3.12	0.936	1	A
Endrin	ND		ug/kg	0.693	0.284	1	A
Endrin aldehyde	ND		ug/kg	2.08	0.728	1	A
Endrin ketone	ND		ug/kg	1.66	0.428	1	A
Dieldrin	10.5	IP	ug/kg	1.04	0.520	1	B
4,4'-DDE	103		ug/kg	1.66	0.385	1	A
4,4'-DDD	4.89		ug/kg	1.66	0.593	1	B
4,4'-DDT	183	E	ug/kg	3.12	1.34	1	A
Endosulfan I	ND		ug/kg	1.66	0.393	1	A
Endosulfan II	ND		ug/kg	1.66	0.556	1	A
Endosulfan sulfate	ND		ug/kg	0.693	0.330	1	A
Methoxychlor	ND		ug/kg	3.12	0.970	1	A
Toxaphene	ND		ug/kg	31.2	8.73	1	A
cis-Chlordane	6.48	IP	ug/kg	2.08	0.579	1	B
trans-Chlordane	7.15		ug/kg	2.08	0.549	1	A
Chlordane	ND		ug/kg	13.9	5.51	1	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-03 Date Collected: 10/15/21 12:06

Client ID: GRID AB_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		30-150	A
Decachlorobiphenyl	132		30-150	A
2,4,5,6-Tetrachloro-m-xylene	81		30-150	B
Decachlorobiphenyl	105		30-150	B

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-03 D
Client ID: GRID AB_0-2
Sample Location: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/21/21 15:33
Analyst: AR
Percent Solids: 93%

Date Collected: 10/15/21 12:06
Date Received: 10/15/21
Field Prep: Not Specified

Extraction Method: EPA 3546
Extraction Date: 10/17/21 00:01
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDT	189		ug/kg	6.24	2.68	2	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-04
Client ID: GRID AB_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 12:06
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 18:54
Analyst: AR
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.65	0.323	1	A
Lindane	ND		ug/kg	0.688	0.307	1	A
Alpha-BHC	ND		ug/kg	0.688	0.195	1	A
Beta-BHC	ND		ug/kg	1.65	0.626	1	A
Heptachlor	ND		ug/kg	0.825	0.370	1	A
Aldrin	ND		ug/kg	1.65	0.581	1	A
Heptachlor epoxide	ND		ug/kg	3.09	0.928	1	B
Endrin	ND		ug/kg	0.688	0.282	1	A
Endrin aldehyde	ND		ug/kg	2.06	0.722	1	A
Endrin ketone	ND		ug/kg	1.65	0.425	1	A
Dieldrin	1.43		ug/kg	1.03	0.516	1	A
4,4'-DDE	19.7		ug/kg	1.65	0.382	1	B
4,4'-DDD	ND		ug/kg	1.65	0.589	1	A
4,4'-DDT	28.9		ug/kg	3.09	1.33	1	A
Endosulfan I	ND		ug/kg	1.65	0.390	1	A
Endosulfan II	ND		ug/kg	1.65	0.551	1	A
Endosulfan sulfate	ND		ug/kg	0.688	0.327	1	A
Methoxychlor	ND		ug/kg	3.09	0.963	1	A
Toxaphene	ND		ug/kg	30.9	8.66	1	A
cis-Chlordane	1.30	JP	ug/kg	2.06	0.575	1	A
trans-Chlordane	ND		ug/kg	2.06	0.545	1	A
Chlordane	ND		ug/kg	13.8	5.47	1	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-04 Date Collected: 10/15/21 12:06

Client ID: GRID AB_18-24 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		30-150	A
Decachlorobiphenyl	78		30-150	A
2,4,5,6-Tetrachloro-m-xylene	56		30-150	B
Decachlorobiphenyl	74		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-05
Client ID: GRID AC_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 11:24
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 17:02
Analyst: SDC
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 10/17/21 00:01
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.63	0.320	1	A
Lindane	ND		ug/kg	0.681	0.304	1	A
Alpha-BHC	ND		ug/kg	0.681	0.193	1	A
Beta-BHC	ND		ug/kg	1.63	0.620	1	A
Heptachlor	ND		ug/kg	0.817	0.366	1	A
Aldrin	ND		ug/kg	1.63	0.576	1	A
Heptachlor epoxide	ND		ug/kg	3.06	0.920	1	A
Endrin	ND		ug/kg	0.681	0.279	1	A
Endrin aldehyde	ND		ug/kg	2.04	0.715	1	A
Endrin ketone	ND		ug/kg	1.63	0.421	1	A
Dieldrin	4.93		ug/kg	1.02	0.511	1	A
4,4'-DDE	83.8		ug/kg	1.63	0.378	1	A
4,4'-DDD	1.39	J	ug/kg	1.63	0.583	1	B
4,4'-DDT	112		ug/kg	3.06	1.31	1	A
Endosulfan I	ND		ug/kg	1.63	0.386	1	A
Endosulfan II	ND		ug/kg	1.63	0.546	1	A
Endosulfan sulfate	ND		ug/kg	0.681	0.324	1	A
Methoxychlor	ND		ug/kg	3.06	0.954	1	A
Toxaphene	ND		ug/kg	30.6	8.58	1	A
cis-Chlordane	ND		ug/kg	2.04	0.570	1	A
trans-Chlordane	ND		ug/kg	2.04	0.540	1	A
Chlordane	ND		ug/kg	13.6	5.42	1	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-05 Date Collected: 10/15/21 11:24

Client ID: GRID AC_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	81		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		30-150	B
Decachlorobiphenyl	75		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-06
Client ID: GRID AC_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 11:24
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 16:43
Analyst: AR
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 10/27/21 09:13
Cleanup Method: EPA 3620B
Cleanup Date: 10/28/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.98	0.387	1	A
Lindane	ND		ug/kg	0.824	0.368	1	A
Alpha-BHC	ND		ug/kg	0.824	0.234	1	A
Beta-BHC	ND		ug/kg	1.98	0.750	1	A
Heptachlor	ND		ug/kg	0.989	0.443	1	A
Aldrin	ND		ug/kg	1.98	0.696	1	A
Heptachlor epoxide	ND		ug/kg	3.71	1.11	1	A
Endrin	ND		ug/kg	0.824	0.338	1	A
Endrin aldehyde	ND		ug/kg	2.47	0.865	1	A
Endrin ketone	ND		ug/kg	1.98	0.509	1	A
Dieldrin	ND		ug/kg	1.24	0.618	1	A
4,4'-DDE	5.62		ug/kg	1.98	0.457	1	B
4,4'-DDD	ND		ug/kg	1.98	0.705	1	A
4,4'-DDT	9.06		ug/kg	3.71	1.59	1	A
Endosulfan I	ND		ug/kg	1.98	0.467	1	A
Endosulfan II	ND		ug/kg	1.98	0.661	1	A
Endosulfan sulfate	ND		ug/kg	0.824	0.392	1	A
Methoxychlor	ND		ug/kg	3.71	1.15	1	A
Toxaphene	ND		ug/kg	37.1	10.4	1	A
cis-Chlordane	ND		ug/kg	2.47	0.689	1	A
trans-Chlordane	ND		ug/kg	2.47	0.652	1	A
Chlordane	ND		ug/kg	16.5	6.55	1	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-06 Date Collected: 10/15/21 11:24

Client ID: GRID AC_18-24 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		30-150	A
Decachlorobiphenyl	76		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		30-150	B
Decachlorobiphenyl	92		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-07
Client ID: GRID AD_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 09:05
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 17:13
Analyst: SDC
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 10/17/21 00:01
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.64	0.322	1	A
Lindane	ND		ug/kg	0.684	0.306	1	A
Alpha-BHC	ND		ug/kg	0.684	0.194	1	A
Beta-BHC	ND		ug/kg	1.64	0.622	1	A
Heptachlor	ND		ug/kg	0.821	0.368	1	A
Aldrin	ND		ug/kg	1.64	0.578	1	A
Heptachlor epoxide	ND		ug/kg	3.08	0.923	1	A
Endrin	ND		ug/kg	0.684	0.280	1	A
Endrin aldehyde	ND		ug/kg	2.05	0.718	1	A
Endrin ketone	ND		ug/kg	1.64	0.423	1	A
Dieldrin	15.3		ug/kg	1.03	0.513	1	A
4,4'-DDE	206	E	ug/kg	1.64	0.380	1	B
4,4'-DDD	6.05		ug/kg	1.64	0.586	1	B
4,4'-DDT	293	E	ug/kg	3.08	1.32	1	A
Endosulfan I	ND		ug/kg	1.64	0.388	1	A
Endosulfan II	ND		ug/kg	1.64	0.549	1	A
Endosulfan sulfate	ND		ug/kg	0.684	0.326	1	A
Methoxychlor	ND		ug/kg	3.08	0.958	1	A
Toxaphene	ND		ug/kg	30.8	8.62	1	A
cis-Chlordane	12.2		ug/kg	2.05	0.572	1	A
trans-Chlordane	11.9		ug/kg	2.05	0.542	1	B
Chlordane	76.6		ug/kg	13.7	5.44	1	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-07 Date Collected: 10/15/21 09:05

Client ID: GRID AD_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		30-150	A
Decachlorobiphenyl	105		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		30-150	B
Decachlorobiphenyl	92		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-07
Client ID: GRID AD_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 09:05
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 10/22/21 10:52
Analyst: AR
Percent Solids: 92%
Methylation Date: 10/21/21 21:00

Extraction Method: EPA 8151A
Extraction Date: 10/21/21 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
2,4-D	ND		ug/kg	178	11.2	1	A
2,4,5-T	ND		ug/kg	178	5.53	1	A
2,4,5-TP (Silvex)	ND		ug/kg	178	4.74	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	81		30-150	A
DCAA	86		30-150	B

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-07 D
Client ID: GRID AD_0-2
Sample Location: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/21/21 15:44
Analyst: AR
Percent Solids: 92%

Date Collected: 10/15/21 09:05
Date Received: 10/15/21
Field Prep: Not Specified

Extraction Method: EPA 3546
Extraction Date: 10/17/21 00:01
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDE	243		ug/kg	8.21	1.90	5	A
4,4'-DDT	322		ug/kg	15.4	6.60	5	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-08
Client ID: GRID AD_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 09:05
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 19:06
Analyst: AR
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.72	0.337	1	A
Lindane	ND		ug/kg	0.717	0.320	1	A
Alpha-BHC	ND		ug/kg	0.717	0.204	1	A
Beta-BHC	ND		ug/kg	1.72	0.652	1	A
Heptachlor	0.411	JIP	ug/kg	0.860	0.386	1	B
Aldrin	ND		ug/kg	1.72	0.606	1	A
Heptachlor epoxide	ND		ug/kg	3.22	0.968	1	B
Endrin	ND		ug/kg	0.717	0.294	1	A
Endrin aldehyde	ND		ug/kg	2.15	0.752	1	A
Endrin ketone	ND		ug/kg	1.72	0.443	1	A
Dieldrin	5.78		ug/kg	1.08	0.538	1	B
4,4'-DDE	56.4		ug/kg	1.72	0.398	1	B
4,4'-DDD	16.4		ug/kg	1.72	0.613	1	B
4,4'-DDT	77.8		ug/kg	3.22	1.38	1	A
Endosulfan I	ND		ug/kg	1.72	0.406	1	A
Endosulfan II	1.14	J	ug/kg	1.72	0.575	1	A
Endosulfan sulfate	1.61	IP	ug/kg	0.717	0.341	1	A
Methoxychlor	ND		ug/kg	3.22	1.00	1	A
Toxaphene	ND		ug/kg	32.2	9.03	1	A
cis-Chlordane	4.97	IP	ug/kg	2.15	0.599	1	B
trans-Chlordane	7.20		ug/kg	2.15	0.568	1	A
Chlordane	46.9		ug/kg	14.3	5.70	1	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-08 Date Collected: 10/15/21 09:05

Client ID: GRID AD_18-24 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	80		30-150	A
Decachlorobiphenyl	84		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	80		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-09
Client ID: GRID L_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 14:01
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 17:24
Analyst: SDC
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 10/17/21 00:01
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.64	0.321	1	A
Lindane	ND		ug/kg	0.684	0.306	1	A
Alpha-BHC	ND		ug/kg	0.684	0.194	1	A
Beta-BHC	ND		ug/kg	1.64	0.622	1	A
Heptachlor	ND		ug/kg	0.820	0.368	1	A
Aldrin	ND		ug/kg	1.64	0.578	1	A
Heptachlor epoxide	ND		ug/kg	3.08	0.923	1	A
Endrin	ND		ug/kg	0.684	0.280	1	A
Endrin aldehyde	ND		ug/kg	2.05	0.718	1	A
Endrin ketone	ND		ug/kg	1.64	0.422	1	A
Dieldrin	21.0		ug/kg	1.02	0.513	1	A
4,4'-DDE	362	E	ug/kg	1.64	0.379	1	A
4,4'-DDD	7.10		ug/kg	1.64	0.585	1	B
4,4'-DDT	689	E	ug/kg	3.08	1.32	1	A
Endosulfan I	ND		ug/kg	1.64	0.388	1	A
Endosulfan II	9.51		ug/kg	1.64	0.548	1	A
Endosulfan sulfate	ND		ug/kg	0.684	0.325	1	A
Methoxychlor	ND		ug/kg	3.08	0.957	1	A
Toxaphene	ND		ug/kg	30.8	8.61	1	A
cis-Chlordane	ND		ug/kg	2.05	0.572	1	A
trans-Chlordane	ND		ug/kg	2.05	0.541	1	A
Chlordane	ND		ug/kg	13.7	5.44	1	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-09 Date Collected: 10/15/21 14:01

Client ID: GRID L_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	105		30-150	A
2,4,5,6-Tetrachloro-m-xylene	89		30-150	B
Decachlorobiphenyl	105		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-09
Client ID: GRID L_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 14:01
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8151A
Analytical Date: 10/22/21 11:10
Analyst: AR
Percent Solids: 93%
Methylation Date: 10/21/21 21:00

Extraction Method: EPA 8151A
Extraction Date: 10/21/21 00:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
2,4-D	ND		ug/kg	178	11.2	1	A
2,4,5-T	ND		ug/kg	178	5.52	1	A
2,4,5-TP (Silvex)	ND		ug/kg	178	4.73	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	82		30-150	A
DCAA	82		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-09 D
Client ID: GRID L_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 14:01
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/21/21 15:55
Analyst: AR
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 10/17/21 00:01
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDE	396		ug/kg	16.4	3.79	10	A
4,4'-DDT	735		ug/kg	30.8	13.2	10	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-10
Client ID: GRID L_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 14:01
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 19:19
Analyst: AR
Percent Solids: 93%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.64	0.322	1	A
Lindane	ND		ug/kg	0.685	0.306	1	A
Alpha-BHC	ND		ug/kg	0.685	0.194	1	A
Beta-BHC	ND		ug/kg	1.64	0.623	1	A
Heptachlor	ND		ug/kg	0.822	0.368	1	A
Aldrin	ND		ug/kg	1.64	0.579	1	A
Heptachlor epoxide	ND		ug/kg	3.08	0.925	1	A
Endrin	ND		ug/kg	0.685	0.281	1	A
Endrin aldehyde	ND		ug/kg	2.06	0.719	1	A
Endrin ketone	ND		ug/kg	1.64	0.423	1	A
Dieldrin	0.696	J	ug/kg	1.03	0.514	1	A
4,4'-DDE	11.9		ug/kg	1.64	0.380	1	A
4,4'-DDD	ND		ug/kg	1.64	0.586	1	A
4,4'-DDT	23.0		ug/kg	3.08	1.32	1	A
Endosulfan I	ND		ug/kg	1.64	0.388	1	A
Endosulfan II	ND		ug/kg	1.64	0.549	1	A
Endosulfan sulfate	0.760	IP	ug/kg	0.685	0.326	1	A
Methoxychlor	ND		ug/kg	3.08	0.959	1	A
Toxaphene	ND		ug/kg	30.8	8.63	1	A
cis-Chlordane	ND		ug/kg	2.06	0.573	1	A
trans-Chlordane	ND		ug/kg	2.06	0.542	1	A
Chlordane	ND		ug/kg	13.7	5.45	1	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-10 Date Collected: 10/15/21 14:01

Client ID: GRID L_18-24 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	85		30-150	A
Decachlorobiphenyl	91		30-150	A
2,4,5,6-Tetrachloro-m-xylene	68		30-150	B
Decachlorobiphenyl	90		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-11
Client ID: GRID M_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 13:30
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 17:35
Analyst: SDC
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 10/17/21 00:01
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.88	0.368	1	A
Lindane	ND		ug/kg	0.784	0.350	1	A
Alpha-BHC	ND		ug/kg	0.784	0.223	1	A
Beta-BHC	ND		ug/kg	1.88	0.713	1	A
Heptachlor	ND		ug/kg	0.941	0.422	1	A
Aldrin	ND		ug/kg	1.88	0.662	1	A
Heptachlor epoxide	ND		ug/kg	3.53	1.06	1	A
Endrin	ND		ug/kg	0.784	0.321	1	A
Endrin aldehyde	ND		ug/kg	2.35	0.823	1	A
Endrin ketone	ND		ug/kg	1.88	0.484	1	A
Dieldrin	20.4		ug/kg	1.18	0.588	1	A
4,4'-DDE	326	E	ug/kg	1.88	0.435	1	A
4,4'-DDD	5.03		ug/kg	1.88	0.671	1	B
4,4'-DDT	595	E	ug/kg	3.53	1.51	1	A
Endosulfan I	ND		ug/kg	1.88	0.444	1	A
Endosulfan II	11.7		ug/kg	1.88	0.629	1	A
Endosulfan sulfate	ND		ug/kg	0.784	0.373	1	A
Methoxychlor	ND		ug/kg	3.53	1.10	1	A
Toxaphene	ND		ug/kg	35.3	9.88	1	A
cis-Chlordane	ND		ug/kg	2.35	0.655	1	A
trans-Chlordane	ND		ug/kg	2.35	0.621	1	A
Chlordane	ND		ug/kg	15.7	6.23	1	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-11 Date Collected: 10/15/21 13:30

Client ID: GRID M_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	83		30-150	A
Decachlorobiphenyl	109		30-150	A
2,4,5,6-Tetrachloro-m-xylene	92		30-150	B
Decachlorobiphenyl	94		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-11 D
Client ID: GRID M_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 13:30
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/21/21 16:06
Analyst: AR
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 10/17/21 00:01
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDE	358		ug/kg	18.8	4.35	10	A
4,4'-DDT	641		ug/kg	35.3	15.1	10	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-12
Client ID: GRID M_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 13:30
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 19:31
Analyst: AR
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.64	0.322	1	A
Lindane	ND		ug/kg	0.685	0.306	1	A
Alpha-BHC	ND		ug/kg	0.685	0.195	1	A
Beta-BHC	ND		ug/kg	1.64	0.624	1	A
Heptachlor	ND		ug/kg	0.822	0.369	1	A
Aldrin	ND		ug/kg	1.64	0.579	1	A
Heptachlor epoxide	ND		ug/kg	3.08	0.925	1	A
Endrin	ND		ug/kg	0.685	0.281	1	A
Endrin aldehyde	ND		ug/kg	2.06	0.719	1	A
Endrin ketone	ND		ug/kg	1.64	0.423	1	A
Dieldrin	3.40		ug/kg	1.03	0.514	1	A
4,4'-DDE	65.7		ug/kg	1.64	0.380	1	B
4,4'-DDD	0.952	J	ug/kg	1.64	0.586	1	B
4,4'-DDT	123		ug/kg	3.08	1.32	1	A
Endosulfan I	ND		ug/kg	1.64	0.388	1	A
Endosulfan II	ND		ug/kg	1.64	0.550	1	A
Endosulfan sulfate	6.33		ug/kg	0.685	0.326	1	A
Methoxychlor	1.28	JIP	ug/kg	3.08	0.959	1	B
Toxaphene	ND		ug/kg	30.8	8.63	1	A
cis-Chlordane	ND		ug/kg	2.06	0.573	1	A
trans-Chlordane	ND		ug/kg	2.06	0.543	1	A
Chlordane	ND		ug/kg	13.7	5.45	1	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-12 Date Collected: 10/15/21 13:30

Client ID: GRID M_18-24 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	84		30-150	A
Decachlorobiphenyl	92		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		30-150	B
Decachlorobiphenyl	90		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-13
Client ID: GRID N_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 10:20
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 17:46
Analyst: SDC
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 10/17/21 00:01
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.74	0.340	1	A
Lindane	ND		ug/kg	0.723	0.323	1	A
Alpha-BHC	ND		ug/kg	0.723	0.205	1	A
Beta-BHC	ND		ug/kg	1.74	0.658	1	A
Heptachlor	ND		ug/kg	0.868	0.389	1	A
Aldrin	ND		ug/kg	1.74	0.611	1	A
Heptachlor epoxide	ND		ug/kg	3.25	0.976	1	A
Endrin	ND		ug/kg	0.723	0.296	1	A
Endrin aldehyde	ND		ug/kg	2.17	0.759	1	A
Endrin ketone	ND		ug/kg	1.74	0.447	1	A
Dieldrin	17.0		ug/kg	1.08	0.542	1	A
4,4'-DDE	357	E	ug/kg	1.74	0.401	1	A
4,4'-DDD	6.33		ug/kg	1.74	0.619	1	B
4,4'-DDT	579	E	ug/kg	3.25	1.40	1	A
Endosulfan I	ND		ug/kg	1.74	0.410	1	A
Endosulfan II	8.60		ug/kg	1.74	0.580	1	A
Endosulfan sulfate	ND		ug/kg	0.723	0.344	1	A
Methoxychlor	ND		ug/kg	3.25	1.01	1	A
Toxaphene	ND		ug/kg	32.5	9.11	1	A
cis-Chlordane	0.773	JIP	ug/kg	2.17	0.604	1	B
trans-Chlordane	1.18	JIP	ug/kg	2.17	0.573	1	A
Chlordane	ND		ug/kg	14.5	5.75	1	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-13 Date Collected: 10/15/21 10:20

Client ID: GRID N_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		30-150	A
Decachlorobiphenyl	106		30-150	A
2,4,5,6-Tetrachloro-m-xylene	81		30-150	B
Decachlorobiphenyl	98		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-13 D
Client ID: GRID N_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 10:20
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/21/21 16:18
Analyst: AR
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 10/17/21 00:01
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDE	386		ug/kg	17.4	4.01	10	A
4,4'-DDT	618		ug/kg	32.5	14.0	10	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-14
Client ID: GRID N_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 10:20
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 19:44
Analyst: AR
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.81	0.354	1	A
Lindane	ND		ug/kg	0.753	0.337	1	A
Alpha-BHC	ND		ug/kg	0.753	0.214	1	A
Beta-BHC	ND		ug/kg	1.81	0.685	1	A
Heptachlor	ND		ug/kg	0.904	0.405	1	A
Aldrin	ND		ug/kg	1.81	0.636	1	A
Heptachlor epoxide	ND		ug/kg	3.39	1.02	1	A
Endrin	ND		ug/kg	0.753	0.309	1	A
Endrin aldehyde	ND		ug/kg	2.26	0.791	1	A
Endrin ketone	ND		ug/kg	1.81	0.465	1	A
Dieldrin	0.958	J	ug/kg	1.13	0.565	1	A
4,4'-DDE	18.9		ug/kg	1.81	0.418	1	B
4,4'-DDD	ND		ug/kg	1.81	0.644	1	B
4,4'-DDT	34.1		ug/kg	3.39	1.45	1	A
Endosulfan I	ND		ug/kg	1.81	0.427	1	B
Endosulfan II	ND		ug/kg	1.81	0.604	1	B
Endosulfan sulfate	0.837	IP	ug/kg	0.753	0.358	1	A
Methoxychlor	ND		ug/kg	3.39	1.05	1	A
Toxaphene	ND		ug/kg	33.9	9.49	1	A
cis-Chlordane	ND		ug/kg	2.26	0.630	1	A
trans-Chlordane	ND		ug/kg	2.26	0.596	1	A
Chlordane	ND		ug/kg	15.1	5.99	1	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-14 Date Collected: 10/15/21 10:20

Client ID: GRID N_18-24 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	62		30-150	A
Decachlorobiphenyl	66		30-150	A
2,4,5,6-Tetrachloro-m-xylene	52		30-150	B
Decachlorobiphenyl	65		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-15
Client ID: GRID O_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 09:50
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 17:57
Analyst: SDC
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 10/17/21 00:01
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.77	0.346	1	A
Lindane	ND		ug/kg	0.737	0.330	1	A
Alpha-BHC	ND		ug/kg	0.737	0.209	1	A
Beta-BHC	ND		ug/kg	1.77	0.671	1	A
Heptachlor	ND		ug/kg	0.885	0.397	1	A
Aldrin	ND		ug/kg	1.77	0.623	1	A
Heptachlor epoxide	ND		ug/kg	3.32	0.995	1	A
Endrin	ND		ug/kg	0.737	0.302	1	A
Endrin aldehyde	ND		ug/kg	2.21	0.774	1	A
Endrin ketone	ND		ug/kg	1.77	0.456	1	A
Dieldrin	42.8		ug/kg	1.10	0.553	1	A
4,4'-DDE	693	E	ug/kg	1.77	0.409	1	A
4,4'-DDD	15.3		ug/kg	1.77	0.631	1	B
4,4'-DDT	1430	E	ug/kg	3.32	1.42	1	A
Endosulfan I	ND		ug/kg	1.77	0.418	1	A
Endosulfan II	15.0		ug/kg	1.77	0.591	1	A
Endosulfan sulfate	ND		ug/kg	0.737	0.351	1	A
Methoxychlor	ND		ug/kg	3.32	1.03	1	A
Toxaphene	ND		ug/kg	33.2	9.29	1	A
cis-Chlordane	ND		ug/kg	2.21	0.616	1	A
trans-Chlordane	1.08	JIP	ug/kg	2.21	0.584	1	A
Chlordane	ND		ug/kg	14.7	5.86	1	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-15 Date Collected: 10/15/21 09:50

Client ID: GRID O_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		30-150	A
Decachlorobiphenyl	103		30-150	A
2,4,5,6-Tetrachloro-m-xylene	82		30-150	B
Decachlorobiphenyl	86		30-150	B

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-15 D
Client ID: GRID O_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 09:50
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/21/21 16:29
Analyst: AR
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 10/17/21 00:01
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDE	758		ug/kg	35.4	8.18	20	A
4,4'-DDT	1550		ug/kg	66.3	28.4	20	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-16
Client ID: GRID O_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 09:50
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 19:57
Analyst: AR
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.90	0.373	1	A
Lindane	ND		ug/kg	0.793	0.354	1	A
Alpha-BHC	ND		ug/kg	0.793	0.225	1	A
Beta-BHC	ND		ug/kg	1.90	0.721	1	A
Heptachlor	ND		ug/kg	0.951	0.426	1	A
Aldrin	ND		ug/kg	1.90	0.670	1	A
Heptachlor epoxide	ND		ug/kg	3.57	1.07	1	A
Endrin	ND		ug/kg	0.793	0.325	1	A
Endrin aldehyde	ND		ug/kg	2.38	0.832	1	A
Endrin ketone	ND		ug/kg	1.90	0.490	1	A
Dieldrin	6.87		ug/kg	1.19	0.595	1	B
4,4'-DDE	71.2	IP	ug/kg	1.90	0.440	1	A
4,4'-DDD	1.17	JIP	ug/kg	1.90	0.679	1	A
4,4'-DDT	212	PE	ug/kg	3.57	1.53	1	B
Endosulfan I	0.493	JIP	ug/kg	1.90	0.450	1	A
Endosulfan II	1.97		ug/kg	1.90	0.636	1	B
Endosulfan sulfate	8.74		ug/kg	0.793	0.377	1	B
Methoxychlor	1.78	JIP	ug/kg	3.57	1.11	1	B
Toxaphene	ND		ug/kg	35.7	9.99	1	A
cis-Chlordane	ND		ug/kg	2.38	0.663	1	A
trans-Chlordane	ND		ug/kg	2.38	0.628	1	A
Chlordane	ND		ug/kg	15.8	6.30	1	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-16 Date Collected: 10/15/21 09:50

Client ID: GRID O_18-24 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	45		30-150	A
Decachlorobiphenyl	48		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	77		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-16 D
Client ID: GRID O_18-24
Sample Location: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/29/21 12:18
Analyst: AR
Percent Solids: 83%

Date Collected: 10/15/21 09:50
Date Received: 10/15/21
Field Prep: Not Specified

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDT	254		ug/kg	7.14	3.06	2	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-17
Client ID: GRID Z_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 15:27
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/18/21 19:08
Analyst: JAW
Percent Solids: 96%

Extraction Method: EPA 3546
Extraction Date: 10/17/21 00:01
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.67	0.326	1	A
Lindane	ND		ug/kg	0.695	0.310	1	A
Alpha-BHC	ND		ug/kg	0.695	0.197	1	A
Beta-BHC	ND		ug/kg	1.67	0.632	1	A
Heptachlor	ND		ug/kg	0.834	0.374	1	A
Aldrin	ND		ug/kg	1.67	0.587	1	A
Heptachlor epoxide	ND		ug/kg	3.13	0.938	1	A
Endrin	ND		ug/kg	0.695	0.285	1	A
Endrin aldehyde	ND		ug/kg	2.08	0.730	1	A
Endrin ketone	ND		ug/kg	1.67	0.429	1	A
Dieldrin	3.62		ug/kg	1.04	0.521	1	B
4,4'-DDE	47.2		ug/kg	1.67	0.386	1	B
4,4'-DDD	3.36		ug/kg	1.67	0.595	1	B
4,4'-DDT	118		ug/kg	3.13	1.34	1	B
Endosulfan I	ND		ug/kg	1.67	0.394	1	A
Endosulfan II	ND		ug/kg	1.67	0.557	1	A
Endosulfan sulfate	ND		ug/kg	0.695	0.331	1	A
Methoxychlor	ND		ug/kg	3.13	0.973	1	A
Toxaphene	ND		ug/kg	31.3	8.75	1	A
cis-Chlordane	ND		ug/kg	2.08	0.581	1	A
trans-Chlordane	ND		ug/kg	2.08	0.550	1	A
Chlordane	ND		ug/kg	13.9	5.52	1	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-17 Date Collected: 10/15/21 15:27

Client ID: GRID Z_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	59		30-150	A
Decachlorobiphenyl	82		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	78		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-18
Client ID: GRID Z_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 15:27
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/28/21 20:09
Analyst: AR
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/kg	1.71	0.334	1	A
Lindane	ND		ug/kg	0.711	0.318	1	A
Alpha-BHC	ND		ug/kg	0.711	0.202	1	A
Beta-BHC	ND		ug/kg	1.71	0.647	1	A
Heptachlor	ND		ug/kg	0.853	0.382	1	A
Aldrin	ND		ug/kg	1.71	0.601	1	A
Heptachlor epoxide	ND		ug/kg	3.20	0.960	1	A
Endrin	ND		ug/kg	0.711	0.292	1	A
Endrin aldehyde	ND		ug/kg	2.13	0.746	1	A
Endrin ketone	ND		ug/kg	1.71	0.439	1	A
Dieldrin	5.61		ug/kg	1.07	0.533	1	A
4,4'-DDE	59.5		ug/kg	1.71	0.394	1	A
4,4'-DDD	4.39		ug/kg	1.71	0.609	1	B
4,4'-DDT	240	E	ug/kg	3.20	1.37	1	A
Endosulfan I	ND		ug/kg	1.71	0.403	1	A
Endosulfan II	ND		ug/kg	1.71	0.570	1	A
Endosulfan sulfate	6.86		ug/kg	0.711	0.338	1	A
Methoxychlor	ND		ug/kg	3.20	0.995	1	A
Toxaphene	ND		ug/kg	32.0	8.96	1	A
cis-Chlordane	ND		ug/kg	2.13	0.594	1	A
trans-Chlordane	ND		ug/kg	2.13	0.563	1	A
Chlordane	ND		ug/kg	14.2	5.65	1	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-18 Date Collected: 10/15/21 15:27

Client ID: GRID Z_18-24 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		30-150	A
Decachlorobiphenyl	82		30-150	A
2,4,5,6-Tetrachloro-m-xylene	60		30-150	B
Decachlorobiphenyl	78		30-150	B

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-18 D
Client ID: GRID Z_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 15:27
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8081B
Analytical Date: 10/29/21 13:09
Analyst: AR
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/27/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
4,4'-DDT	255		ug/kg	16.0	6.86	5	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/18/21 11:48
Analyst: JAW

Extraction Method: EPA 3546
Extraction Date: 10/17/21 00:01
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01,03,05,07,09,11,13,15,17 Batch: WG1559594-1						
Delta-BHC	ND		ug/kg	1.51	0.295	A
Lindane	ND		ug/kg	0.628	0.281	A
Alpha-BHC	ND		ug/kg	0.628	0.178	A
Beta-BHC	ND		ug/kg	1.51	0.572	A
Heptachlor	ND		ug/kg	0.754	0.338	A
Aldrin	ND		ug/kg	1.51	0.531	A
Heptachlor epoxide	ND		ug/kg	2.83	0.848	A
Endrin	ND		ug/kg	0.628	0.258	A
Endrin aldehyde	ND		ug/kg	1.88	0.660	A
Endrin ketone	ND		ug/kg	1.51	0.388	A
Dieldrin	ND		ug/kg	0.943	0.471	A
4,4'-DDE	ND		ug/kg	1.51	0.349	A
4,4'-DDD	ND		ug/kg	1.51	0.538	A
4,4'-DDT	ND		ug/kg	2.83	1.21	A
Endosulfan I	ND		ug/kg	1.51	0.356	A
Endosulfan II	ND		ug/kg	1.51	0.504	A
Endosulfan sulfate	ND		ug/kg	0.628	0.299	A
Methoxychlor	ND		ug/kg	2.83	0.880	A
Toxaphene	ND		ug/kg	28.3	7.92	A
cis-Chlordane	ND		ug/kg	1.88	0.525	A
trans-Chlordane	ND		ug/kg	1.88	0.498	A
Chlordane	ND		ug/kg	12.6	5.00	A

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/18/21 11:48
Analyst: JAW

Extraction Method: EPA 3546
Extraction Date: 10/17/21 00:01
Cleanup Method: EPA 3620B
Cleanup Date: 10/17/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01,03,05,07,09,11,13,15,17 Batch: WG1559594-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	111		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	109		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8151A
Analytical Date: 10/22/21 08:07
Analyst: AR

Extraction Method: EPA 8151A
Extraction Date: 10/21/21 00:39

Methylation Date: 10/21/21 21:00

Parameter	Result	Qualifier	Units	RL	MDL	Column
Chlorinated Herbicides by GC - Westborough Lab for sample(s): 07,09 Batch: WG1561226-1						
2,4-D	ND		ug/kg	164	10.3	A
2,4,5-T	ND		ug/kg	164	5.08	A
2,4,5-TP (Silvex)	ND		ug/kg	164	4.36	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
DCAA	72		30-150	A
DCAA	62		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/26/21 08:50
Analyst: SDC

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/26/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 02,04,08,10,12,14,16,18 Batch: WG1562985-1						
Delta-BHC	ND		ug/kg	1.52	0.297	A
Lindane	ND		ug/kg	0.632	0.282	A
Alpha-BHC	ND		ug/kg	0.632	0.179	A
Beta-BHC	ND		ug/kg	1.52	0.575	A
Heptachlor	ND		ug/kg	0.758	0.340	A
Aldrin	ND		ug/kg	1.52	0.534	A
Heptachlor epoxide	ND		ug/kg	2.84	0.853	A
Endrin	ND		ug/kg	0.632	0.259	A
Endrin aldehyde	ND		ug/kg	1.90	0.663	A
Endrin ketone	ND		ug/kg	1.52	0.390	A
Dieldrin	ND		ug/kg	0.948	0.474	A
4,4'-DDE	ND		ug/kg	1.52	0.351	A
4,4'-DDD	ND		ug/kg	1.52	0.541	A
4,4'-DDT	ND		ug/kg	2.84	1.22	A
Endosulfan I	ND		ug/kg	1.52	0.358	A
Endosulfan II	ND		ug/kg	1.52	0.507	A
Endosulfan sulfate	ND		ug/kg	0.632	0.301	A
Methoxychlor	ND		ug/kg	2.84	0.884	A
Toxaphene	ND		ug/kg	28.4	7.96	A
cis-Chlordane	ND		ug/kg	1.90	0.528	A
trans-Chlordane	ND		ug/kg	1.90	0.500	A
Chlordane	ND		ug/kg	12.6	5.02	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/26/21 08:50
Analyst: SDC

Extraction Method: EPA 3546
Extraction Date: 10/26/21 01:02
Cleanup Method: EPA 3620B
Cleanup Date: 10/26/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 02,04,08,10,12,14,16,18 Batch: WG1562985-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		30-150	A
Decachlorobiphenyl	90		30-150	A
2,4,5,6-Tetrachloro-m-xylene	83		30-150	B
Decachlorobiphenyl	106		30-150	B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/28/21 16:10
Analyst: AR

Extraction Method: EPA 3546
Extraction Date: 10/27/21 09:13
Cleanup Method: EPA 3620B
Cleanup Date: 10/28/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 06 Batch: WG1563729-1						
Delta-BHC	ND		ug/kg	1.57	0.307	A
Lindane	ND		ug/kg	0.654	0.292	A
Alpha-BHC	ND		ug/kg	0.654	0.186	A
Beta-BHC	ND		ug/kg	1.57	0.595	A
Heptachlor	ND		ug/kg	0.784	0.352	A
Aldrin	ND		ug/kg	1.57	0.552	A
Heptachlor epoxide	ND		ug/kg	2.94	0.882	A
Endrin	ND		ug/kg	0.654	0.268	A
Endrin aldehyde	ND		ug/kg	1.96	0.686	A
Endrin ketone	ND		ug/kg	1.57	0.404	A
Dieldrin	ND		ug/kg	0.980	0.490	A
4,4'-DDE	ND		ug/kg	1.57	0.363	A
4,4'-DDD	ND		ug/kg	1.57	0.559	A
4,4'-DDT	ND		ug/kg	2.94	1.26	A
Endosulfan I	ND		ug/kg	1.57	0.370	A
Endosulfan II	ND		ug/kg	1.57	0.524	A
Endosulfan sulfate	ND		ug/kg	0.654	0.311	A
Methoxychlor	ND		ug/kg	2.94	0.915	A
Toxaphene	ND		ug/kg	29.4	8.24	A
cis-Chlordane	ND		ug/kg	1.96	0.546	A
trans-Chlordane	ND		ug/kg	1.96	0.518	A
Chlordane	ND		ug/kg	13.1	5.20	A

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/28/21 16:10
Analyst: AR

Extraction Method: EPA 3546
Extraction Date: 10/27/21 09:13
Cleanup Method: EPA 3620B
Cleanup Date: 10/28/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 06 Batch: WG1563729-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	72		30-150	A
2,4,5,6-Tetrachloro-m-xylene	67		30-150	B
Decachlorobiphenyl	74		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 Batch: WG1559594-2 WG1559594-3									
Delta-BHC	79		72		30-150	9		30	A
Lindane	85		78		30-150	9		30	A
Alpha-BHC	85		78		30-150	9		30	A
Beta-BHC	89		77		30-150	14		30	A
Heptachlor	95		88		30-150	8		30	A
Aldrin	86		77		30-150	11		30	A
Heptachlor epoxide	88		80		30-150	10		30	A
Endrin	99		91		30-150	8		30	A
Endrin aldehyde	85		75		30-150	13		30	A
Endrin ketone	108		99		30-150	9		30	A
Dieldrin	97		90		30-150	7		30	A
4,4'-DDE	90		82		30-150	9		30	A
4,4'-DDD	101		93		30-150	8		30	A
4,4'-DDT	110		101		30-150	9		30	A
Endosulfan I	87		80		30-150	8		30	A
Endosulfan II	100		91		30-150	9		30	A
Endosulfan sulfate	87		79		30-150	10		30	A
Methoxychlor	111		101		30-150	9		30	A
cis-Chlordane	76		70		30-150	8		30	A
trans-Chlordane	89		82		30-150	8		30	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 Batch: WG1559594-2 WG1559594-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		67		30-150	A
Decachlorobiphenyl	132		121		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		68		30-150	B
Decachlorobiphenyl	125		123		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Chlorinated Herbicides by GC - Westborough Lab Associated sample(s): 07,09 Batch: WG1561226-2 WG1561226-3									
2,4-D	66		66		30-150	0		30	A
2,4,5-T	64		62		30-150	3		30	A
2,4,5-TP (Silvex)	63		61		30-150	3		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
DCAA	70		69		30-150	A
DCAA	66		63		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 02,04,08,10,12,14,16,18 Batch: WG1562985-2 WG1562985-3									
Delta-BHC	78		71		30-150	9		30	A
Lindane	87		80		30-150	8		30	A
Alpha-BHC	89		81		30-150	9		30	A
Beta-BHC	85		82		30-150	4		30	A
Heptachlor	90		83		30-150	8		30	A
Aldrin	83		76		30-150	9		30	A
Heptachlor epoxide	85		70		30-150	19		30	A
Endrin	90		81		30-150	11		30	A
Endrin aldehyde	70		65		30-150	7		30	A
Endrin ketone	92		82		30-150	11		30	A
Dieldrin	92		83		30-150	10		30	A
4,4'-DDE	84		78		30-150	7		30	A
4,4'-DDD	89		79		30-150	12		30	A
4,4'-DDT	94		85		30-150	10		30	A
Endosulfan I	84		78		30-150	7		30	A
Endosulfan II	90		87		30-150	3		30	A
Endosulfan sulfate	77		69		30-150	11		30	A
Methoxychlor	87		77		30-150	12		30	A
cis-Chlordane	78		71		30-150	9		30	A
trans-Chlordane	89		79		30-150	12		30	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 02,04,08,10,12,14,16,18 Batch: WG1562985-2 WG1562985-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	71		64		30-150	A
Decachlorobiphenyl	96		89		30-150	A
2,4,5,6-Tetrachloro-m-xylene	89		80		30-150	B
Decachlorobiphenyl	114		100		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 06 Batch: WG1563729-2 WG1563729-3									
Delta-BHC	65		62		30-150	5		30	A
Lindane	72		68		30-150	6		30	A
Alpha-BHC	71		67		30-150	6		30	A
Beta-BHC	76		72		30-150	5		30	A
Heptachlor	74		71		30-150	4		30	A
Aldrin	72		67		30-150	7		30	A
Heptachlor epoxide	75		62		30-150	19		30	A
Endrin	78		74		30-150	5		30	A
Endrin aldehyde	55		56		30-150	2		30	A
Endrin ketone	60		61		30-150	2		30	A
Dieldrin	77		74		30-150	4		30	A
4,4'-DDE	69		66		30-150	4		30	A
4,4'-DDD	76		73		30-150	4		30	A
4,4'-DDT	75		73		30-150	3		30	A
Endosulfan I	69		66		30-150	4		30	A
Endosulfan II	73		72		30-150	1		30	A
Endosulfan sulfate	54		58		30-150	7		30	A
Methoxychlor	66		67		30-150	2		30	A
cis-Chlordane	58		56		30-150	4		30	A
trans-Chlordane	74		68		30-150	8		30	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 06 Batch: WG1563729-2 WG1563729-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		58		30-150	A
Decachlorobiphenyl	71		69		30-150	A
2,4,5,6-Tetrachloro-m-xylene	62		57		30-150	B
Decachlorobiphenyl	69		71		30-150	B

METALS

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-01 Date Collected: 10/15/21 14:45

Client ID: GRID AA_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6760		mg/kg	8.80	2.38	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Antimony, Total	ND		mg/kg	4.40	0.334	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Arsenic, Total	4.72		mg/kg	0.880	0.183	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Barium, Total	13.6		mg/kg	0.880	0.153	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Beryllium, Total	0.167	J	mg/kg	0.440	0.029	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Cadmium, Total	0.167	J	mg/kg	0.880	0.086	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Calcium, Total	94.4		mg/kg	8.80	3.08	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Chromium, Total	7.34		mg/kg	0.880	0.085	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Cobalt, Total	2.52		mg/kg	1.76	0.146	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Copper, Total	5.34		mg/kg	0.880	0.227	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Iron, Total	7370		mg/kg	4.40	0.794	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Lead, Total	4.74		mg/kg	4.40	0.236	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Magnesium, Total	899		mg/kg	8.80	1.36	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Manganese, Total	49.2		mg/kg	0.880	0.140	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Mercury, Total	ND		mg/kg	0.072	0.047	1	10/19/21 10:00	10/20/21 18:04	EPA 7471B	1,7471B	AC
Nickel, Total	4.00		mg/kg	2.20	0.213	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Potassium, Total	194	J	mg/kg	220	12.7	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Selenium, Total	ND		mg/kg	1.76	0.227	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Silver, Total	ND		mg/kg	0.880	0.249	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Sodium, Total	19.5	J	mg/kg	176	2.77	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.76	0.277	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Vanadium, Total	12.1		mg/kg	0.880	0.179	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL
Zinc, Total	11.1		mg/kg	4.40	0.258	2	10/19/21 08:30	10/20/21 10:49	EPA 3050B	1,6010D	DL

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-03 Date Collected: 10/15/21 12:06

Client ID: GRID AB_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	4420		mg/kg	8.36	2.26	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Antimony, Total	ND		mg/kg	4.18	0.318	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Arsenic, Total	9.35		mg/kg	0.836	0.174	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Barium, Total	26.5		mg/kg	0.836	0.145	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Beryllium, Total	0.109	J	mg/kg	0.418	0.028	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Cadmium, Total	0.217	J	mg/kg	0.836	0.082	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Calcium, Total	3190		mg/kg	8.36	2.92	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Chromium, Total	6.12		mg/kg	0.836	0.080	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Cobalt, Total	1.70		mg/kg	1.67	0.139	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Copper, Total	11.9		mg/kg	0.836	0.216	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Iron, Total	6480		mg/kg	4.18	0.754	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Lead, Total	31.2		mg/kg	4.18	0.224	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Magnesium, Total	1040		mg/kg	8.36	1.29	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Manganese, Total	79.0		mg/kg	0.836	0.133	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Mercury, Total	0.086		mg/kg	0.069	0.045	1	10/19/21 10:00	10/20/21 18:07	EPA 7471B	1,7471B	AC
Nickel, Total	4.18		mg/kg	2.09	0.202	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Potassium, Total	236		mg/kg	209	12.0	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Selenium, Total	ND		mg/kg	1.67	0.216	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Silver, Total	ND		mg/kg	0.836	0.236	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Sodium, Total	34.0	J	mg/kg	167	2.63	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.67	0.263	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Vanadium, Total	10.1		mg/kg	0.836	0.170	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL
Zinc, Total	25.5		mg/kg	4.18	0.245	2	10/19/21 08:30	10/20/21 10:53	EPA 3050B	1,6010D	DL

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-05 Date Collected: 10/15/21 11:24

Client ID: GRID AC_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6230		mg/kg	8.32	2.24	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Antimony, Total	ND		mg/kg	4.16	0.316	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Arsenic, Total	17.6		mg/kg	0.832	0.173	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Barium, Total	12.2		mg/kg	0.832	0.145	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Beryllium, Total	0.10	J	mg/kg	0.416	0.027	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Cadmium, Total	0.141	J	mg/kg	0.832	0.082	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Calcium, Total	485		mg/kg	8.32	2.91	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Chromium, Total	6.44		mg/kg	0.832	0.080	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Cobalt, Total	0.990	J	mg/kg	1.66	0.138	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Copper, Total	10.5		mg/kg	0.832	0.214	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Iron, Total	6190		mg/kg	4.16	0.751	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Lead, Total	11.3		mg/kg	4.16	0.223	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Magnesium, Total	475		mg/kg	8.32	1.28	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Manganese, Total	23.7		mg/kg	0.832	0.132	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Mercury, Total	ND		mg/kg	0.068	0.045	1	10/19/21 10:00	10/20/21 18:17	EPA 7471B	1,7471B	AC
Nickel, Total	2.35		mg/kg	2.08	0.201	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Potassium, Total	108	J	mg/kg	208	12.0	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Selenium, Total	ND		mg/kg	1.66	0.214	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Silver, Total	ND		mg/kg	0.832	0.235	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Sodium, Total	19.0	J	mg/kg	166	2.62	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.66	0.262	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Vanadium, Total	10.5		mg/kg	0.832	0.169	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL
Zinc, Total	9.64		mg/kg	4.16	0.244	2	10/19/21 08:30	10/20/21 10:57	EPA 3050B	1,6010D	DL

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-06 Date Collected: 10/15/21 11:24

Client ID: GRID AC_18-24 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	4910		mg/kg	9.95	2.69	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Antimony, Total	ND		mg/kg	4.97	0.378	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Arsenic, Total	3.58		mg/kg	0.995	0.207	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Barium, Total	16.6		mg/kg	0.995	0.173	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Beryllium, Total	0.119	J	mg/kg	0.497	0.033	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Cadmium, Total	ND		mg/kg	0.995	0.098	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Calcium, Total	305		mg/kg	9.95	3.48	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Chromium, Total	6.07		mg/kg	0.995	0.096	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Cobalt, Total	1.80	J	mg/kg	1.99	0.165	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Copper, Total	4.84		mg/kg	0.995	0.257	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Iron, Total	6170		mg/kg	4.97	0.898	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Lead, Total	10.0		mg/kg	4.97	0.267	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Magnesium, Total	608		mg/kg	9.95	1.53	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Manganese, Total	31.9		mg/kg	0.995	0.158	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Mercury, Total	ND		mg/kg	0.080	0.052	1	10/27/21 09:55	10/27/21 13:58	EPA 7471B	1,7471B	AC
Nickel, Total	3.19		mg/kg	2.49	0.241	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Potassium, Total	148	J	mg/kg	249	14.3	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Selenium, Total	ND		mg/kg	1.99	0.257	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Silver, Total	ND		mg/kg	0.995	0.282	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Sodium, Total	24.5	J	mg/kg	199	3.13	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.99	0.313	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Vanadium, Total	9.99		mg/kg	0.995	0.202	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL
Zinc, Total	13.2		mg/kg	4.97	0.292	2	10/27/21 06:20	10/27/21 17:04	EPA 3050B	1,6010D	DL

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-07 Date Collected: 10/15/21 09:05

Client ID: GRID AD_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	5010		mg/kg	8.49	2.29	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Antimony, Total	ND		mg/kg	4.24	0.323	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Arsenic, Total	14.8		mg/kg	0.849	0.177	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Barium, Total	33.2		mg/kg	0.849	0.148	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Beryllium, Total	0.153	J	mg/kg	0.424	0.028	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Cadmium, Total	0.331	J	mg/kg	0.849	0.083	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Calcium, Total	5460		mg/kg	8.49	2.97	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Chromium, Total	8.00		mg/kg	0.849	0.082	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Cobalt, Total	2.20		mg/kg	1.70	0.141	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Copper, Total	19.1		mg/kg	0.849	0.219	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Iron, Total	7720		mg/kg	4.24	0.767	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Lead, Total	44.1		mg/kg	4.24	0.228	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Magnesium, Total	1720		mg/kg	8.49	1.31	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Manganese, Total	86.1		mg/kg	0.849	0.135	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Mercury, Total	0.083		mg/kg	0.069	0.045	1	10/19/21 10:00	10/20/21 18:21	EPA 7471B	1,7471B	AC
Nickel, Total	5.45		mg/kg	2.12	0.206	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Potassium, Total	287		mg/kg	212	12.2	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Selenium, Total	ND		mg/kg	1.70	0.219	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Silver, Total	ND		mg/kg	0.849	0.240	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Sodium, Total	116	J	mg/kg	170	2.67	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.70	0.267	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Vanadium, Total	11.9		mg/kg	0.849	0.172	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL
Zinc, Total	40.0		mg/kg	4.24	0.249	2	10/19/21 08:30	10/20/21 11:02	EPA 3050B	1,6010D	DL

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-08 Date Collected: 10/15/21 09:05

Client ID: GRID AD_18-24 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	9630		mg/kg	8.45	2.28	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Antimony, Total	ND		mg/kg	4.22	0.321	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Arsenic, Total	7.71		mg/kg	0.845	0.176	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Barium, Total	34.9		mg/kg	0.845	0.147	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Beryllium, Total	0.262	J	mg/kg	0.422	0.028	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Cadmium, Total	0.194	J	mg/kg	0.845	0.083	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Calcium, Total	3360		mg/kg	8.45	2.96	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Chromium, Total	11.6		mg/kg	0.845	0.081	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Cobalt, Total	3.80		mg/kg	1.69	0.140	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Copper, Total	12.6		mg/kg	0.845	0.218	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Iron, Total	10900		mg/kg	4.22	0.763	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Lead, Total	34.1		mg/kg	4.22	0.226	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Magnesium, Total	1520		mg/kg	8.45	1.30	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Manganese, Total	97.8		mg/kg	0.845	0.134	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Mercury, Total	0.062	J	mg/kg	0.071	0.046	1	10/27/21 09:55	10/27/21 14:02	EPA 7471B	1,7471B	AC
Nickel, Total	8.07		mg/kg	2.11	0.204	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Potassium, Total	378		mg/kg	211	12.2	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Selenium, Total	0.600	J	mg/kg	1.69	0.218	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Silver, Total	ND		mg/kg	0.845	0.239	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Sodium, Total	45.5	J	mg/kg	169	2.66	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.69	0.266	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Vanadium, Total	17.9		mg/kg	0.845	0.172	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL
Zinc, Total	36.6		mg/kg	4.22	0.248	2	10/27/21 06:20	10/27/21 17:08	EPA 3050B	1,6010D	DL

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-09 Date Collected: 10/15/21 14:01

Client ID: GRID L_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	5520		mg/kg	8.40	2.27	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Antimony, Total	ND		mg/kg	4.20	0.319	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Arsenic, Total	24.0		mg/kg	0.840	0.175	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Barium, Total	9.56		mg/kg	0.840	0.146	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Beryllium, Total	0.109	J	mg/kg	0.420	0.028	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Cadmium, Total	0.151	J	mg/kg	0.840	0.082	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Calcium, Total	481		mg/kg	8.40	2.94	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Chromium, Total	5.62		mg/kg	0.840	0.081	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Cobalt, Total	0.613	J	mg/kg	1.68	0.139	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Copper, Total	17.9		mg/kg	0.840	0.217	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Iron, Total	5080		mg/kg	4.20	0.758	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Lead, Total	7.81		mg/kg	4.20	0.225	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Magnesium, Total	334		mg/kg	8.40	1.29	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Manganese, Total	15.3		mg/kg	0.840	0.134	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Mercury, Total	ND		mg/kg	0.068	0.044	1	10/19/21 10:00	10/20/21 18:24	EPA 7471B	1,7471B	AC
Nickel, Total	1.78	J	mg/kg	2.10	0.203	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Potassium, Total	132	J	mg/kg	210	12.1	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Selenium, Total	ND		mg/kg	1.68	0.217	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Silver, Total	ND		mg/kg	0.840	0.238	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Sodium, Total	17.1	J	mg/kg	168	2.64	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.68	0.264	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Vanadium, Total	9.13		mg/kg	0.840	0.170	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL
Zinc, Total	7.43		mg/kg	4.20	0.246	2	10/19/21 08:30	10/20/21 11:06	EPA 3050B	1,6010D	DL

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-10 Date Collected: 10/15/21 14:01

Client ID: GRID L_18-24 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 93%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6750		mg/kg	8.29	2.24	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Antimony, Total	ND		mg/kg	4.14	0.315	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Arsenic, Total	5.94		mg/kg	0.829	0.172	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Barium, Total	10.9		mg/kg	0.829	0.144	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Beryllium, Total	0.133	J	mg/kg	0.414	0.027	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Cadmium, Total	ND		mg/kg	0.829	0.081	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Calcium, Total	204		mg/kg	8.29	2.90	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Chromium, Total	6.80		mg/kg	0.829	0.080	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Cobalt, Total	1.56	J	mg/kg	1.66	0.138	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Copper, Total	6.03		mg/kg	0.829	0.214	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Iron, Total	5380		mg/kg	4.14	0.748	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Lead, Total	3.73	J	mg/kg	4.14	0.222	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Magnesium, Total	699		mg/kg	8.29	1.28	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Manganese, Total	30.8		mg/kg	0.829	0.132	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Mercury, Total	ND		mg/kg	0.069	0.045	1	10/27/21 09:55	10/27/21 14:05	EPA 7471B	1,7471B	AC
Nickel, Total	3.90		mg/kg	2.07	0.200	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Potassium, Total	137	J	mg/kg	207	11.9	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Selenium, Total	0.265	J	mg/kg	1.66	0.214	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Silver, Total	ND		mg/kg	0.829	0.234	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Sodium, Total	22.8	J	mg/kg	166	2.61	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.66	0.261	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Vanadium, Total	9.37		mg/kg	0.829	0.168	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL
Zinc, Total	11.5		mg/kg	4.14	0.243	2	10/27/21 06:20	10/27/21 17:13	EPA 3050B	1,6010D	DL

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-11 Date Collected: 10/15/21 13:30

Client ID: GRID M_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6180		mg/kg	9.23	2.49	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Antimony, Total	ND		mg/kg	4.61	0.351	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Arsenic, Total	23.8		mg/kg	0.923	0.192	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Barium, Total	9.93		mg/kg	0.923	0.160	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Beryllium, Total	0.129	J	mg/kg	0.461	0.030	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Cadmium, Total	0.194	J	mg/kg	0.923	0.090	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Calcium, Total	454		mg/kg	9.23	3.23	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Chromium, Total	7.17		mg/kg	0.923	0.089	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Cobalt, Total	1.06	J	mg/kg	1.84	0.153	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Copper, Total	16.2		mg/kg	0.923	0.238	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Iron, Total	6960		mg/kg	4.61	0.833	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Lead, Total	8.07		mg/kg	4.61	0.247	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Magnesium, Total	463		mg/kg	9.23	1.42	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Manganese, Total	26.8		mg/kg	0.923	0.147	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Mercury, Total	ND		mg/kg	0.074	0.048	1	10/19/21 10:00	10/20/21 18:27	EPA 7471B	1,7471B	AC
Nickel, Total	2.19	J	mg/kg	2.31	0.223	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Potassium, Total	186	J	mg/kg	231	13.3	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Selenium, Total	ND		mg/kg	1.84	0.238	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Silver, Total	ND		mg/kg	0.923	0.261	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Sodium, Total	17.4	J	mg/kg	184	2.91	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.84	0.291	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Vanadium, Total	11.7		mg/kg	0.923	0.187	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL
Zinc, Total	9.07		mg/kg	4.61	0.270	2	10/19/21 08:30	10/20/21 11:10	EPA 3050B	1,6010D	DL

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-12 Date Collected: 10/15/21 13:30

Client ID: GRID M_18-24 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	7930		mg/kg	8.56	2.31	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Antimony, Total	ND		mg/kg	4.28	0.325	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Arsenic, Total	9.31		mg/kg	0.856	0.178	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Barium, Total	12.4		mg/kg	0.856	0.149	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Beryllium, Total	0.188	J	mg/kg	0.428	0.028	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Cadmium, Total	0.094	J	mg/kg	0.856	0.084	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Calcium, Total	225		mg/kg	8.56	3.00	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Chromium, Total	8.25		mg/kg	0.856	0.082	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Cobalt, Total	2.35		mg/kg	1.71	0.142	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Copper, Total	6.26		mg/kg	0.856	0.221	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Iron, Total	7880		mg/kg	4.28	0.773	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Lead, Total	5.24		mg/kg	4.28	0.229	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Magnesium, Total	812		mg/kg	8.56	1.32	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Manganese, Total	42.1		mg/kg	0.856	0.136	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Mercury, Total	ND		mg/kg	0.069	0.045	1	10/27/21 09:55	10/27/21 14:08	EPA 7471B	1,7471B	AC
Nickel, Total	4.17		mg/kg	2.14	0.207	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Potassium, Total	173	J	mg/kg	214	12.3	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Selenium, Total	0.394	J	mg/kg	1.71	0.221	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Silver, Total	ND		mg/kg	0.856	0.242	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Sodium, Total	24.0	J	mg/kg	171	2.70	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.71	0.270	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Vanadium, Total	13.5		mg/kg	0.856	0.174	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL
Zinc, Total	12.4		mg/kg	4.28	0.251	2	10/27/21 06:20	10/27/21 17:17	EPA 3050B	1,6010D	DL

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-13 Date Collected: 10/15/21 10:20

Client ID: GRID N_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6140		mg/kg	8.65	2.34	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Antimony, Total	ND		mg/kg	4.32	0.329	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Arsenic, Total	25.5		mg/kg	0.865	0.180	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Barium, Total	10.0		mg/kg	0.865	0.150	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Beryllium, Total	0.147	J	mg/kg	0.432	0.029	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Cadmium, Total	0.199	J	mg/kg	0.865	0.085	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Calcium, Total	368		mg/kg	8.65	3.03	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Chromium, Total	6.70		mg/kg	0.865	0.083	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Cobalt, Total	1.22	J	mg/kg	1.73	0.144	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Copper, Total	17.6		mg/kg	0.865	0.223	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Iron, Total	7380		mg/kg	4.32	0.781	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Lead, Total	9.26		mg/kg	4.32	0.232	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Magnesium, Total	502		mg/kg	8.65	1.33	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Manganese, Total	33.5		mg/kg	0.865	0.138	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Mercury, Total	ND		mg/kg	0.069	0.045	1	10/19/21 10:00	10/20/21 18:31	EPA 7471B	1,7471B	AC
Nickel, Total	2.43		mg/kg	2.16	0.209	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Potassium, Total	146	J	mg/kg	216	12.4	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Selenium, Total	ND		mg/kg	1.73	0.223	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Silver, Total	ND		mg/kg	0.865	0.245	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Sodium, Total	16.2	J	mg/kg	173	2.72	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.73	0.272	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Vanadium, Total	11.8		mg/kg	0.865	0.176	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL
Zinc, Total	9.28		mg/kg	4.32	0.253	2	10/19/21 08:30	10/20/21 11:15	EPA 3050B	1,6010D	DL

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-14 Date Collected: 10/15/21 10:20

Client ID: GRID N_18-24 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	7780		mg/kg	8.91	2.41	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Antimony, Total	ND		mg/kg	4.46	0.339	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Arsenic, Total	4.82		mg/kg	0.891	0.185	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Barium, Total	12.2		mg/kg	0.891	0.155	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Beryllium, Total	0.214	J	mg/kg	0.446	0.029	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Cadmium, Total	0.098	J	mg/kg	0.891	0.087	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Calcium, Total	145		mg/kg	8.91	3.12	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Chromium, Total	7.77		mg/kg	0.891	0.086	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Cobalt, Total	3.11		mg/kg	1.78	0.148	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Copper, Total	4.36		mg/kg	0.891	0.230	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Iron, Total	8700		mg/kg	4.46	0.805	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Lead, Total	4.34	J	mg/kg	4.46	0.239	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Magnesium, Total	905		mg/kg	8.91	1.37	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Manganese, Total	70.6		mg/kg	0.891	0.142	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Mercury, Total	ND		mg/kg	0.075	0.049	1	10/27/21 09:55	10/27/21 14:11	EPA 7471B	1,7471B	AC
Nickel, Total	4.46		mg/kg	2.23	0.216	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Potassium, Total	178	J	mg/kg	223	12.8	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Selenium, Total	0.392	J	mg/kg	1.78	0.230	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Silver, Total	ND		mg/kg	0.891	0.252	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Sodium, Total	28.3	J	mg/kg	178	2.81	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.78	0.281	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Vanadium, Total	13.4		mg/kg	0.891	0.181	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL
Zinc, Total	12.5		mg/kg	4.46	0.261	2	10/27/21 06:20	10/27/21 17:31	EPA 3050B	1,6010D	DL

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-15 Date Collected: 10/15/21 09:50

Client ID: GRID O_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	7320		mg/kg	8.58	2.32	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Antimony, Total	ND		mg/kg	4.29	0.326	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Arsenic, Total	41.8		mg/kg	0.858	0.178	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Barium, Total	12.4		mg/kg	0.858	0.149	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Beryllium, Total	0.180	J	mg/kg	0.429	0.028	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Cadmium, Total	0.257	J	mg/kg	0.858	0.084	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Calcium, Total	595		mg/kg	8.58	3.00	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Chromium, Total	8.51		mg/kg	0.858	0.082	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Cobalt, Total	1.30	J	mg/kg	1.72	0.142	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Copper, Total	28.1		mg/kg	0.858	0.221	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Iron, Total	9140		mg/kg	4.29	0.774	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Lead, Total	12.5		mg/kg	4.29	0.230	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Magnesium, Total	520		mg/kg	8.58	1.32	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Manganese, Total	50.9		mg/kg	0.858	0.136	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Mercury, Total	0.047	J	mg/kg	0.071	0.047	1	10/19/21 10:00	10/20/21 18:34	EPA 7471B	1,7471B	AC
Nickel, Total	2.52		mg/kg	2.14	0.208	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Potassium, Total	221		mg/kg	214	12.4	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Selenium, Total	ND		mg/kg	1.72	0.221	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Silver, Total	ND		mg/kg	0.858	0.243	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Sodium, Total	16.1	J	mg/kg	172	2.70	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.72	0.270	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Vanadium, Total	14.2		mg/kg	0.858	0.174	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL
Zinc, Total	12.0		mg/kg	4.29	0.251	2	10/19/21 08:30	10/20/21 11:19	EPA 3050B	1,6010D	DL

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-16 Date Collected: 10/15/21 09:50

Client ID: GRID O_18-24 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6390		mg/kg	9.38	2.53	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Antimony, Total	ND		mg/kg	4.69	0.357	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Arsenic, Total	20.8		mg/kg	0.938	0.195	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Barium, Total	8.90		mg/kg	0.938	0.163	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Beryllium, Total	0.160	J	mg/kg	0.469	0.031	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Cadmium, Total	0.094	J	mg/kg	0.938	0.092	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Calcium, Total	374		mg/kg	9.38	3.28	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Chromium, Total	8.19		mg/kg	0.938	0.090	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Cobalt, Total	1.47	J	mg/kg	1.88	0.156	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Copper, Total	9.95		mg/kg	0.938	0.242	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Iron, Total	7670		mg/kg	4.69	0.847	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Lead, Total	5.12		mg/kg	4.69	0.252	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Magnesium, Total	624		mg/kg	9.38	1.44	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Manganese, Total	39.7		mg/kg	0.938	0.149	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Mercury, Total	ND		mg/kg	0.076	0.049	1	10/27/21 09:55	10/27/21 14:21	EPA 7471B	1,7471B	AC
Nickel, Total	3.74		mg/kg	2.35	0.227	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Potassium, Total	150	J	mg/kg	235	13.5	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Selenium, Total	0.526	J	mg/kg	1.88	0.242	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Silver, Total	ND		mg/kg	0.938	0.266	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Sodium, Total	24.8	J	mg/kg	188	2.96	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.88	0.296	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Vanadium, Total	11.8		mg/kg	0.938	0.190	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL
Zinc, Total	9.19		mg/kg	4.69	0.275	2	10/27/21 06:20	10/27/21 17:35	EPA 3050B	1,6010D	DL

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-17 Date Collected: 10/15/21 15:27

Client ID: GRID Z_0-2 Date Received: 10/15/21

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 96%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	4970		mg/kg	7.87	2.12	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Antimony, Total	ND		mg/kg	3.94	0.299	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Arsenic, Total	8.99		mg/kg	0.787	0.164	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Barium, Total	8.05		mg/kg	0.787	0.137	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Beryllium, Total	0.126	J	mg/kg	0.394	0.026	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Cadmium, Total	0.142	J	mg/kg	0.787	0.077	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Calcium, Total	114		mg/kg	7.87	2.76	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Chromium, Total	5.56		mg/kg	0.787	0.076	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Cobalt, Total	1.45	J	mg/kg	1.57	0.131	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Copper, Total	7.91		mg/kg	0.787	0.203	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Iron, Total	6040		mg/kg	3.94	0.711	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Lead, Total	5.23		mg/kg	3.94	0.211	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Magnesium, Total	506		mg/kg	7.87	1.21	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Manganese, Total	36.5		mg/kg	0.787	0.125	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Mercury, Total	ND		mg/kg	0.066	0.043	1	10/19/21 10:00	10/20/21 18:37	EPA 7471B	1,7471B	AC
Nickel, Total	2.42		mg/kg	1.97	0.190	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Potassium, Total	137	J	mg/kg	197	11.3	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Selenium, Total	ND		mg/kg	1.57	0.203	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Silver, Total	ND		mg/kg	0.787	0.223	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Sodium, Total	11.0	J	mg/kg	157	2.48	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Thallium, Total	ND		mg/kg	1.57	0.248	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Vanadium, Total	8.72		mg/kg	0.787	0.160	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL
Zinc, Total	7.79		mg/kg	3.94	0.231	2	10/19/21 08:30	10/20/21 11:42	EPA 3050B	1,6010D	DL

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03,05,07,09,11,13,15,17 Batch: WG1560034-1										
Aluminum, Total	ND		mg/kg	4.00	1.08	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Antimony, Total	ND		mg/kg	2.00	0.152	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Arsenic, Total	ND		mg/kg	0.400	0.083	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Barium, Total	ND		mg/kg	0.400	0.070	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Beryllium, Total	ND		mg/kg	0.200	0.013	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Cadmium, Total	ND		mg/kg	0.400	0.039	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Calcium, Total	ND		mg/kg	4.00	1.40	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Chromium, Total	ND		mg/kg	0.400	0.038	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Cobalt, Total	ND		mg/kg	0.800	0.066	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Copper, Total	ND		mg/kg	0.400	0.103	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Iron, Total	2.19		mg/kg	2.00	0.361	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Lead, Total	ND		mg/kg	2.00	0.107	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Magnesium, Total	ND		mg/kg	4.00	0.616	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Manganese, Total	0.092	J	mg/kg	0.400	0.064	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Nickel, Total	ND		mg/kg	1.00	0.097	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Potassium, Total	18.4	J	mg/kg	100	5.76	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Selenium, Total	ND		mg/kg	0.800	0.103	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Silver, Total	ND		mg/kg	0.400	0.113	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Sodium, Total	33.5	J	mg/kg	80.0	1.26	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Thallium, Total	ND		mg/kg	0.800	0.126	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Vanadium, Total	ND		mg/kg	0.400	0.081	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL
Zinc, Total	ND		mg/kg	2.00	0.117	1	10/19/21 08:30	10/20/21 09:49	1,6010D	DL

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03,05,07,09,11,13,15,17 Batch: WG1560035-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	10/19/21 10:00	10/20/21 17:21	1,7471B	AC

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 06,08,10,12,14,16 Batch: WG1563264-1										
Aluminum, Total	ND		mg/kg	4.00	1.08	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Antimony, Total	ND		mg/kg	2.00	0.152	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Arsenic, Total	ND		mg/kg	0.400	0.083	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Barium, Total	ND		mg/kg	0.400	0.070	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Beryllium, Total	ND		mg/kg	0.200	0.013	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Cadmium, Total	ND		mg/kg	0.400	0.039	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Calcium, Total	ND		mg/kg	4.00	1.40	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Chromium, Total	ND		mg/kg	0.400	0.038	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Cobalt, Total	ND		mg/kg	0.800	0.066	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Copper, Total	ND		mg/kg	0.400	0.103	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Iron, Total	2.36		mg/kg	2.00	0.361	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Lead, Total	ND		mg/kg	2.00	0.107	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Magnesium, Total	ND		mg/kg	4.00	0.616	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Manganese, Total	0.072	J	mg/kg	0.400	0.064	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Nickel, Total	ND		mg/kg	1.00	0.097	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Potassium, Total	ND		mg/kg	100	5.76	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Selenium, Total	ND		mg/kg	0.800	0.103	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Silver, Total	ND		mg/kg	0.400	0.113	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Sodium, Total	5.52	J	mg/kg	80.0	1.26	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Thallium, Total	ND		mg/kg	0.800	0.126	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Vanadium, Total	ND		mg/kg	0.400	0.081	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL
Zinc, Total	ND		mg/kg	2.00	0.117	1	10/27/21 06:20	10/27/21 15:02	1,6010D	DL

Prep Information

Digestion Method: EPA 3050B

Project Name: HKV2101 **Lab Number:** L2156730

Project Number: Not Specified **Report Date:** 10/29/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 06,08,10,12,14,16 Batch: WG1563265-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	10/27/21 09:55	10/27/21 13:19	1,7471B	AC

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 Batch: WG1560034-2 SRM Lot Number: D109-540								
Aluminum, Total	72		-		50-150	-		
Antimony, Total	132		-		19-250	-		
Arsenic, Total	92		-		70-130	-		
Barium, Total	87		-		75-125	-		
Beryllium, Total	90		-		75-125	-		
Cadmium, Total	88		-		75-125	-		
Calcium, Total	85		-		73-128	-		
Chromium, Total	90		-		70-130	-		
Cobalt, Total	88		-		75-125	-		
Copper, Total	90		-		75-125	-		
Iron, Total	86		-		35-165	-		
Lead, Total	90		-		72-128	-		
Magnesium, Total	88		-		62-138	-		
Manganese, Total	87		-		74-126	-		
Nickel, Total	88		-		70-130	-		
Potassium, Total	86		-		59-141	-		
Selenium, Total	90		-		68-132	-		
Silver, Total	90		-		68-131	-		
Sodium, Total	100		-		35-165	-		
Thallium, Total	89		-		68-131	-		
Vanadium, Total	84		-		59-141	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 Batch: WG1560034-2 SRM Lot Number: D109-540					
Zinc, Total	90	-	70-130	-	
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 Batch: WG1560035-2 SRM Lot Number: D109-540					
Mercury, Total	92	-	60-140	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 06,08,10,12,14,16 Batch: WG1563264-2 SRM Lot Number: D109-540					
Aluminum, Total	65	-	50-150	-	
Antimony, Total	140	-	19-250	-	
Arsenic, Total	96	-	70-130	-	
Barium, Total	93	-	75-125	-	
Beryllium, Total	90	-	75-125	-	
Cadmium, Total	94	-	75-125	-	
Calcium, Total	91	-	73-128	-	
Chromium, Total	99	-	70-130	-	
Cobalt, Total	91	-	75-125	-	
Copper, Total	100	-	75-125	-	
Iron, Total	87	-	35-165	-	
Lead, Total	90	-	72-128	-	
Magnesium, Total	82	-	62-138	-	
Manganese, Total	88	-	74-126	-	
Nickel, Total	91	-	70-130	-	
Potassium, Total	87	-	59-141	-	
Selenium, Total	95	-	68-132	-	
Silver, Total	98	-	68-131	-	
Sodium, Total	94	-	35-165	-	
Thallium, Total	96	-	68-131	-	
Vanadium, Total	96	-	59-141	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 06,08,10,12,14,16 Batch: WG1563264-2 SRM Lot Number: D109-540					
Zinc, Total	92	-	70-130	-	
Total Metals - Mansfield Lab Associated sample(s): 06,08,10,12,14,16 Batch: WG1563265-2 SRM Lot Number: D109-540					
Mercury, Total	99	-	60-140	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1560034-3 QC Sample: L2156632-01 Client ID: MS Sample												
Aluminum, Total	11200	186	11900	**377**	Q	-	-		75-125	-		20
Antimony, Total	0.391J	46.4	27.9	**60**	Q	-	-		75-125	-		20
Arsenic, Total	5.61	11.1	15.4	88		-	-		75-125	-		20
Barium, Total	31.3	186	171	75		-	-		75-125	-		20
Beryllium, Total	0.344J	4.64	3.92	84		-	-		75-125	-		20
Cadmium, Total	0.335J	4.92	3.98	81		-	-		75-125	-		20
Calcium, Total	984	928	1720	79		-	-		75-125	-		20
Chromium, Total	15.4	18.6	29.2	**74**	Q	-	-		75-125	-		20
Cobalt, Total	2.48	46.4	34.6	**69**	Q	-	-		75-125	-		20
Copper, Total	7.08	23.2	25.0	77		-	-		75-125	-		20
Iron, Total	15200B	92.8	13800	**0**	Q	-	-		75-125	-		20
Lead, Total	8.57	49.2	50.9	86		-	-		75-125	-		20
Magnesium, Total	713	928	1500	85		-	-		75-125	-		20
Manganese, Total	42.2	46.4	73.2	**67**	Q	-	-		75-125	-		20
Nickel, Total	4.68	46.4	37.1	**70**	Q	-	-		75-125	-		20
Potassium, Total	422	928	1230	87		-	-		75-125	-		20
Selenium, Total	ND	11.1	7.46	**67**	Q	-	-		75-125	-		20
Silver, Total	ND	27.8	22.2	80		-	-		75-125	-		20
Sodium, Total	37.4J	928	765	82		-	-		75-125	-		20
Thallium, Total	0.316J	11.1	8.01	**72**	Q	-	-		75-125	-		20
Vanadium, Total	25.2	46.4	58.1	**71**	Q	-	-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1560034-3 QC Sample: L2156632-01 Client ID: MS Sample									
Zinc, Total	16.6	46.4	51.7	76	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1560035-3 QC Sample: L2156632-01 Client ID: MS Sample									
Mercury, Total	ND	0.151	0.179	119	-	-	80-120	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 06,08,10,12,14,16 QC Batch ID: WG1563264-3 QC Sample: L2157115-01 Client ID: MS Sample										
Aluminum, Total	2240	184	3000	**413**	Q	-	-	75-125	-	20
Antimony, Total	ND	46	37.2	81		-	-	75-125	-	20
Arsenic, Total	0.736J	11	10.3	93		-	-	75-125	-	20
Barium, Total	4.20	184	188	100		-	-	75-125	-	20
Beryllium, Total	ND	4.6	4.33	94		-	-	75-125	-	20
Cadmium, Total	ND	4.88	4.79	98		-	-	75-125	-	20
Calcium, Total	163	920	1080	100		-	-	75-125	-	20
Chromium, Total	4.26	18.4	23.8	106		-	-	75-125	-	20
Cobalt, Total	0.382J	46	41.7	91		-	-	75-125	-	20
Copper, Total	1.83	23	25.9	105		-	-	75-125	-	20
Iron, Total	2450B	92	3000	**598**	Q	-	-	75-125	-	20
Lead, Total	5.15	48.8	52.2	96		-	-	75-125	-	20
Magnesium, Total	84.1	920	1010	101		-	-	75-125	-	20
Manganese, Total	8.34	46	53.0	97		-	-	75-125	-	20
Nickel, Total	0.718J	46	42.9	93		-	-	75-125	-	20
Potassium, Total	96.6J	920	965	105		-	-	75-125	-	20
Selenium, Total	ND	11	9.30	84		-	-	75-125	-	20
Silver, Total	ND	27.6	31.7	115		-	-	75-125	-	20
Sodium, Total	13.4J	920	947	103		-	-	75-125	-	20
Thallium, Total	ND	11	10.2	92		-	-	75-125	-	20
Vanadium, Total	6.56	46	55.0	105		-	-	75-125	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 06,08,10,12,14,16 QC Batch ID: WG1563264-3 QC Sample: L2157115-01 Client ID: MS Sample									
Zinc, Total	5.07	46	50.9	100	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 06,08,10,12,14,16 QC Batch ID: WG1563265-3 QC Sample: L2157115-01 Client ID: MS Sample									
Mercury, Total	ND	0.152	0.152	100	-	-	80-120	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1560034-4 QC Sample: L2156632-01 Client ID: DUP Sample						
Aluminum, Total	11200	11200	mg/kg	0		20
Antimony, Total	0.391J	ND	mg/kg	NC		20
Arsenic, Total	5.61	4.91	mg/kg	13		20
Barium, Total	31.3	30.7	mg/kg	2		20
Beryllium, Total	0.344J	0.310J	mg/kg	NC		20
Cadmium, Total	0.335J	0.310J	mg/kg	NC		20
Calcium, Total	984	871	mg/kg	12		20
Chromium, Total	15.4	14.5	mg/kg	6		20
Cobalt, Total	2.48	2.74	mg/kg	10		20
Copper, Total	7.08	6.41	mg/kg	10		20
Iron, Total	15200B	14000	mg/kg	8		20
Lead, Total	8.57	7.58	mg/kg	12		20
Magnesium, Total	713	653	mg/kg	9		20
Manganese, Total	42.2	72.1	mg/kg	**52**	Q	20
Nickel, Total	4.68	4.30	mg/kg	8		20
Potassium, Total	422	375	mg/kg	12		20
Selenium, Total	ND	ND	mg/kg	NC		20
Silver, Total	ND	ND	mg/kg	NC		20
Sodium, Total	37.4J	32.4J	mg/kg	NC		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Parameter	Native Sample	Duplicate Sample	Units	RPD		RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1560034-4 QC Sample: L2156632-01 Client ID: DUP Sample						
Thallium, Total	0.316J	ND	mg/kg	NC		20
Vanadium, Total	25.2	23.8	mg/kg	6		20
Zinc, Total	16.6	12.8	mg/kg	**26**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1560035-4 QC Sample: L2156632-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/kg	NC		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Parameter	Native Sample	Duplicate Sample	Units	RPD		RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 06,08,10,12,14,16 QC Batch ID: WG1563264-4 QC Sample: L2157115-01 Client ID: DUP Sample						
Aluminum, Total	2240	2430	mg/kg	8		20
Antimony, Total	ND	ND	mg/kg	NC		20
Arsenic, Total	0.736J	1.11	mg/kg	NC		20
Barium, Total	4.20	5.89	mg/kg	**33**	Q	20
Beryllium, Total	ND	ND	mg/kg	NC		20
Cadmium, Total	ND	ND	mg/kg	NC		20
Calcium, Total	163	189	mg/kg	15		20
Chromium, Total	4.26	5.92	mg/kg	**33**	Q	20
Cobalt, Total	0.382J	0.394J	mg/kg	NC		20
Copper, Total	1.83	2.25	mg/kg	**21**	Q	20
Iron, Total	2450B	3370	mg/kg	**32**	Q	20
Lead, Total	5.15	6.17	mg/kg	18		20
Magnesium, Total	84.1	113	mg/kg	**29**	Q	20
Manganese, Total	8.34	9.44	mg/kg	12		20
Nickel, Total	0.718J	0.891J	mg/kg	NC		20
Potassium, Total	96.6J	90.5J	mg/kg	NC		20
Selenium, Total	ND	ND	mg/kg	NC		20
Silver, Total	ND	ND	mg/kg	NC		20
Sodium, Total	13.4J	14.1J	mg/kg	NC		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 06,08,10,12,14,16 QC Batch ID: WG1563264-4 QC Sample: L2157115-01 Client ID: DUP Sample					
Thallium, Total	ND	ND	mg/kg	NC	20
Vanadium, Total	6.56	7.78	mg/kg	17	20
Zinc, Total	5.07	6.20	mg/kg	20	20
Total Metals - Mansfield Lab Associated sample(s): 06,08,10,12,14,16 QC Batch ID: WG1563265-4 QC Sample: L2157115-01 Client ID: DUP Sample					
Mercury, Total	ND	ND	mg/kg	NC	20

Project Name: HKV2101
Project Number: Not Specified

Lab Serial Dilution Analysis
Batch Quality Control

Lab Number: L2156730
Report Date: 10/29/21

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1560034-6 QC Sample: L2156632-01 Client ID: DUP Sample						
Aluminum, Total	11200	14100	mg/kg	**26**	Q	20
Barium, Total	31.3	39.6	mg/kg	**27**	Q	20
Calcium, Total	984	1250	mg/kg	**27**	Q	20
Iron, Total	15200B	19100	mg/kg	**26**	Q	20
Magnesium, Total	713	940	mg/kg	**32**	Q	20
Manganese, Total	42.2	53.3	mg/kg	**26**	Q	20
Vanadium, Total	25.2	32.5	mg/kg	**29**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 06,08,10,12,14,16 QC Batch ID: WG1563264-6 QC Sample: L2157115-01 Client ID: DUP Sample						
Aluminum, Total	2240	2330	mg/kg	4		20
Iron, Total	2450B	2570	mg/kg	5		20

INORGANICS
&
MISCELLANEOUS

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-01
Client ID: GRID AA_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 14:45
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.1		%	0.100	NA	1	-	10/16/21 12:21	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-02
Client ID: GRID AA_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 14:45
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	98.0		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-03
Client ID: GRID AB_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 12:06
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.2		%	0.100	NA	1	-	10/16/21 12:21	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-04
Client ID: GRID AB_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 12:06
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.7		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-05
Client ID: GRID AC_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 11:24
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.5		%	0.100	NA	1	-	10/16/21 12:21	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-06
Client ID: GRID AC_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 11:24
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	78.4		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-07
Client ID: GRID AD_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 09:05
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.0		%	0.100	NA	1	-	10/16/21 12:21	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-08
Client ID: GRID AD_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 09:05
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.5		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-09
Client ID: GRID L_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 14:01
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	93.4		%	0.100	NA	1	-	10/16/21 12:21	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-10
Client ID: GRID L_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 14:01
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	92.8		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-11
Client ID: GRID M_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 13:30
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.6		%	0.100	NA	1	-	10/16/21 12:21	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-12
Client ID: GRID M_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 13:30
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.9		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-13
Client ID: GRID N_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 10:20
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.8		%	0.100	NA	1	-	10/16/21 12:21	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-14
Client ID: GRID N_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 10:20
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.4		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-15
Client ID: GRID O_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 09:50
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	87.8		%	0.100	NA	1	-	10/16/21 12:21	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-16
Client ID: GRID O_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 09:50
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.6		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-17
Client ID: GRID Z_0-2
Sample Location: Not Specified

Date Collected: 10/15/21 15:27
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	95.5		%	0.100	NA	1	-	10/16/21 12:21	121,2540G	RI

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

SAMPLE RESULTS

Lab ID: L2156730-18
Client ID: GRID Z_18-24
Sample Location: Not Specified

Date Collected: 10/15/21 15:27
Date Received: 10/15/21
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.8		%	0.100	NA	1	-	10/26/21 11:17	121,2540G	RI

Lab Duplicate Analysis

Batch Quality Control

Project Name: HKV2101

Project Number: Not Specified

Lab Number: L2156730

Report Date: 10/29/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03,05,07,09,11,13,15,17 QC Batch ID: WG1559491-1 QC Sample: L2156535-01 Client ID: DUP Sample						
Solids, Total	94.7	94.2	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 02,04,06,08,10,12,14,16,18 QC Batch ID: WG1563217-1 QC Sample: L2156337-04 Client ID: DUP Sample						
Solids, Total	81.1	80.7	%	0		20

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2156730-01A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),TL-TI(180),NI-TI(180),AL-TI(180),CR-TI(180),CU-TI(180),SE-TI(180),ZN-TI(180),PB-TI(180),SB-TI(180),CO-TI(180),V-TI(180),HG-T(28),FE-TI(180),MN-TI(180),MG-TI(180),CD-TI(180),CA-TI(180),K-TI(180),NA-TI(180)
L2156730-01B	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		TS(7),NYTCL-8081(14)
L2156730-02A	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		HOLD-METAL(180)
L2156730-02B	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		TS(7),NYTCL-8081(14)
L2156730-03A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),NI-TI(180),AL-TI(180),TL-TI(180),CR-TI(180),SB-TI(180),ZN-TI(180),PB-TI(180),SE-TI(180),CU-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MN-TI(180),MG-TI(180),HG-T(28),NA-TI(180),CD-TI(180),CA-TI(180),K-TI(180)
L2156730-03B	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		TS(7),NYTCL-8081(14)
L2156730-04A	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		HOLD-METAL(180)
L2156730-04B	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		TS(7),NYTCL-8081(14)
L2156730-05A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),TL-TI(180),NI-TI(180),CR-TI(180),AL-TI(180),SE-TI(180),ZN-TI(180),SB-TI(180),CU-TI(180),PB-TI(180),V-TI(180),CO-TI(180),HG-T(28),MN-TI(180),MG-TI(180),FE-TI(180),K-TI(180),CD-TI(180),NA-TI(180),CA-TI(180)
L2156730-05B	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		TS(7),NYTCL-8081(14)
L2156730-06A	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),NI-TI(180),TL-TI(180),AL-TI(180),CR-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),V-TI(180),CO-TI(180),HG-T(28),MG-TI(180),MN-TI(180),FE-TI(180),CD-TI(180),CA-TI(180),K-TI(180),NA-TI(180)
L2156730-06B	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		TS(7),NYTCL-8081(14)
L2156730-07A	Vial MeOH preserved	A	NA		2.5	Y	Absent		NYTCL-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2156730-07B	Vial water preserved	A	NA		2.5	Y	Absent	16-OCT-21 09:02	NYTCL-8260HLW(14)
L2156730-07C	Vial water preserved	A	NA		2.5	Y	Absent	16-OCT-21 09:02	NYTCL-8260HLW(14)
L2156730-07D	Plastic 120ml unpreserved	A	NA		2.5	Y	Absent		TS(7)
L2156730-07E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),AL-TI(180),TL-TI(180),SB-TI(180),ZN-TI(180),SE-TI(180),CU-TI(180),PB-TI(180),CO-TI(180),V-TI(180),HG-T(28),FE-TI(180),MN-TI(180),MG-TI(180),K-TI(180),NA-TI(180),CD-TI(180),CA-TI(180)
L2156730-07F	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2156730-07G	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2156730-07H	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2156730-07I	Glass 500ml/16oz unpreserved	A	NA		2.5	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2156730-08A	Vial MeOH preserved	A	NA		2.5	Y	Absent		HOLD-8260HLW(14)
L2156730-08B	Vial water preserved	A	NA		2.5	Y	Absent	16-OCT-21 09:02	HOLD-8260HLW(14)
L2156730-08C	Vial water preserved	A	NA		2.5	Y	Absent	16-OCT-21 09:02	HOLD-8260HLW(14)
L2156730-08D	Plastic 120ml unpreserved	A	NA		2.5	Y	Absent		TS(7)
L2156730-08E	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),AL-TI(180),TL-TI(180),CR-TI(180),NI-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),ZN-TI(180),SE-TI(180),V-TI(180),CO-TI(180),HG-T(28),MG-TI(180),FE-TI(180),MN-TI(180),NA-TI(180),CA-TI(180),CD-TI(180),K-TI(180)
L2156730-08F	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		HOLD-8151(14),NYTCL-8081(14),HOLD-8270(14),HOLD-8082(14)
L2156730-08G	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		HOLD-8151(14),NYTCL-8081(14),HOLD-8270(14),HOLD-8082(14)
L2156730-08H	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		HOLD-8151(14),NYTCL-8081(14),HOLD-8270(14),HOLD-8082(14)
L2156730-08I	Glass 500ml/16oz unpreserved	A	NA		2.5	Y	Absent		HOLD-8151(14),NYTCL-8081(14),HOLD-8270(14),HOLD-8082(14)
L2156730-09A	Vial MeOH preserved	A	NA		2.5	Y	Absent		NYTCL-8260HLW(14)
L2156730-09B	Vial water preserved	A	NA		2.5	Y	Absent	16-OCT-21 09:02	NYTCL-8260HLW(14)
L2156730-09C	Vial water preserved	A	NA		2.5	Y	Absent	16-OCT-21 09:02	NYTCL-8260HLW(14)
L2156730-09D	Plastic 120ml unpreserved	A	NA		2.5	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2156730-09E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),NI-TI(180),CR-TI(180),TL-TI(180),SB-TI(180),ZN-TI(180),PB-TI(180),SE-TI(180),CU-TI(180),CO-TI(180),V-TI(180),MG-TI(180),HG-T(28),MN-TI(180),FE-TI(180),CD-TI(180),CA-TI(180),NA-TI(180),K-TI(180)
L2156730-09F	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		NYTCL-8270(14),HERB-APA(14),NYTCL-8081(14),NYTCL-8082(365)
L2156730-09G	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		HOLD-CONTINGENCY(14)
L2156730-09H	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		HOLD-CONTINGENCY(14)
L2156730-09I	Glass 500ml/16oz unpreserved	A	NA		2.5	Y	Absent		HOLD-CONTINGENCY(14)
L2156730-10A	Vial MeOH preserved	A	NA		2.5	Y	Absent		HOLD-8260HLW(14)
L2156730-10B	Vial water preserved	A	NA		2.5	Y	Absent	16-OCT-21 09:02	HOLD-8260HLW(14)
L2156730-10C	Vial water preserved	A	NA		2.5	Y	Absent	16-OCT-21 09:02	HOLD-8260HLW(14)
L2156730-10D	Plastic 120ml unpreserved	A	NA		2.5	Y	Absent		TS(7)
L2156730-10E	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),AL-TI(180),TL-TI(180),SB-TI(180),ZN-TI(180),SE-TI(180),CU-TI(180),PB-TI(180),V-TI(180),CO-TI(180),MN-TI(180),HG-T(28),FE-TI(180),MG-TI(180),CD-TI(180),CA-TI(180),K-TI(180),NA-TI(180)
L2156730-10F	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		HOLD-CONTINGENCY(14),NYTCL-8081(14)
L2156730-10G	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		HOLD-CONTINGENCY(14),NYTCL-8081(14)
L2156730-10H	Glass 120ml/4oz unpreserved	A	NA		2.5	Y	Absent		HOLD-CONTINGENCY(14),NYTCL-8081(14)
L2156730-10I	Glass 500ml/16oz unpreserved	A	NA		2.5	Y	Absent		HOLD-CONTINGENCY(14),NYTCL-8081(14)
L2156730-11A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),SB-TI(180),ZN-TI(180),PB-TI(180),SE-TI(180),CU-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MG-TI(180),HG-T(28),MN-TI(180),CA-TI(180),CD-TI(180),NA-TI(180),K-TI(180)
L2156730-11B	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		TS(7),NYTCL-8081(14)
L2156730-12A	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),AL-TI(180),TL-TI(180),NI-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),SB-TI(180),CU-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MN-TI(180),HG-T(28),MG-TI(180),CD-TI(180),CA-TI(180),K-TI(180),NA-TI(180)
L2156730-12B	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		TS(7),NYTCL-8081(14)

*Values in parentheses indicate holding time in days

Project Name: HKV2101
Project Number: Not Specified

Lab Number: L2156730
Report Date: 10/29/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2156730-13A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),TL-TI(180),NI-TI(180),AL-TI(180),CR-TI(180),SE-TI(180),ZN-TI(180),CU-TI(180),SB-TI(180),PB-TI(180),V-TI(180),CO-TI(180),MN-TI(180),FE-TI(180),MG-TI(180),HG-T(28),CD-TI(180),NA-TI(180),K-TI(180),CA-TI(180)
L2156730-13B	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		TS(7),NYTCL-8081(14)
L2156730-14A	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),TL-TI(180),NI-TI(180),CR-TI(180),CU-TI(180),ZN-TI(180),SB-TI(180),PB-TI(180),SE-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),NA-TI(180),CD-TI(180),K-TI(180)
L2156730-14B	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		TS(7),NYTCL-8081(14)
L2156730-15A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),ZN-TI(180),SB-TI(180),SE-TI(180),PB-TI(180),CO-TI(180),V-TI(180),MG-TI(180),MN-TI(180),FE-TI(180),HG-T(28),K-TI(180),CD-TI(180),CA-TI(180),NA-TI(180)
L2156730-15B	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		TS(7),NYTCL-8081(14)
L2156730-16A	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),TL-TI(180),AL-TI(180),NI-TI(180),CU-TI(180),SB-TI(180),ZN-TI(180),SE-TI(180),PB-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MG-TI(180),MN-TI(180),HG-T(28),CD-TI(180),CA-TI(180),K-TI(180),NA-TI(180)
L2156730-16B	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		TS(7),NYTCL-8081(14)
L2156730-17A	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),NI-TI(180),CR-TI(180),TL-TI(180),PB-TI(180),ZN-TI(180),CU-TI(180),SE-TI(180),SB-TI(180),V-TI(180),CO-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),NA-TI(180),K-TI(180)
L2156730-17B	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		TS(7),NYTCL-8081(14)
L2156730-18A	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		HOLD-METAL(180)
L2156730-18B	Glass 60mL/2oz unpreserved	A	NA		2.5	Y	Absent		TS(7),NYTCL-8081(14)

*Values in parentheses indicate holding time in days

Project Name:	HKV2101	**Lab Number:**	L2156730
Project Number:	Not Specified	**Report Date:**	10/29/21

GLOSSARY

Acronyms

DL	- Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LOD	- Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
LOQ	- Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.) Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
NR	- No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HKV2101	**Lab Number:**	L2156730
Project Number:	Not Specified	**Report Date:**	10/29/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HKV2101	**Lab Number:**	L2156730
Project Number:	Not Specified	**Report Date:**	10/29/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Report Format: DU Report with 'J' Qualifiers

Project Name:	HKV2101	**Lab Number:**	L2156730
Project Number:	Not Specified	**Report Date:**	10/29/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

ALPHA ANALYTICAL

NEW YORK CHAIN OF CUSTODY

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page: 1 of 2

Date Rec'd in Lab: 10/16/21

ALPHA Job #: L2156730

Client Information
Client: PWGC
Address: 638 Johnson Ave Bohemia NY 11716
Phone: 631 589 6353
Fax:
Email: Thomas.Melcer@aecom.com

Project Information
Project Name: HKV 2101
Project Location:
Project #
(Use Project name as Project #) ☐
Project Manager: Thomas Melcer
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☒ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☒ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
Hold Deeper Samples; To be run based on Shallower results

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Pesticides	TAL metals	VOC	SVOC	Inorganics	PCB's			Total Bottle	Sample Specific Comments
56730-01	Grid AA_0-2	10/15/21	14:45	S	JL	X	X								
-02	Grid AA_18-24		14:45			X	X								hold
-03	Grid AB_0-2		12:06			X	X								
-04	Grid AB_18-24		12:06			X	X								hold
-05	Grid AC_0-2		11:24			X	X								
-06	Grid AC_18-24		11:24			X	X								hold
-07	Grid AD_0-2		09:05			X	X	X	X	X	X				
-08	Grid AD_18-24		09:05			X	X	X	X	X	X				hold
-09	Grid L_0-2		14:01			X	X								
-10	Grid L_18-24		14:01			X	X								hold

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type													
Preservative													

Relinquished By:	Date/Time	Received By:	Date/Time
PWGC	10/15/21 1500		10/15/21 1500
	10/15/21 2200		10/15/21 20:30
	10/16/21 0300		10/16/21 0300
			10/16/21 03:00

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 2

Date Rec'd in Lab: 10/16/21

ALPHA Job #: L2156730

Client Information
Client: PWGC
Address: 630 Johnson Ave Bohemia, NY 11716
Phone:
Fax:
Email: Thomas.Meliza@pwgc.com

Project Information
Project Name: HKV2101
Project Location:
Project #
(Use Project name as Project #) ☐
Project Manager: Thomas Meliza
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information
☒ Same as Client Info
PO #

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☒ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
Hold Deeper Samples; To be run based on Shallow results

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Pesticides	TAL metals	VOC	SVOC	Pesticides	PCBs			Total Bottle	Sample Specific Comments
56730-11	Grid M_0-2	10/15/21	13:30	SS	JL	X	X								
-12	Grid M_18-24		13:30			X	X								hold
-13	Grid N_0-2		10:20			X	X								
-14	Grid N_18-24		10:20			X	X								hold
-15	Grid O_0-2		09:50			X	X								
-16	Grid O_18-24		09:50			X	X								hold
-17	Grid Z_0-2		15:27			X	X								
-18	Grid Z_18-24		15:27			X	X								hold

Container Type
Preservative

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
PWGC	10/15/21 18:00		10/15 18:00
	10/15/21 20:20		10/15/21 20:20
			10/16/21 0:10
	10/16/21 0300		10/16/21 03:00

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONSTITUTIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

APPENDIX B SOIL BORING LOGS

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353
PWGROSSER.COM
630 JOHNSON AVENUE, STE 7
BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

PROJECT #:	HKV2101		
SITE ADDRESS:	4285 Middle Country Rd, Calverton, NY		
BORING ID:	SB001	BORING DEPTH (FT): 10	CORE LENGTH (FT): 5
GRID:	N/A	BORING DIAMETER (IN): 2	WELL DIAMETER (IN): N/A
DRILLING CONTRACTOR:	Associated Environmental	DATE STARTED: 10/12/2021	DATE FINISHED: 10/12/2021
DRILLING METHOD:	Direct Push	TIME STARTED: 10:55	TIME FINISHED: 11:05
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Macrocore	PROJECT MANAGER: Tom Melia	LOGGED BY: Michael Pecoraro

DEPTH (feet)	SAMPLE INTERVAL	USCS KEY	RECOVERY (feet)	DESCRIPTION NAME (USCS): color, moist, plasticity, gravel, odor	PID Reading (ppm)	DEPTH (feet)	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0–1				(Topsoil) Brown to Gray, dry and no odor	0		
1–5			4	(GW) Brown, Medium Grain Sand with Gravel, well sorted; dry and no odor	0		
5–9			4	(GW) Light Brown, Medium Grain Sand with Gravel, well sorted; dry and no odor	0		
9–10				(GW) Light Brown to Gray, Medium Grain Sand with Gravel, well sorted; dry and no odor	0		

PROJECT #:	HKV2101		
SITE ADDRESS:	4285 Middle Country Rd, Calverton, NY		
BORING ID:	SB002	BORING DEPTH (FT): 10	CORE LENGTH (FT): 5
GRID:	N/A	BORING DIAMETER (IN): 2	WELL DIAMETER (IN): N/A
DRILLING CONTRACTOR:	Associated Environmental	DATE STARTED: 10/12/2021	DATE FINISHED: 10/12/2021
DRILLING METHOD:	Direct Push	TIME STARTED: 11:20	TIME FINISHED: 11:30
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Macrocore	PROJECT MANAGER: Tom Melia	LOGGED BY: Michael Pecoraro

DEPTH (feet)	SAMPLE INTERVAL	USCS KEY	RECOVERY (feet)	DESCRIPTION NAME (USCS): color, moist, plasticity, gravel, odor	PID Reading (ppm)	DEPTH (feet)	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0–1			4	(Topsoil) Brown, dry and no odor	0	0–1	
1–3				(GW) Brown, Medium Grain Sand with Gravel, well sorted; dry and no odor	0	1–3	
3–5				(GW) Light Brown, Medium Grain Sand with Gravel, well sorted; dry and no odor	0	3–5	
5–6			5	(ML) Brown, Clayey Silt, Low Plasticity, dry and no odor	0	5–6	
6–10				(GW) Light Brown to Gray, Medium Grain Sand with Gravel, well sorted; dry and no odor	0	6–10	

PROJECT #:	HKV2101		
SITE ADDRESS:	4285 Middle Country Rd, Calverton, NY		
BORING ID:	SB003	BORING DEPTH (FT): 10	CORE LENGTH (FT): 5
GRID:	N/A	BORING DIAMETER (IN): 2	WELL DIAMETER (IN): N/A
DRILLING CONTRACTOR:	Associated Environmental	DATE STARTED: 10/12/2021	DATE FINISHED: 10/12/2021
DRILLING METHOD:	Direct Push	TIME STARTED: 11:40	TIME FINISHED: 11:47
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Macrocore	PROJECT MANAGER: Tom Melia	LOGGED BY: Michael Pecoraro

DEPTH (feet)	SAMPLE INTERVAL	USCS KEY	RECOVERY (feet)	DESCRIPTION NAME (USCS): color, moist, plasticity, gravel, odor	PID Reading (ppm)	DEPTH (feet)	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0–1				(Topsoil) Brown, dry and no odor	0	0–1	
1–4			4	(GW) Brown, Medium Grain Sand with Gravel, well sorted; dry and no odor	0	1–4	
4–8			4	(ML) Brown, Clayey Silt, Low Plasticity, dry and no odor	0	4–8	
8–10				(GW) Light Brown to Gray, Medium Grain Sand with Gravel, well sorted; dry and no odor	0	8–10	

PROJECT #:	HKV2101
SITE ADDRESS:	4285 Middle Country Rd, Calverton, NY
BORING ID:	SB004
GRID:	N/A
DRILLING CONTRACTOR:	Associated Environmental
DRILLING METHOD:	Direct Push
DRILLING EQUIPMENT:	Geoprobe 7822DT
SAMPLING METHOD:	Macrocore

BORING DEPTH (FT): 10	CORE LENGTH (FT): 5
BORING DIAMETER (IN): 2	WELL DIAMETER (IN): N/A
DATE STARTED: 10/12/2021	DATE FINISHED: 10/12/2021
TIME STARTED: 12:05	TIME FINISHED: 12:12
LATITUDE: N/A	LONGITUDE: N/A
PROJECT MANAGER: Tom Melia	LOGGED BY: Michael Pecoraro

DEPTH (feet)	SAMPLE INTERVAL	USCS KEY	RECOVERY (feet)	DESCRIPTION NAME (USCS): color, moist, plasticity, gravel, odor	PID Reading (ppm)
0–2			4	(Topsoil) Brown, dry and no odor	0
2–6				(SM) Light Brown, Silty Sand; dry and no odor	0
6–10			4	(GW) Light Brown to Gray, Medium Grain Sand with Gravel, well sorted; dry and no odor	0

DEPTH (feet): 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

PROJECT #:	HKV2101
SITE ADDRESS:	4285 Middle Country Rd, Calverton, NY
BORING ID:	SB005
GRID:	N/A
DRILLING CONTRACTOR:	Associated Environmental
DRILLING METHOD:	Direct Push
DRILLING EQUIPMENT:	Geoprobe 7822DT
SAMPLING METHOD:	Macrocore

BORING DEPTH (FT): 10	CORE LENGTH (FT): 5
BORING DIAMETER (IN): 2	WELL DIAMETER (IN): N/A
DATE STARTED: 10/12/2021	DATE FINISHED: 10/12/2021
TIME STARTED: 12:25	TIME FINISHED: 12:32
LATITUDE: N/A	LONGITUDE: N/A
PROJECT MANAGER: Tom Melia	LOGGED BY: Michael Pecoraro

DEPTH (feet)	SAMPLE INTERVAL	USCS KEY	RECOVERY (feet)	DESCRIPTION NAME (USCS): color, moist, plasticity, gravel, odor	PID Reading (ppm)	DEPTH (feet)	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0–1			3	(Topsoil) Brown, dry and no odor	0	0–1	
1–2				(SM) Light Brown, Silty Sand; dry and no odor	0	1–2	
2–5				(GW) Light Brown to Gray, Medium Grain Sand with Gravel, well sorted; dry and no odor	0	2–5	
5–10			5			5–10	

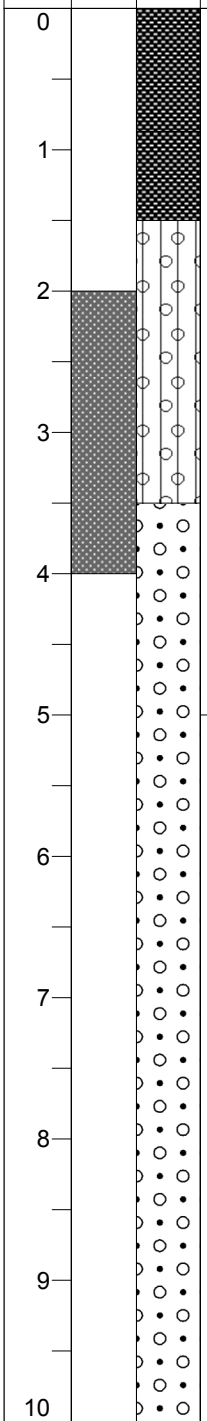
P.W. Grosser Consulting | **End of Boring Depth (feet):** 10 | **Water Table Symbol:** ▼ | Page 1 of 1

PROJECT #:	HKV2101
SITE ADDRESS:	4285 Middle Country Rd, Calverton, NY
BORING ID:	SB006
GRID:	N/A
DRILLING CONTRACTOR:	Associated Environmental
DRILLING METHOD:	Direct Push
DRILLING EQUIPMENT:	Geoprobe 7822DT
SAMPLING METHOD:	Macrocore

PWGC

BORING DEPTH (FT): 10	CORE LENGTH (FT): 5
BORING DIAMETER (IN): 2	WELL DIAMETER (IN): N/A
DATE STARTED: 10/12/2021	DATE FINISHED: 10/12/2021
TIME STARTED: 12:45	TIME FINISHED: 12:52
LATITUDE: N/A	LONGITUDE: N/A
PROJECT MANAGER: Tom Melia	LOGGED BY: Michael Pecoraro

DEPTH (feet)	SAMPLE INTERVAL	USCS KEY	RECOVERY (feet)	DESCRIPTION NAME (USCS): color, moist, plasticity, gravel, odor	PID Reading (ppm)	DEPTH (feet)	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0–1				(Topsoil) Brown, dry and no odor	0	0–1	
1–3			4	(GM) Brown, Silty Sand with Gravel; dry and no odor	0	1–3	
3–10			5	(GW) Light Brown to Gray, Medium Grain Sand with Gravel, well sorted; dry and no odor	0	3–10	



P.W. Grosser Consulting	**End of Boring Depth (feet):** 10	**Water Table Symbol:** ▼	Page 1 of 1

PROJECT #:	HKV2101		
SITE ADDRESS:	4285 Middle Country Rd, Calverton, NY		
BORING ID:	SB007	BORING DEPTH (FT): 10	CORE LENGTH (FT): 5
GRID:	N/A	BORING DIAMETER (IN): 2	WELL DIAMETER (IN): N/A
DRILLING CONTRACTOR:	Associated Environmental	DATE STARTED: 10/12/2021	DATE FINISHED: 10/12/2021
DRILLING METHOD:	Direct Push	TIME STARTED: 13:10	TIME FINISHED: 13:17
DRILLING EQUIPMENT:	Geoprobe 7822DT	LATITUDE: N/A	LONGITUDE: N/A
SAMPLING METHOD:	Macrocore	PROJECT MANAGER: Tom Melia	LOGGED BY: Michael Pecoraro

DEPTH (feet)	SAMPLE INTERVAL	USCS KEY	RECOVERY (feet)	DESCRIPTION NAME (USCS): color, moist, plasticity, gravel, odor	PID Reading (ppm)	DEPTH (feet)	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
0–1				(Topsoil) Brown, dry and no odor	0	0–1	
1–4			5	(GM) Brown, Silty Sand with Gravel; dry and no odor	0	1–4	
4–10			4	(GW) Light Brown to Gray, Medium Grain Sand with Gravel, well sorted; dry and no odor	0	4–10	

PROJECT #:	HKV2101
SITE ADDRESS:	4285 Middle Country Rd, Calverton, NY
BORING ID:	SB008
GRID:	N/A
DRILLING CONTRACTOR:	Associated Environmental
DRILLING METHOD:	Direct Push
DRILLING EQUIPMENT:	Geoprobe 7822DT
SAMPLING METHOD:	Macrocore

PWGC

BORING DEPTH (FT): 10	CORE LENGTH (FT): 5
BORING DIAMETER (IN): 2	WELL DIAMETER (IN): N/A
DATE STARTED: 10/12/2021	DATE FINISHED: 10/12/2021
TIME STARTED: 13:30	TIME FINISHED: 13:40
LATITUDE: N/A	LONGITUDE: N/A
PROJECT MANAGER: Tom Melia	LOGGED BY: Michael Pecoraro

DEPTH (feet)	SAMPLE INTERVAL	USCS KEY	RECOVERY (feet)	DESCRIPTION NAME (USCS): color, moist, plasticity, gravel, odor	PID Reading (ppm)
0–1			4	(Topsoil) Brown, dry and no odor	0
1–3				(GM) Brown, Silty Sand with Gravel; dry and no odor	0
3–8			3	(ML) Light Brown to Gray, Clayey Silt, Low Plasticity, dry and no odor	0
8–10				(GW) Brown, Medium Grain Sand with Gravel, well sorted; dry and no odor	0

DEPTH (feet): 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

PROJECT #:	HKV2101
SITE ADDRESS:	4285 Middle Country Rd, Calverton, NY
BORING ID:	SB009
GRID:	N/A
DRILLING CONTRACTOR:	Associated Environmental
DRILLING METHOD:	Direct Push
DRILLING EQUIPMENT:	Geoprobe 7822DT
SAMPLING METHOD:	Macrocore

BORING DEPTH (FT): 10	CORE LENGTH (FT): 5
BORING DIAMETER (IN): 2	WELL DIAMETER (IN): N/A
DATE STARTED: 10/12/2021	DATE FINISHED: 10/12/2021
TIME STARTED: 13:55	TIME FINISHED: 14:02
LATITUDE: N/A	LONGITUDE: N/A
PROJECT MANAGER: Tom Melia	LOGGED BY: Michael Pecoraro

DEPTH (feet)	SAMPLE INTERVAL	USCS KEY	RECOVERY (feet)	DESCRIPTION NAME (USCS): color, moist, plasticity, gravel, odor	PID Reading (ppm)
0–1			4	(Topsoil) Brown, dry and no odor	0.4
1–4				(Asphalt, Historic Fill, Brick) Black to Red; dry and no odor	0.4
4–8			4	(GM) Brown, Silty Sand with Gravel; dry and no odor	0
8–10				(GW) Light Brown, Medium Grain Sand with Gravel, well sorted; dry and no odor	0

DEPTH (feet): 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS

P.W. Grosser Consulting	**End of Boring Depth (feet):** 10	**Water Table Symbol:** ▼	Page 1 of 1

PROJECT #:	HKV2101
SITE ADDRESS:	4285 Middle Country Rd, Calverton, NY
BORING ID:	SB010
GRID:	N/A
DRILLING CONTRACTOR:	Associated Environmental
DRILLING METHOD:	Direct Push
DRILLING EQUIPMENT:	Geoprobe 7822DT
SAMPLING METHOD:	Macrocore

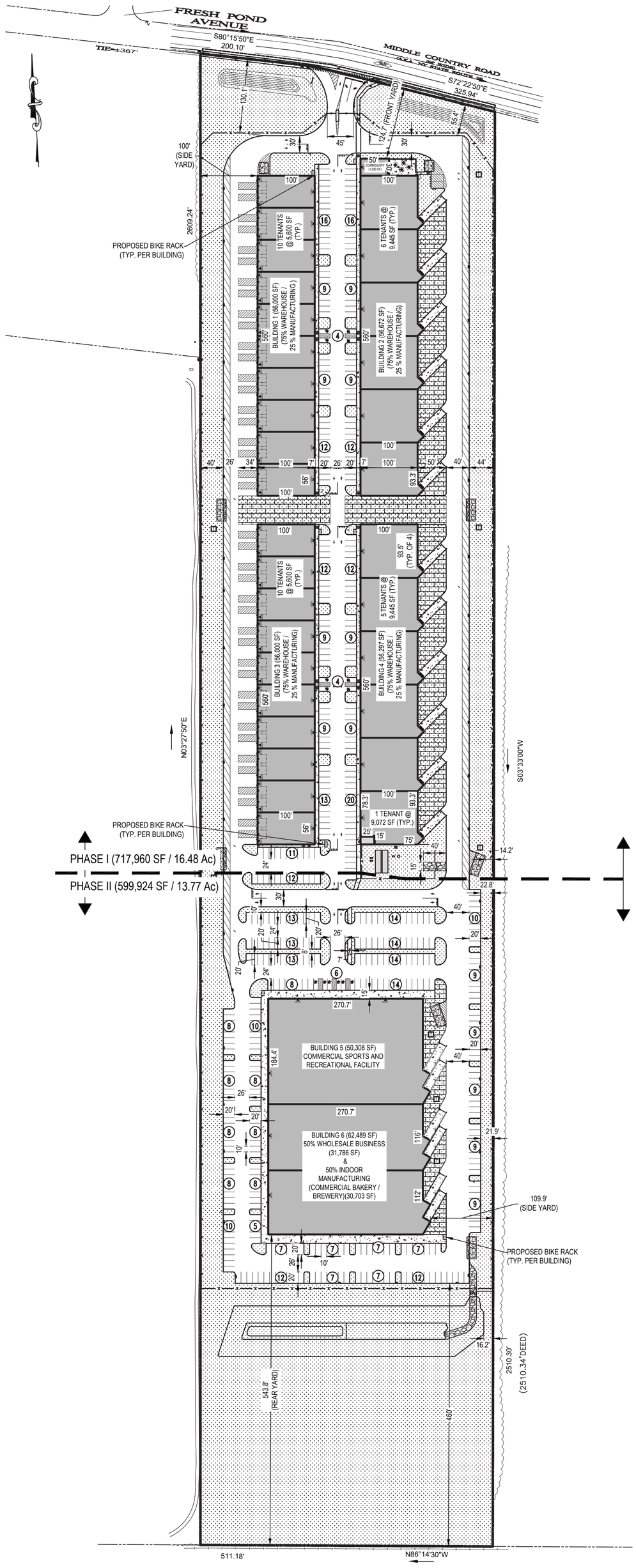
PWGC

BORING DEPTH (FT): 10	CORE LENGTH (FT): 5
BORING DIAMETER (IN): 2	WELL DIAMETER (IN): N/A
DATE STARTED: 10/12/2021	DATE FINISHED: 10/12/2021
TIME STARTED: 14:15	TIME FINISHED: 14:22
LATITUDE: N/A	LONGITUDE: N/A
PROJECT MANAGER: Tom Melia	LOGGED BY: Michael Pecoraro

DEPTH (feet)	SAMPLE INTERVAL	USCS KEY	RECOVERY (feet)	DESCRIPTION NAME (USCS): color, moist, plasticity, gravel, odor	PID Reading (ppm)
0–1			5	(Topsoil) Brown, dry and no odor	0
1–5				(Asphalt, Historic Fill, Brick) Black to Red; dry and no odor	0
5–8			5		
8–10				(GM) Brown to Gray, Silty Sand with Gravel; dry and no odor	0

DEPTH (feet): 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS



GRAPHIC SCALE

120 0 60 120 240 480

(IN FEET)

1 inch = 120 ft.

LEGEND

SCALE OF SYMBOLS = 1" = 120'

EXISTING	ITEM	PROPOSED
	PROPERTY LINE	
	BUILDING	
	CONCRETE CURB	
	CONCRETE SIDEWALK	
	LANDSCAPE AREA	
	PERVIOUS PAVERS	
	DUMPSTER ENCLOSURE	
	12' x 34' LOADING SPACE	
	LOADING DOCK RETAINING WALLS	
	PARKING COUNT	9
	OVERHEAD DOOR	
	DOOR	
x x	FENCE	x x x x
	BIKE RACK	
	HYDRANT	

N.Y.S. NEW YORK CITY ONE CALL CENTER 1-800-272-4480 STOP-CALL-THEN DIG Safely

SANITARY CALCULATIONS

SITE IS LOCATED IN GROUNDWATER MANAGEMENT ZONE III = 300 GPD/ACRE

PERMITTED DENSITY = 30.2545 ACRES x 300 GPD/ACRE = 9,076 GPD

SANITARY DENSITY FLOW

PHASE I
PROPOSED COMMISSARY FLOW (COMMISSARY NOT OPEN TO PUBLIC) - 0.04 GPD / SF x 1,500 SF = 60 GPD
PROPOSED BUILDING 1 FLOW (GENERAL INDUSTRIAL) - 0.04 GPD / SF x 56,000 SF = 2,240 GPD
PROPOSED BUILDING 2 FLOW (GENERAL INDUSTRIAL) - 0.04 GPD / SF x 56,672 SF = 2,267 GPD
PROPOSED BUILDING 3 FLOW (GENERAL INDUSTRIAL) - 0.04 GPD / SF x 56,000 SF = 2,240 GPD
PROPOSED BUILDING 4 FLOW (GENERAL INDUSTRIAL) - 0.04 GPD / SF x 56,297 SF = 2,252 GPD
PHASE I TOTAL = 9,059 GPD

PHASE II
PROPOSED SPORTS FACILITY BUILDING 5 FLOW (FITNESS CENTER WITH SHOWERS) - 0.1 GPD / SF x 50,308 SF = 5,031 GPD
PROPOSED WHOLESALE BUSINESS BUILDING 6 FLOW (RETAIL) - 0.03 GPD / SF x 31,786 SF = 954 GPD
PROPOSED INDOOR MANUFACTURING BUILDING 6 FLOW (COMMERCIAL BAKERY) - 0.04 GPD / SF x 30,703 SF = 1,228 GPD
PHASE II TOTAL = 7,213 GPD

PHASE I + PHASE II TOTAL SANITARY DENSITY FLOW = 16,272 GPD

7,196 GPD OVER PERMITTED DENSITY. SEWAGE TREATMENT PLANT (STP) PROPOSED. REFER TO PLANS BY OTHERS FOR STP DETAILS.

KTICHEN / GRAY LOAD FLOW

PHASE I
PROPOSED COMMISSARY FLOW (COMMISSARY NOT OPEN TO PUBLIC) - 2.5 GPD / SEAT x 40 SEATS = 100 GPD
PROPOSED BUILDING 1 FLOW (GENERAL INDUSTRIAL) - ASSUMED TENANT DOES NOT PRODUCE INDUSTRIAL PROCESS WATER
PROPOSED BUILDING 2 FLOW (GENERAL INDUSTRIAL) - ASSUMED TENANT DOES NOT PRODUCE INDUSTRIAL PROCESS WATER
PROPOSED BUILDING 3 FLOW (GENERAL INDUSTRIAL) - ASSUMED TENANT DOES NOT PRODUCE INDUSTRIAL PROCESS WATER
PROPOSED BUILDING 4 FLOW (GENERAL INDUSTRIAL) - ASSUMED TENANT DOES NOT PRODUCE INDUSTRIAL PROCESS WATER
PHASE I TOTAL = 100 GPD

PHASE II
PROPOSED BUILDING 5 FLOW (SPORTS FACILITY)(FITNESS CENTER WITH SHOWERS) - 0.2 GPD / SF x 50,308 SF = 10,062 GPD*
* (ASSUMED TENANT DOES NOT HAVE FOOD SERVICE)
PROPOSED BUILDING 6 FLOW (WHOLESALE BUSINESS)(RETAIL) - N / A
PROPOSED BUILDING 6 FLOW (INDOOR MANUFACTURING)(COMMERCIAL BAKERY) - 0.02 GPD / SF x 30,703 SF = 614 GPD
PHASE II TOTAL = 10,676 GPD

PHASE I + PHASE II TOTAL KITCHEN / GRAY LOAD FLOW = 10,776 GPD

TOTAL HYDRAULIC FLOW (SANITARY DENSITY FLOW + KITCHEN / GRAY LOAD FLOW)

PHASE I = (9,059 GPD + 100 GPD) = 9,159 GPD
PHASE II = (7,213 GPD + 10,776 GPD) = 17,989 GPD
PHASE 1 + PHASE II = 27,148 GPD

BULK ZONING TABLE

ZONING DISTRICT: INDUSTRIAL C

ITEM	SECTION	PERMITTED/REQUIRED	PROPOSED
PERMITTED USES	§ 301-122.A (2), (4), & (12)	(2) WAREHOUSE, (4) WHOLESALE BUSINESSES, (10) COMMERCIAL SPORTS & RECREATION FACILITES (12) MANUFACTURING (INDOOR)	(2) WAREHOUSE, (4) WHOLESALE BUSINESSES, (10) COMMERCIAL SPORTS & RECREATION FACILITES (12) MANUFACTURING (INDOOR)
ACCESSORY USES	§ 301-122.C.1	COMMISSARY FOR OTHER BUILDING	COMMISSARY FOR BUILDINGS PROVIDED (1,500 SF)
ACCESSORY USES	§ 301-122.C.2.B	PARCEL SHALL HAVE FRONTAGE ON AN ARTERIAL ROAD	FRONTAGE ALONG MIDDLE COUNTRY ROAD (NYS ROUTE 25)
PROHIBITED USES	§ 301-122.D.3	OUTDOOR STORAGE	NO OUTDOOR STORAGE PROPOSED
LOT, YARD, & BULK REQUIREMENTS	§ 301-123.B	20% OF LOT SHALL BE CONTIGUOUS OPEN SPACE AREAS WHICH SHIELD VIEWS OF THE DEVELOPMENT FROM ARTERIAL ROADS 0.20 x 1,317,884 SF = 263,577 SF	435,522 SF (33.05%) OF CONTIGUOUS OPEN SPACE LANDSCAPE AREA PROVIDED. DENSE LANDSCAPE BUFFER IN FRONT YARD TO SHIELD DEVELOPMENT PROVIDED
SUPPLEMENTARY GUIDELINES	§ 301-124.A.1	DEVELOPMENT OF MULTIPLE BUILDINGS IN THE INDUSTRIAL C DISTRICT SHALL BE PLANNED IN A CAMPUS LAYOUT	COMPLIES
SUPPLEMENTARY GUIDELINES	§ 301-124.A.2	CONTINUOUS SIDEWALKS, AND BIKE RACKS CLOSE TO BUSINESS ENTRANCES SHALL BE PROVIDED FOR PROPERTIES FRONTING ROUTE 25	CONTINUOUS SIDEWALKS AND BIKE RACKS PROVIDED
SUPPLEMENTARY GUIDELINES	§ 301-124.A.4.A	DUMPSTER AREAS SHALL BE SCREENED BY WOOD FENCES OR LANDSCAPING	DUMPSTERS SHALL BE IN 6 FT HIGH WOOD FENCE ENCLOSURES
DUMPSTERS	§ 245-8	DUMPSTER SCREENING OF 5 FT MIN / 6 FT MAX HEIGHT	DUMPSTERS SHALL BE IN 6 FT HIGH WOOD FENCE ENCLOSURES
SCREENING AND BUFFER REGULATIONS SETBACK	§ 301-124.A.4.B	20 FT OF PLANTING BUFFER ALONG FRONTAGE & 10 FT PLANTING BUFFER ALONG ALL OTHER PROPERTY LINES	55.4 FT MINIMUM PLANTED BUFFER ALONG FRONT YARD, 14.2 FT MINIMUM BUFFER ON SIDE YARDS, & 460 FT MINIMUM BUFFER IN REAR YARD
PARKING STANDARDS	§ 301-124.B.2	PLANTED BERMS SHALL BE USED TO SCREEN AUTOMOBILES FROM PUBLIC R.O.W.	LANDSCAPE & PLANTED BERMS PROVIDED
PARKING STANDARDS	§ 301-124.B.3	OFF-STREET PARKING PROHIBITED IN FRONT YARD, WITHIN 20 FT OF SIDE YARD, AND 10 FT OF REAR YARD	NO PARKING IN FRONT YARD PROPOSED 20 FT OR GREATER FROM PROPOSED PARKING TO SIDE YARD PROPERTY LINE NO PARKING IN REAR PROPOSED
MINIMUM LOT AREA	§ 301-ATTACHMENT 3	80,000 SF	± 1,317,884 SF
MINIMUM LOT WIDTH	§ 301-ATTACHMENT 3	300 FT	511.18 FT
BUILDING COVERAGE (FOOTPRINT) (WITHOUT SEWER)	§ 301-ATTACHMENT 3	40% ±1,317,884 SF x 0.40 = 527,154 SF	25.74% 339,266 SF / ±1,317,884 SF = 0.2574
MAXIMUM IMPERVIOUS SURFACE	§ 301-ATTACHMENT 3	60% ±1,317,884 SF x 0.60 = 790,730 SF	59.24% 780,759 SF / 1,317,884 SF = 0.5924
MAXIMUM HEIGHT OF BUILDINGS	§ 301-ATTACHMENT 3	30 FT	30 FT
MINIMUM FRONT YARD DEPTH	§ 301-ATTACHMENT 3	30 FT	124.7 FT
MINIMUM SIDE YARD DEPTH	§ 301-ATTACHMENT 3	30 FT / 60 COMBINED FOR BOTH SIDES	100 FT / 209.9 FT
MINIMUM REAR YARD DEPTH	§ 301-ATTACHMENT 3	50 FT	460.2 FT

PROJECT DATA

SITE ADDRESS	4285 MIDDLE COUNTRY ROAD CALVERTON, NY 11933
OWNER / APPLICANT	HK VENTURES, LLC 147 STEAMBOAT ROAD GREAT NECK, NY 11024 c/o SCOTT JOHNS
TAX MAP NUMBER	DISTRICT: 600, SECTION: 116, BLOCK: 1, LOT: 2
SITE AREA	1,317,884 SF (30.2545 Ac)
CURRENT ZONING	INDUSTRIAL C
EXISTING USE	VACANT
PROPOSED USE	PRIMARY USES: WAREHOUSE WHOLESALE BUSINESS COMMERCIAL SPORTS & RECREATION FACILITIES MANUFACTURING (INDOOR)
PROPOSED BUILDING AREA (GFA)	PHASE I BUILDING 1 = 56,000 SF BUILDING 2 = 56,672 SF BUILDING 3 = 56,000 SF BUILDING 4 = 56,297 SF COMMISSARY = 1,500 SF TOTAL = 226,469 SF PHASE II (TO BE CONSTRUCTED ONCE PHASE I IS COMPLETED AND OPERATING) BUILDING 5 = 50,308 SF BUILDING 6 = 62,489 SF TOTAL = 112,797 SF PHASE I + PHASE II = 339,266 SF (25.74%)
PERVIOUS PAVERS / LANDSCAPE AREA	537,125 SF (40.76%)
IMPERVIOUS / PAVEMENT / CONCRETE AREA (EXCLUDES BUILDING AREAS)	441,493 SF (33.50%)

PARKING CALCULATIONS

ITEM	SECTION	PERMITTED/REQUIRED	PROPOSED
MINIMUM STALL SIZE	§ 301-231.E.2	10 FT x 20 FT	10' x 20' (8' x 20' ACCESSIBLE STALLS)
MINIMUM AISLE WIDTH	§ 301-231.E.1	24' (TWO WAY) WITH 90° PARKING 18' (ONE WAY) WITH 60° PARKING 12' (ONE WAY) WITH 45° PARKING	24'-0" (MIN. TWO-WAY)
NUMBER OF LOADING SPACES REQUIRED	§ 301-232.A	FLOOR AREAS PER BUILDING 15,000 TO 25,000 = 1 SPACES 25,001 TO 40,000 = 2 SPACES 40,001 TO 100,000 = 3 SPACES +60,000 SF = 1 ADDITIONAL SPACE 3 SPACES REQUIRED PER BUILDING x 6 BUILDINGS = 18 SPACES REQUIRED	60 SPACES PROVIDED
MINIMUM LOADING SPACE SIZE	§ 301-232.B	12 FT WIDE x 14 FT LONG	(40) 12 FT WIDE x 34 FT LONG (2) 12 FT WIDE x 20 FT LONG (18) 13 FT WIDE x 55 FT LONG TOTAL PROVIDED = 60 SPACES
MINIMUM NUMBER OF PARKING STALLS REQUIRED	§ 301 ATTACHMENT 1	BUILDINGS 1 & 3 (56,000 SF) *PARKING PER BUILDING 25% MANUFACTURING SPACE (14,000 SF) 75% WAREHOUSE SPACE (42,000 SF) * MANUFACTURING ESTABLISHMENT (14,000 SF / BUILDING) 1 STALL PER 400 SF OF GFA 14,000 SF / 400 SF = 35 STALLS * WAREHOUSE (42,000 SF / BUILDING) 1 STALL PER 1,000 SF UP TO 5,000 SF + 1 STALL PER 10,000 SF 5,000 SF x 1 STALL PER 1,000 SF = 5 STALLS 37,000 SF x 1 STALL / 10,000 SF = 3.7 STALLS TOTAL PARKING FOR BUILDINGS 1 & 3 2 BUILDINGS x (35 + 5 + 3.7) STALLS = 87.4 STALLS	
MINIMUM NUMBER OF PARKING STALLS REQUIRED	§ 301 ATTACHMENT 1	BUILDING 2 (56,672 SF) *PARKING PER BUILDING 25% MANUFACTURING SPACE (14,168 SF) 75% WAREHOUSE SPACE (42,504 SF) *MANUFACTURING ESTABLISHMENT (14,168 SF) 1 STALL PER 400 SF OF GFA 14,168 SF / 400 SF = 35.4 STALLS * WAREHOUSE (42,504 SF) 1 STALL PER 1,000 SF UP TO 5,000 SF + 1 STALL PER 10,000 SF 5,000 SF x 1 STALL PER 1,000 SF = 5 STALLS 37,504 SF x 1 STALL / 10,000 SF = 3.8 STALLS TOTAL PARKING FOR BUILDING 2 = 44.2 STALLS	
MINIMUM NUMBER OF PARKING STALLS REQUIRED	§ 301 ATTACHMENT 1	BUILDING 4 (56,297 SF) *PARKING PER BUILDING 25% MANUFACTURING SPACE (14,074 SF) 75% WAREHOUSE SPACE (42,223 SF) *MANUFACTURING ESTABLISHMENT (14,074 SF) 1 STALL PER 400 SF OF GFA 14,074 SF / 400 SF = 35.2 STALLS * WAREHOUSE (42,223 SF) 1 STALL PER 1,000 SF UP TO 5,000 SF + 1 STALL PER 10,000 SF 5,000 SF x 1 STALL PER 1,000 SF = 5 STALLS 37,223 SF x 1 STALL / 10,000 SF = 3.7 STALLS TOTAL PARKING FOR BUILDING 4 = 43.9 STALLS	527 STALLS (INCLUDES 14 ACCESSIBLE STALLS)
MINIMUM NUMBER OF PARKING STALLS REQUIRED	§ 301 ATTACHMENT 1	BUILDING 5 (50,308 SF) SPORTS & RECREATIONAL FACILITY (50,308 SF) 1 STALL PER 300 SF OF GFA 50,308 SF / 300 SF = 167.7 STALLS TOTAL PARKING FOR BUILDING 5 = 167.7 STALLS	
MINIMUM NUMBER OF PARKING STALLS REQUIRED	§ 301 ATTACHMENT 1	BUILDING 6 (62,489 SF) WHOLESALE BUSINESS (31,786 SF) 1 STALL PER 300 SF OF GFA 31,786 SF / 300 SF = 106.0 STALLS MANUFACTURING (30,703 SF) 1 STALL PER 2 EMPLOYEES BUT NOT LESS THAN 1 PER 400 SF 1 STALL PER 400 SF OF GFA 30,703 SF / 400 SF = 76.8 STALLS TOTAL PARKING FOR BUILDING 5 = 106.0+ 76.8 = 182.8 STALLS	
TOTAL NUMBER OF PARKING STALLS REQUIRED FOR LOT	§ 301 ATTACHMENT 1	87.4 + 44.2 + 43.9 + 167.7 + 182.8 = 526.0 STALLS TOTAL STALLS REQUIRED = 526 STALLS	
ACCESSIBLE PARKING STALLS	§ 301-232.M.1	2% OF TOTAL REQUIRED PARKING = 526 x 2.0% = 10.52 11 ACCESSIBLE PARKING STALLS	14 ACCESSIBLE STALLS

LEGEND

SCALE OF SYMBOLS = 1" = 30' (REFER TO PARTIAL SITE PLANS)

EXISTING	ITEM	PROPOSED
	PROPERTY LINE	
	BUILDING	
	CONCRETE CURB	
	EDGE OF PAVEMENT	
	CONCRETE SIDEWALK	
	LANDSCAPE AREA	
	PERVIOUS PAVERS	
	TRASH ENCLOSURE	
	PARKING COUNT	9
	ACCESSIBLE STRIPING SYMBOL	
	BIKE RACK MOUNTED ON CONCRETE PAD	
	OVERHEAD DOOR	
	LOADING STALL STRIPING	
	LOADING DOCK WALL WITH FALL PROTECTION RAILING	
	CROSSWALK	
	FIRE LANE STRIPING	
	DOOR	EXIT
	SIGN	
	FIRE HYDRANT	
	UTILITY POLE	
	GROUND SIGN	
	FENCE	
	POLE MOUNTED LIGHTING	

No.	DATE	BY	DESCRIPTION
2	11/19/2021	LC	FEIS SUBMISSION
1	04/02/2021	LC	ISSUE TO TOWN

REVISIONS

ALTERATION OR ADDITION TO THIS DOCUMENT EXCEPT BY A LICENSED PROFESSIONAL ENGINEER IS A VIOLATION OF SECTION 7209, SUB-DIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.

SEAL & SIGNATURE:

NOT VALID UNTIL SEALED

JACLYN PERANTEAU, P.E.
NEW YORK STATE PROFESSIONAL ENGINEER #083937

DATE:	03/23/2021
SCALE:	1" = 120'
PROJECT No.:	19026
DRAWING BY:	LC
CHECKED BY:	YT
APPROVED BY:	JP

KEY CIVIL ENGINEERING
664 BLUE POINT ROAD, UNIT B
HOLTSVILLE, NEW YORK 11742
(631) 961-0506
www.KeyCivilEngineering.com

PROJECT NAME:

HK VENTURES, LLC INDUSTRIAL PARK

4285 MIDDLE COUNTRY ROAD
CALVERTON, NY 11933
TOWN OF RIVERHEAD, COUNTY OF SUFFOLK
DIST.: 600, SECT.: 116, BLOCK: 1, LOT: 2
ZONE: INDUSTRIAL C

DRAWING TITLE:

ALTERNATE 2
(MAXIMUM BUILD OUT PLAN)

DRAWING No.:

ALT - 2

PAGE No.:

1 OF 1

19026_2021.11.19_Alternate 2_Maximum Build Out Plan1.dwg

CALVERTON INDUSTRIAL PARK
4285 MIDDLE COUNTRY ROAD
CALVERTON, NEW YORK
TAX MAP ID: 0600-116.00-01.00-002.000

GROUNDWATER CHARACTERIZATION REPORT

PREPARED FOR:

HK Ventures LLC
147 Steamboat Road
Great Neck, NY 11024

PREPARED BY:

P.W. Grosser Consulting, Inc.
630 Johnson Avenue, Suite 7
Bohemia, New York 11716
Phone: 631-589-6353
Fax: 631-589-8705

Thomas Melia, PG, Senior Project Manager thomasm@pwgrosser.com
Michael Pecoraro, Senior Hydrogeologist mpecoraro@pwgrosser.com

PWGC Project Number: HKV2101

NOVEMBER 2021

GROUNDWATER CHARACTERIZATION REPORT
4285 MIDDLE COUNTRY RD, CALVERTON, NY

TABLE OF CONTENTS **PAGE**

1.0 INTRODUCTION 1
2.0 BACKGROUND 2
2.1 Site Description and Features 2
2.2 Physical Setting 2
2.3 Site History and Land Use 2
2.4 Adjacent Property Land Uses 2
2.5 Summary of Previous Assessments 2
2.5.1 Phase I Environmental Site Assessment Report (December 2019) 2
3.0 GROUNDWATER SAMPLING 4
3.1 Groundwater Sampling Procedures 4
3.1.1 Sample Protocol 4
3.1.2 Sample Analysis 4
4.0 GROUNDWATER SAMPLING RESULTS 6
5.0 CONCLUSIONS 7
5.1 Conclusions 7
5.2 Recommendations 8
6.0 REFERENCES 9
7.0 LIMITATIONS 10

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

FIGURES

FIGURE 1	Site Location Map
FIGURE 2	Site Plan
FIGURE 3	Groundwater Sample Locations

TABLES

TABLE 1	Groundwater Analytical Results – VOCs
TABLE 2	Groundwater Analytical Results – SVOCs
TABLE 3	Groundwater Analytical Results – Metals
TABLE 4	Groundwater Analytical Results – Pesticides, Herbicides, & PCBs
TABLE 5	Groundwater Analytical Results – PFAS & 1,4-Dioxane

APPENDICES

APPENDIX A	Groundwater Sampling Logs
APPENDIX B	Laboratory Analytical Report

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

ACRONYM	DEFINITION
ASP	Analytical Services Protocol
ASTM	American Society for Testing and Materials
AWQS	Ambient Water Quality Standards
CFR	Code of Federal Regulations
DER	Department of Environmental Remediation
ELAP	Environmental Laboratory Approval Program
EM	Electromagnetic
ESA	Environmental Site Assessment
GQS	Groundwater Quality Standard
GV	Guidance Value
NYCRR	New York Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PFAS	Per- and polyfluoroalkyl substances
PCB	Polychlorinated Biphenyl
PID	Photo-ionization Detector
PWGC	P.W. Grosser Consulting, Inc.
QA/QC	Quality Assurance / Quality Control
REC	Recognized Environmental Condition
SCO	Soil Cleanup Objective
SVOC	Semi-volatile Organic Compound
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

1.0 INTRODUCTION

HK Ventures LLC (Client) retained P.W. Grosser Consulting, Inc. (PWGC) to prepare a Groundwater Sampling Report for the property located at 4285 Middle Country Road, Calverton, New York. The purpose of the groundwater sampling was to evaluate groundwater quality with a focus on the western property boundary shared with Sky Materials. Work was conducted in accordance with Item 10 in the Town of Riverhead Resolution 2021-091 and in substantial conformance with the New York State Department of Environmental Conservation's (NYSDEC's) Division of Environmental Remediation's (DER's) Technical Guidance for Site Investigation and Remediation, May 2010 (DER-10).

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

2.0 BACKGROUND

2.1 Site Description and Features

The subject property consists of one parcel located at 4285 Middle Country Road in the hamlet of Calverton, Town of Riverhead, Suffolk County, New York. The property is identified in the Suffolk County Tax Map as 0600-116.00-01.00-002.000. A Site Location Map is included as **Figure 1** and a Site Plan is included as **Figure 2.**

2.2 Physical Setting

The Site measures approximately 30.25 acres and is vacant with wooded areas along the northeast and southwest property boundaries. Currently, the property is primarily composed of a naturally vegetated undeveloped land. The property slopes gradually from north to south. Regional groundwater flow beneath the subject property is in a generally northeast direction as obtained from groundwater contour maps developed by the United States Geologic Survey for Long Island in 2016.

2.3 Site History and Land Use

The Site has been historically used for agricultural purposes from before 1938 to approximately 1986. The Site is currently vacant and unimproved.

2.4 Adjacent Property Land Uses

The Site is bounded by Middle Country Road and vacant land to the north, portions of the former Grumman property (EPCAL) to the south and west, a sod farm to the east, and commercial properties to the west. Commercial properties to the west include a Tractor Supply Co. retail store, and Sky Materials which is a New York State Department of Environmental Conservation (NYSDEC) Part 360 permitted solid waste management facility.

2.5 Summary of Previous Assessments

2.5.1 Phase I Environmental Site Assessment Report (December 2019)

A Phase I ESA was prepared for the subject property in December of 2019 by H2M. The Phase I ESA identified the following REC associated with subject property.

- Based on a review of historical aerial photographs, the subject property was historically utilized for agricultural purposes from before 1938 to approximately 1986. Chemicals such as herbicides and pesticides are commonly used during farming operations to control pests and maintain plant growth.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

Residual contamination may be present in site surface soils. Due to the potential presence of herbicides and pesticides in the onsite soil, this is considered to be a REC.

Based on review of the Phase I ESA and a visual inspection of the Site and surrounding area, PWGC identified the following additional potential environmental concerns:

- Current and historical usage of properties in the surrounding area for agricultural purposes. As with the usage of the subject property, this usage is likely associated with the application of pesticides and herbicides. Such compounds may have migrated to the subject property from adjacent properties via surficial storm runoff or wind deposition.
- The adjacent property to the west (Sky Materials) is an active NYSDEC permitted solid waste management facility. Based on a visual inspection of this property from public rights of way, it appears the facility engages in processing construction and demolition (C&D) debris and vegetative waste (mulching). Based on review of historical aerial photographs, there is no evidence of piles of soil or debris, or other evidence of improper dumping associated with the Sky Materials site on the subject property. There is evidence of a possible access road/trail that appears to be associated with the Sky Materials site that encroached onto the southwestern corner of the subject property from approximately 2006 to 2010 (the trail currently appears to be overgrown with vegetation). However, based on the documented history of poor housekeeping, violations, and non-compliance with permit conditions, it is possible that soils, C&D debris and/or other materials from Sky Materials may potentially have been improperly dumped along the common boundary with the subject property.
- The former Calverton Naval Weapons Industrial Reserve Plant (NWIRP) is located to the south and west of the subject property. This site is currently known as Enterprise Park at Calverton (EPCAL). This site is listed as a NYSDEC Class 2 Hazardous Waste site where volatile organic compound (VOC) and per- and polyfluoroalkyl substance (PFAS) impact to groundwater has been documented.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

3.0 GROUNDWATER SAMPLING

To evaluate potential impacts related to the current and historical usage of the adjacent property to the west that has been used as a sand mine and is currently a registered C&D processing facility, PWGC performed groundwater sampling focused on the western property boundary shared with Sky Materials.

3.1 Groundwater Sampling Procedures

Associated Environmental Services, Inc. (Associated) of Hauppauge, New York provided environmental drilling services during the sampling. On October 12, 2021, Associated mobilized to the site with a Geoprobe® 7822DT direct-push drill rig to install three (3) temporary groundwater sampling points to evaluate groundwater quality at the western property boundary. At each temporary groundwater sampling location, a four-foot screen point sampler was driven to the desired depth (three feet below the water table) to allow the sampler screen to intersect the water table. Groundwater was encountered between 45 and 51 feet below the ground surface (bgs). Following sample collection, temporary sampling points were removed and backfilled.

Groundwater sample locations are identified as GW001, GW002 and GW003, and are illustrated in **Figure 3**.

3.1.1 Sample Protocol

Samples were collected using a Waterra hydrolift pump fitted with dedicated high-density polyethylene (HDPE) tubing in accordance with United States Environmental Protection Agency (USEPA) Low Stress (Low Flow) Purging and Sampling Procedure for The Collection of Groundwater Samples from Monitoring Wells (September 2017). A Horiba U-22 multi-parameter water quality meter outfitted with a flow through cell was utilized to monitor field parameters (turbidity, pH, temperature, oxidation-reduction potential, dissolved oxygen, and conductivity) at three-minute intervals. Upon stabilization of field parameters (three consecutive readings within allowable tolerances) groundwater samples were collected. Well Sampling Logs are included as **Appendix A**.

3.1.2 Sample Analysis

Groundwater samples submitted for laboratory analysis were placed on ice in a cooler and shipped under proper chain-of-custody procedures to Alpha Analytical Laboratories (Alpha), a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory. Samples were analyzed for:

- Volatile organic compounds (VOCs) by USEPA Method 8260.
- Semi-volatile organic compounds (SVOCs) by USEPA Method 8270.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

- Target Analyte List (TAL) Metals by USEPA Methods 6010/7471 (total & dissolved).
- Poly-chlorinated biphenyls (PCBs) by USEPA Method 8082
- Herbicides by USEPA Method 8151
- Pesticides by USEPA Method 8081
- Per- and polyfluoroalkyl substances (PFAS) by USEPA Method 537 Modified
- 1,4-Dioxane by USEPA Method 8270-SIM

One field blank sample was collected and analyzed for PFAS by USEPA Method 537 Modified as a quality assurance/quality control measure. Laboratory analytical data are summarized in **Tables 1** through **5**; laboratory reports are included as **Appendix B**.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

4.0 GROUNDWATER SAMPLING RESULTS

Groundwater analytical results are compared to the Class GA Ambient Water Quality Standards (AWQS) specified in Technical and Operational Guidance Series (TOGS) 1.1.1, Ambient Water Quality Standards and Guidance Values on Groundwater Effluent Limitations, June 1998. PFAS results are compared to the guidance values specified in Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs (January 2021). 1,4-Dioxane results are compared to the New York State maximum contaminant level (MCL) for drinking water.

VOCs were not detected at concentrations above their respective AWQS in each of the three (3) groundwater samples.

SVOCs were detected at concentrations exceeding their respective AWQS in each of the three (3) groundwater samples. It should be noted that the concentrations detected were extremely low and flagged with "J" qualifiers from the laboratory indicating that the values are estimated.

Metals including chromium, iron, manganese, sodium, and thallium were detected at concentrations exceeding AWQS in each groundwater sample collected at the site. However, metals exceeding AWQS in filtered (dissolved) samples were limited to manganese and sodium in GW001 and manganese, sodium, and thallium in GW002.

Pesticides, herbicides, and PCBs were not detected at concentrations exceeding their respective AWQS in groundwater samples collected from the site with the exception of dieldrin in GW001. It should be noted that the dieldrin concentration detected was extremely low and flagged with a "J" qualifier from the laboratory indicating that the value was estimated.

PFAS compounds PFOA and PFOS were detected at concentrations exceeding their respective NYSDEC guidance values in GW001 and GW002.

1,4-Dioxane was not detected at concentrations exceeding its MCL of 1 ppb in the three (3) groundwater samples.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

5.0 CONCLUSIONS

PWGC has performed a groundwater investigation in accordance with Item 10 in the Town of Riverhead Resolution 2021-091 to characterize groundwater and evaluate potential impacts related to the current and historical usage of the adjacent property to the west that has been used as a sand mine and is currently a registered C&D processing facility (Sky Materials). The investigation consisted of:

- Evaluation of groundwater quality.

5.1 Conclusions

Based on the results of the groundwater sampling, PWGC offers the following conclusions:

- To evaluate groundwater quality, three (3) temporary groundwater sample points installed along the western property boundary of the site adjacent to Sky Materials.
  - VOCs, herbicides, PCBs, and 1,4-dioxane were not detected at concentrations above applicable standards or guidance values.
  - Several SVOCs were detected at concentrations exceeding their respective AWQS in each of the three groundwater samples. It should be noted that the AWQS for these compounds are extremely low, and the concentrations detected are flagged with "J" qualifiers from the laboratory indicating that the concentrations should be considered estimated.
  - Several dissolved metals, including manganese and sodium, were detected at concentrations exceeding their respective AWQS in two groundwater samples (GW001 and GW002). Elevated concentrations of these compounds are typical of Long Island groundwater and are likely related to the composition of the aquifer rather than a source of impact.
  - One pesticide (dieldrin) was detected in one groundwater sample (GW001) at a concentration exceeding its AWQS. It should be noted that the AWQS for this compound is extremely low, and the concentration detected is flagged with a "J" qualifier from the laboratory indicating that the concentration should be considered estimated.
  - PFAS compounds PFOA and PFOS were detected at concentrations exceeding their respective guidance values in two groundwater samples (GW001 and GW002).
  - Based on the regional groundwater flow direction and the proximity of the samples to the upgradient property boundary, it appears that detected groundwater impact is related to an offsite, upgradient source such as Sky Materials, EPCAL and/or other upgradient sources not previously identified.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

5.2 Recommendations

Based on the conclusions detailed above, PWGC offers the following recommendations for the subject property:

- As impact detected in groundwater appears to be related to an offsite source or sources, and there are currently no plans to install supply wells at the subject property (i.e., the proposed development will be connected to the Riverhead Water District) it does not appear that groundwater remediation is necessary at the subject property.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

6.0 REFERENCES

6 NYCRR Part 375 Environmental Remediation Programs Subparts 375-1 to 375-4 & 375-6.

6NYCRR Part 703.5 GA Groundwater Quality Standards (GQS) and Guidance Values (GV) 6/1998

DER-10 / Technical Guidance for Site Investigation and Remediation.

NYSDEC Sampling, Analysis, and Assessment of PFAS Groundwater Screening Levels, January 2021.

New York State Maximum Contaminant Levels (MCL) for Drinking Water

H2M – 4285 Middle Country Road, Calverton, NY – Phase I ESA Report, December 2019

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

7.0 LIMITATIONS

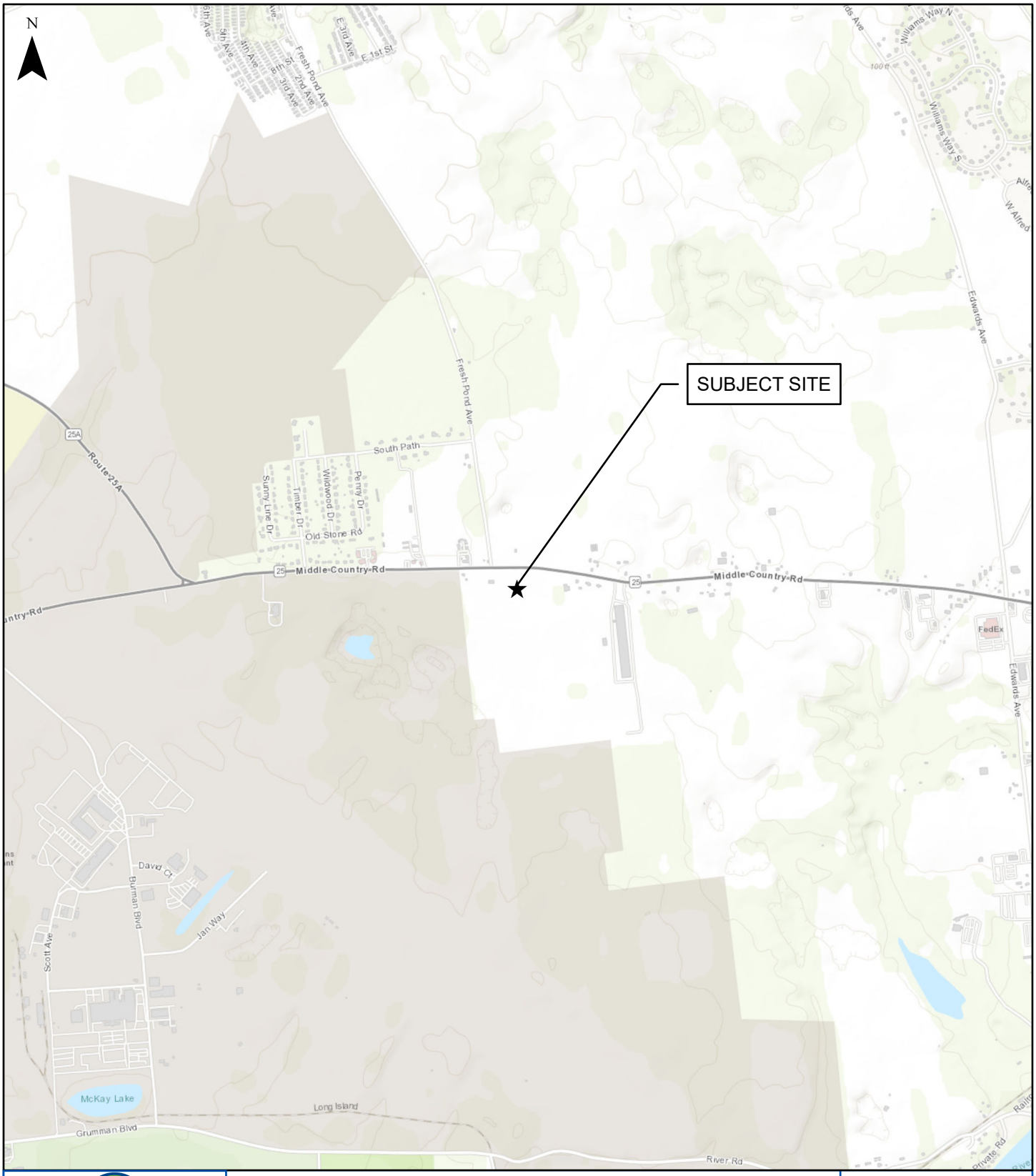
The conclusions presented in this report are professional opinions based on the data described in this report. These opinions have been arrived at in accordance with currently accepted engineering and hydrogeologic standards and practices applicable to this location, and are subject to the following inherent limitations:

1. The data presented in this report are from visual inspections and examination of records prepared by others. The passage of time, manifestation of latent conditions, or occurrence of future events may require further exploration of the site, analysis of data, and re-evaluation of the findings, observations, and conclusions presented in this report.
2. The data reported and the findings, observations, and conclusions expressed are limited by the scope of work. The scope of work was defined by the request of the client.
3. No warranty or guarantee, whether expressed or implied, is made with respect to the data reported, findings, observations, or conclusions. These are based solely upon site conditions in existence at the time of the investigation, and other information obtained and reviewed by PWGC.
4. The conclusions presented in this report are professional opinions based on data described in this report. They are intended only for the purpose, site location, and project indicated. This report is not a definitive study of contamination at the site and should not be interpreted as such.
5. This report is based, in part, on information supplied to PWGC by third-party sources. While efforts have been made to substantiate this third-party information, PWGC cannot attest to the completeness or accuracy of information provided by others.

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353 PWGROSSER.COM 630 JOHNSON AVENUE, STE 7 BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

FIGURES

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353
PWGROSSER.COM
630 JOHNSON AVENUE, STE 7
BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON



SITE LOCATION

4285 Middle Country Road
Calverton, NY

0 ¼ ½ ¾ 1 Miles

PWGC
CLIENT DRIVEN SOLUTIONS
P.W. Grosser Consulting, Inc.
630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

Project:	HKV2101
Date:	11/24/2021
Designed by:	MP
Drawn by:	OA
Approved by:	MP
Figure No:	1

Document Path: W:\Projects\E-L\HKV\2101\Map Files\Map Files.aprx

Document Path: W:\Projects\E-L\HKV\2101\Map Files\Map Files.aprx

PWGC
CLIENT DRIVEN SOLUTIONS
P.W. Grosser Consulting, Inc.
630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING AND RELATED DOCUMENTS IS A VIOLATION OF SEC. 7209 OF THE N.Y.S. EDUCATION LAW

DRAWING PREPARED FOR:

REVISION	DATE	INITIAL	COMMENTS

DRAWING INFORMATION:

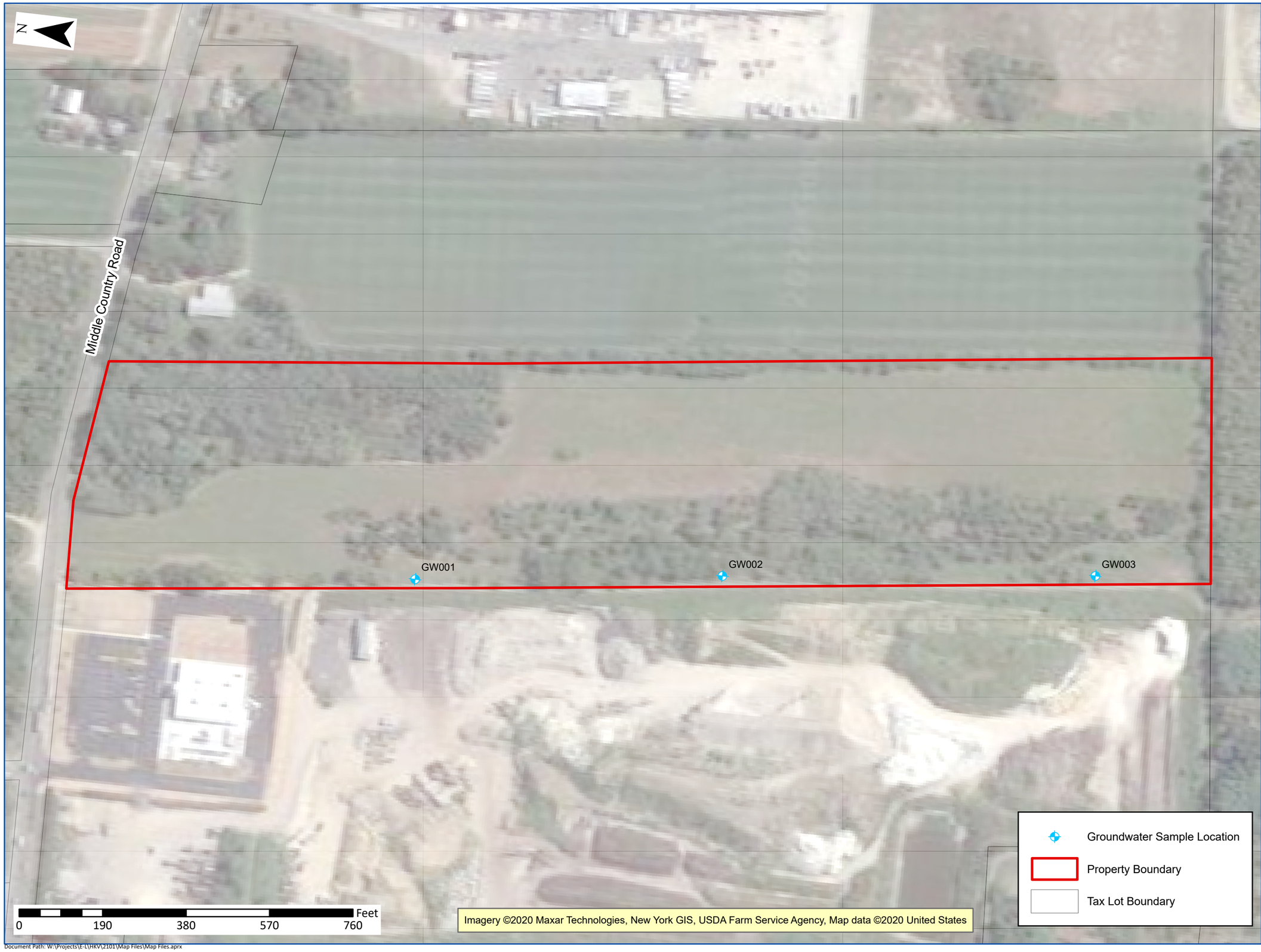
Project:	HKV2101	Designed by:	MP
Date:	11/24/2021	Drawn by:	OA
Scale:	AS SHOWN	Approved by:	MP

Site Plan

4285 Middle Country Road
Calverton, NY

FIGURE NO:

2



PWGC
CLIENT DRIVEN SOLUTIONS
P.W. Grosser Consulting, Inc.
630 Johnson Ave., Suite 7
Bohemia, NY 11716
Ph: 631-589-6353 • Fax: 631-589-8705
pwgc.info@pwgrosser.com

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING AND RELATED DOCUMENTS IS A VIOLATION OF SEC. 7209 OF THE N.Y.S. EDUCATION LAW

DRAWING PREPARED FOR:

REVISION	DATE	INITIAL	COMMENTS

DRAWING INFORMATION:

Project:	HKV2101	Designed by:	MP
Date:	11/29/2021	Drawn by:	OA
Scale:	AS SHOWN	Approved by:	MP

Groundwater Sample Locations

4285 Middle Country Road
Calverton, NY

FIGURE NO:

3

Document Path: W:\Projects\E-L\HKV\2101\Map Files\Map Files.aprx

TABLES

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353
PWGROSSER.COM
630 JOHNSON AVENUE, STE 7
BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

Table 1

Groundwater Analytical for VOCs

4285 Middle Country Rd,

Calverton, NY

Client Sample ID:	NYSDEC Groundwater Quality Standards (1)	GW001		GW002		GW003	
Laboratory ID:		L2155680-01		L2155680-02		L2155680-03	
Sampling Date:		10/12/2021		10/12/2021		10/12/2021	
Volatile Organic Compounds by USEPA Method 8260 in µg/L							
1,1,1,2-Tetrachloroethane	5	2.5	U	2.5	U	2.5	U
1,1,1-Trichloroethane	5	2.5	U	2.5	U	2.5	U
1,1,2,2-Tetrachloroethane	5	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	1	1.5	U	1.5	U	1.5	U
1,1-Dichloroethane	5	2.5	U	2.5	U	2.5	U
1,1-Dichloroethene	5	0.5	U	0.5	U	0.5	U
1,1-Dichloropropene	5	2.5	U	2.5	U	2.5	U
1,2,3-Trichlorobenzene	5	2.5	U	2.5	U	2.5	U
1,2,3-Trichloropropane	0.04	2.5	U	2.5	U	2.5	U
1,2,4,5-Tetramethylbenzene	NS	2	U	2	U	2	U
1,2,4-Trichlorobenzene	5	2.5	U	2.5	U	2.5	U
1,2,4-Trimethylbenzene	5	2.5	U	2.5	U	2.5	U
1,2-Dibromo-3-chloropropane	0.04	2.5	U	2.5	U	2.5	U
1,2-Dibromoethane	0.0006	2	U	2	U	2	U
1,2-Dichlorobenzene	3	2.5	U	2.5	U	2.5	U
1,2-Dichloroethane	0.6	0.5	U	0.5	U	0.5	U
1,2-Dichloroethene, Total	5	2.5	U	2.5	U	2.5	U
1,2-Dichloropropane	1	1	U	1	U	1	U
1,3,5-Trimethylbenzene	5	2.5	U	2.5	U	2.5	U
1,3-Dichlorobenzene	3	2.5	U	2.5	U	2.5	U
1,3-Dichloropropane	5	2.5	U	2.5	U	2.5	U
1,3-Dichloropropene, Total	0.4	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	3	2.5	U	2.5	U	2.5	U
1,4-Dioxane	NS	250	U	250	U	250	U
2,2-Dichloropropane	5	2.5	U	2.5	U	2.5	U
2-Butanone	50	5	U	5	U	5	U
2-Hexanone	50	5	U	5	U	5	U
4-Methyl-2-pentanone	NS	5	U	5	U	5	U
Acetone	50	1.8	J	5.8		1.5	J
Acrylonitrile	5	5	U	5	U	5	U
Benzene	1	0.5	U	0.5	U	0.5	U
Bromobenzene	5	2.5	U	2.5	U	2.5	U
Bromochloromethane	5	2.5	U	2.5	U	2.5	U
Bromodichloromethane	50	0.5	U	0.5	U	0.5	U
Bromoform	50	2	U	2	U	2	U
Bromomethane	5	2.5	U	2.5	U	2.5	U
Carbon disulfide	60	5	U	5	U	5	U
Carbon tetrachloride	5	0.5	U	0.5	U	0.5	U
Chlorobenzene	5	2.5	U	2.5	U	2.5	U
Chloroethane	5	2.5	U	2.5	U	2.5	U
Chloroform	7	2.5	U	2.5	U	2.5	U
Chloromethane	NS	2.5	U	2.5	U	2.5	U
cis-1,2-Dichloroethene	5	2.5	U	2.5	U	2.5	U
cis-1,3-Dichloropropene	0.4	0.5	U	0.5	U	0.5	U
Dibromochloromethane	50	0.5	U	0.5	U	0.5	U
Dibromomethane	5	5	U	5	U	5	U
Dichlorodifluoromethane	5	5	U	5	U	5	U
Ethyl ether	NS	2.5	U	2.5	U	2.5	U
Ethylbenzene	5	2.5	U	2.5	U	2.5	U
Hexachlorobutadiene	0.5	2.5	U	2.5	U	2.5	U
Isopropylbenzene	5	2.5	U	2.5	U	2.5	U
Methyl tert butyl ether	10	2.5	U	2.5	U	2.5	U
Methylene chloride	5	2.5	U	2.5	U	2.5	U
n-Butylbenzene	5	2.5	U	2.5	U	2.5	U
n-Propylbenzene	5	2.5	U	2.5	U	2.5	U
Naphthalene	10	2.5	U	2.5	U	2.5	U
o-Chlorotoluene	5	2.5	U	2.5	U	2.5	U
o-Xylene	5	2.5	U	2.5	U	2.5	U
p-Chlorotoluene	5	2.5	U	2.5	U	2.5	U
p-Diethylbenzene	NS	2	U	2	U	2	U
p-Ethyltoluene	NS	2	U	2	U	2	U
p-Isopropyltoluene	5	2.5	U	2.5	U	2.5	U
p/m-Xylene	5	2.5	U	2.5	U	2.5	U
sec-Butylbenzene	5	2.5	U	2.5	U	2.5	U
Styrene	5	2.5	U	2.5	U	2.5	U
tert-Butylbenzene	5	2.5	U	2.5	U	2.5	U
Tetrachloroethene	5	0.5	U	0.5	U	0.5	U
Toluene	5	2.5	U	2.5	U	2.5	U
trans-1,2-Dichloroethene	5	2.5	U	2.5	U	2.5	U
trans-1,3-Dichloropropene	0.4	0.5	U	0.5	U	0.5	U
trans-1,4-Dichloro-2-butene	5	2.5	U	2.5	U	2.5	U
Trichloroethene	5	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	5	2.5	U	2.5	U	2.5	U
Vinyl acetate	NS	5	U	5	U	5	U
Vinyl chloride	2	1	U	1	U	1	U
Xylenes, Total	NS	2.5	U	2.5	U	2.5	U
Total VOCs:		1.8		5.8		1.5	

Notes:

(1) NYSDEC Ambient Water Quality Standards and Guidance Values 6/1998

NS - No Standard

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than MDL.

U - The analyte was analyzed for, but was not detected above the reported sample quantification limit. The assocaited numerical value is the sample quantitation limit.

Highlighted values indicate exceedance of the NYSDEC AWQS

Table 2

Groundwater Analytical for SVOCs

4285 Middle Country Rd,

Calverton, NY

Client Sample ID:	NYSDEC Groundwater Quality Standards [1]	GW001		GW002		GW003	
Laboratory ID:		L2155680-01		L2155680-02		L2155680-03	
Sampling Date:		10/12/2021		10/12/2021		10/12/2021	
Semi-Volatile Organic Compounds by USEPA Method 8270 in µg/L							
1,2,4,5-Tetrachlorobenzene	5	10	U	10	U	10	U
1,2,4-Trichlorobenzene	5	5	U	5	U	5	U
1,2-Dichlorobenzene	3	2	U	2	U	2	U
1,3-Dichlorobenzene	3	2	U	2	U	2	U
1,4-Dichlorobenzene	3	2	U	2	U	2	U
2,4,5-Trichlorophenol	NS	5	U	5	U	5	U
2,4,6-Trichlorophenol	NS	5	U	5	U	5	U
2,4-Dichlorophenol	1	5	U	5	U	5	U
2,4-Dimethylphenol	50	5	U	5	U	5	U
2,4-Dinitrophenol	10	20	U	20	U	20	U
2,4-Dinitrotoluene	5	5	U	5	U	5	U
2,6-Dinitrotoluene	5	5	U	5	U	5	U
2-Chloronaphthalene	10	0.2	U	0.2	U	0.2	U
2-Chlorophenol	NS	2	U	2	U	2	U
2-Methylnaphthalene	NS	0.09	J	0.1	U	0.03	J
2-Methylphenol	NS	5	U	5	U	5	U
2-Nitroaniline	5	5	U	5	U	5	U
2-Nitrophenol	NS	10	U	10	U	10	U
3,3'-Dichlorobenzidine	5	5	U	5	U	5	U
3-Methylphenol/4-Methylphenol	NS	5	U	5	U	5	U
3-Nitroaniline	5	5	U	5	U	5	U
4,6-Dinitro-o-cresol	NS	10	U	10	U	10	U
4-Bromophenyl phenyl ether	NS	2	U	2	U	2	U
4-Chloroaniline	5	5	U	5	U	5	U
4-Chlorophenyl phenyl ether	NS	2	U	2	U	2	U
4-Nitroaniline	5	5	U	5	U	5	U
4-Nitrophenol	NS	10	U	10	U	10	U
Acenaphthene	20	0.1	U	0.1	U	0.1	U
Acenaphthylene	NS	0.1	U	0.1	U	0.1	U
Acetophenone	NS	5	U	5	U	5	U
Anthracene	50	0.02	J	0.04	J	0.1	U
Benzo(a)anthracene	0.002	0.03	J	0.03	J	0.1	U
Benzo(a)pyrene	0	0.02	J	0.1	U	0.1	U
Benzo(b)fluoranthene	0.002	0.04	J	0.03	J	0.02	J
Benzo(ghi)perylene	NS	0.02	J	0.1	U	0.1	U
Benzo(k)fluoranthene	0.002	0.01	J	0.1	U	0.1	U
Benzoic Acid	NS	50	U	50	U	50	U
Benzyl Alcohol	NS	2	U	2	U	2	U
Biphenyl	NS	2	U	2	U	2	U
Bis(2-chloroethoxy)methane	5	5	U	5	U	5	U
Bis(2-chloroethyl)ether	1	2	U	2	U	2	U
Bis(2-chloroisopropyl)ether	5	2	U	2	U	2	U
Bis(2-ethylhexyl)phthalate	5	3	U	3	U	3	U
Butyl benzyl phthalate	50	5	U	5	U	5	U
Carbazole	NS	2	U	2	U	2	U
Chrysene	0.002	0.02	J	0.02	J	0.1	U
Di-n-butylphthalate	50	0.1	U	0.1	U	0.1	U
Di-n-octylphthalate	50	2	U	2	U	2	U
Dibenzo(a,h)anthracene	NS	5	U	5	U	5	U
Dibenzofuran	NS	5	U	5	U	5	U
Diethyl phthalate	50	5	U	5	U	5	U
Dimethyl phthalate	50	5	U	5	U	5	U
Fluoranthene	50	0.05	J	0.04	J	0.03	J
Fluorene	50	0.1	U	0.1	U	0.1	U
Hexachlorobenzene	0.04	0.8	U	0.8	U	0.8	U
Hexachlorobutadiene	0.5	0.5	U	0.5	U	0.5	U
Hexachlorocyclopentadiene	5	20	U	20	U	20	U
Hexachloroethane	5	0.8	U	0.8	U	0.8	U
Indeno(1,2,3-cd)pyrene	0.002	0.02	J	0.02	J	0.01	J
Isophorone	50	5	U	5	U	5	U
n-Nitrosodi-n-propylamine	NS	0.32		0.1	U	0.07	J
Naphthalene	10	2	U	2	U	2	U
NDPA/DPA	50	2	U	2	U	2	U
Nitrobenzene	0.4	5	U	5	U	5	U
p-Chloro-m-cresol	NS	2	U	2	U	2	U
Pentachlorophenol	1	0.8	U	0.11	J	0.8	U
Phenanthrene	50	0.06	J	0.03	J	0.05	J
Phenol	1	5	U	5	U	5	U
Pyrene	50	0.05	J	0.04	J	0.02	J
Total SVOCs:		0.75		0.36		0.23	

Notes:

(1) NYSDEC Ambient Water Quality Standards and Guidance Values 6/1998 - Standard

NS - No Standard

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than MDL.

U - The analyte was analyzed for, but was not detected above the reported sample quantification limit. The assocaited numerical value is the sample quantitation limit.

Highlighted values indicate exceedance of the NYSDEC AWQS or GV

Table 3
Groundwater Analytical for Metals
4285 Middle Country Rd,
Calverton, NY

Client Sample ID:	NYSDEC Groundwater Quality Standards [1]	GW001		GW002		GW003	
Laboratory ID:		L2155680-01		L2155680-02		L2155680-03	
Sampling Date:		3/27/2019		3/27/2019		3/27/2019	
Sample Type:		Total	Dissolved	Total	Dissolved	Total	Dissolved
Total Metals by USEPA Method 6010 in µg/L							
Aluminum	NS	2,530	4.3 J	3,630	6.07 J	3,300	10 U
Antimony	3	0.54 J	4 U	0.57 J	0.51 J	4 U	4 U
Arsenic	25	1.88	0.2 J	2.99	0.76	1.79	0.5 U
Barium	1,000	114.3	83.38	127.2	92.89	57.96	15.71
Beryllium	3	0.23 J	0.5 U	0.27 J	0.5 U	0.26 J	0.5 U
Cadmium	5	0.1 J	0.2 U	0.15 J	0.09 J	0.07 J	0.2 U
Calcium	NS	83,600	89,000	102,000	109,000	6,540	6,190
Chromium	50	94.54	0.24 J	98.91	1 U	127.2	0.35 J
Cobalt	NS	5.75	2.22	7.61	3.71	4.65	1.97
Copper	200	24.74	3.45	47.1	19.38	33.25	0.79 J
Iron	300	14,300	27 J	19,200	50 U	17,800	25 J
Lead	25	7.62	1 U	7.4	1 U	7.05	1 U
Magnesium	35,000	10,400	10,300	13,900	14,000	1,890	1,100
Manganese	300	1,303	1,030	12,520	8,154	377.5	232
Mercury	0.7	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	100	30.99	8.29	34.54	14.19	29.39	9.48
Potassium	NS	10,400	10,700	109,000	117,000	1,850	1,380
Selenium	10	5 U	5 U	5 U	5 U	5 U	5 U
Silver	50	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U
Sodium	20,000	52,600	54,800	95,500	101,000	5,690	5,720
Thallium	0.5	0.41 J	0.42 J	0.62 J	0.65 J	0.16 J	0.15 J
Vanadium	NS	8.7	5 U	10.84	5 U	8.47	5 U
Zinc	2,000	31.97	10 U	142.7	16.99	73.99	11.85

Notes:
(1) 6NYCRR Part 703.5 GA Groundwater Quality Standards (GQS) and Guidance Values (GV) 6/1998
NS - No Standard
U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.
J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
Highlighted values indicate exceedance of the NYSDEC GQS or GV.

Table 4

Groundwater Analytical for Pesticides, Herbicides and PCBs

4285 Middle Country Rd,

Calverton, NY

Client Sample ID:	NYSDEC Groundwater Quality Standards [1]	GW001		GW002		GW003	
Laboratory ID:		L2155680-01		L2155680-02		L2155680-03	
Sampling Date:		10/12/2021		10/12/2021		10/12/2021	
Organochlorine Pesticides by USEPA Method 8081 in µg/L							
4,4'-DDD	0.3	0.029	U	0.029	U	0.029	U
4,4'-DDE	0.2	0.005	JIP	0.029	U	0.029	U
4,4'-DDT	0.2	0.029	U	0.029	U	0.029	U
Aldrin	0	0.014	U	0.014	U	0.014	U
Alpha-BHC	0.01	0.014	U	0.014	U	0.014	U
Beta-BHC	0.04	0.014	U	0.014	U	0.014	U
Chlordane	0.05	0.143	U	0.143	U	0.143	U
cis-Chlordane	NS	0.014	U	0.014	U	0.014	U
Delta-BHC	0.04	0.014	U	0.014	U	0.014	U
Dieldrin	0.004	0.006	J	0.029	U	0.029	U
Endosulfan I	NS	0.014	U	0.014	U	0.014	U
Endosulfan II	NS	0.029	U	0.029	U	0.029	U
Endosulfan sulfate	NS	0.029	U	0.029	U	0.029	U
Endrin	0	0.029	U	0.029	U	0.029	U
Endrin aldehyde	5	0.029	U	0.029	U	0.029	U
Endrin ketone	5	0.029	U	0.029	U	0.029	U
Heptachlor	0.04	0.014	U	0.014	U	0.014	U
Heptachlor epoxide	0.03	0.014	U	0.014	U	0.014	U
Lindane	0.05	0.014	U	0.014	U	0.014	U
Methoxychlor	35	0.143	U	0.143	U	0.143	U
Toxaphene	0.06	0.143	U	0.143	U	0.143	U
trans-Chlordane	NS	0.014	U	0.014	U	0.014	U
Chlorinated Herbicides by GC in µg/L							
2,4,5-T	0.09	8	U	7.14	U	2	U
2,4,5-TP (Silvex)	0.09	8	U	7.14	U	2	U
2,4-D	0.09	40	U	35.7	U	10	U
Polychlorinated Biphenyls by USEPA Method 8082 in µg/L							
Aroclor 1016	0.09	0.071	U	0.071	U	0.071	U
Aroclor 1221	0.09	0.071	U	0.071	U	0.071	U
Aroclor 1232	0.09	0.071	U	0.071	U	0.071	U
Aroclor 1242	0.09	0.071	U	0.071	U	0.071	U
Aroclor 1248	0.09	0.071	U	0.071	U	0.071	U
Aroclor 1254	0.09	0.071	U	0.071	U	0.071	U
Aroclor 1260	0.09	0.071	U	0.071	U	0.071	U
Aroclor 1262	0.09	0.071	U	0.071	U	0.071	U
Aroclor 1268	0.09	0.071	U	0.071	U	0.071	U
PCBs, Total	0.09	0.071	U	0.071	U	0.071	U

Notes:

(1) 6NYCRR Part 703.5 GA Groundwater Quality Standards (GQS) and Guidance Values (GV) 6/1998

* DUP002 is a blind duplicate of MW005

NS - No Standard

U - The analyte was analyzed for, but was not detected above the reported sample quantification limit. numerical value is the approximate concentration of the

Highlighted values indicate exceedance of the NYSDEC GQS or GV.

Table 5

Groundwater Analytical for Perfluorinated Alkyl Acids and 1,4-Dioxane
4285 Middle Country Rd,
Calverton, NY

Client Sample ID:	NYSDEC Groundwater Quality Standards [1]	GW001		GW002		GW003		FIELD BLANK	
Laboratory ID:		L2155680-01		L2155680-02		L2155680-03		L2155680-04	
Sampling Date:		10/12/2021		10/12/2021		10/12/2021		10/12/2021	
Perfluorinated Alkyl Acids by Isotope Dilution in ng/L									
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	NS	1.92	U	1.84	U	1.88	U	1.79	U
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	NS	1.92	U	3.39		1.88	U	1.79	U
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	NS	1.92	U	1.84	U	1.88	U	1.79	U
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	NS	1.92	U	1.84	U	1.88	U	1.79	U
Perfluorobutanesulfonic Acid (PFBS)	NS	5.34		26.4		1.88	U	1.79	U
Perfluorobutanoic Acid (PFBA)	NS	17.5		58.4		1.88	U	1.79	U
Perfluorodecanesulfonic Acid (PFDS)	NS	1.92	U	1.84	U	1.88	U	1.79	U
Perfluorodecanoic Acid (PFDA)	NS	1.92	U	2.32		1.88	U	1.79	U
Perfluorododecanoic Acid (PFDoA)	NS	1.92	U	1.84	U	1.88	U	1.79	U
Perfluoroheptanesulfonic Acid (PFHpS)	NS	1.92	U	1.84	U	1.88	U	1.79	U
Perfluoroheptanoic Acid (PFHpA)	NS	26.2		35.8		1.88	U	1.79	U
Perfluorohexanesulfonic Acid (PFHxS)	NS	20.4		20.6	F	1.88	U	1.79	U
Perfluorohexanoic Acid (PFHxA)	NS	31.9		81.6		0.331	J	1.79	U
Perfluorononanoic Acid (PFNA)	NS	2.18		7.71		1.88	U	1.79	U
Perfluorooctanesulfonamide (FOSA)	NS	1.92	U	1.84	U	1.88	U	1.79	U
Perfluorooctanesulfonic Acid (PFOS)	10	14.3		34.7		1.88	U	1.79	U
Perfluorooctanoic Acid (PFOA)	10	88.3		90		0.376	J	1.79	U
Perfluoropentanoic Acid (PFPeA)	NS	31.6		88.6		0.771	J	0.364	J
Perfluorotetradecanoic Acid (PFTA)	NS	1.92	U	1.84	U	1.88	U	1.79	U
Perfluorotridecanoic Acid (PFTrDA)	NS	1.92	U	1.84	U	1.88	U	1.79	U
Perfluoroundecanoic Acid (PFUnA)	NS	1.92	U	0.627	J	1.88	U	1.79	U
PFOA/PFOS, Total	NS	103		125		0.376	J	1.79	U
1,4 Dioxane by 8270D-SIM in µg/L									
1,4-Dioxane	1 [2]	0.144	U	0.902		0.15	U	NA	

Notes:

(1) NYSDEC Sampling, Analysis, and Assessment of PFAS Groundwater Screening Levels, January 2021.

(2) 1,4-Dioxane results are compared to the NYS maximum contaminant level (MCL) for drinking water.

NS - No Standard

NA - Not Analyzed

U - The analyte was analyzed for, but was not detected above the reported sample quantification limit.
concentration of the analyte in the sample.

Highlighted values indicate exceedance of the NYSDEC GQS or GV.

APPENDIX A
GROUNDWATER SAMPLE LOGS

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353
PWGROSSER.COM
630 JOHNSON AVENUE, STE 7
BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

Appendix A
Well Sampling Logs

P.W. GROSSER CONSULTING

Well Sampling Log

Well Designation:	GW001	**Sampled By:**	MPP
Site Address:	4285 Middle Country Rd, Calverton, NY	**Project Manager:**	TM
Project Name:	HK Ventures - Calverton	**Project Number:**	HKV2101

Relative TOC Elevation (ft):	NM	**Well Use:**	GW Sample
Depth to Product (ft):	No Product	**Product Elevation (ft):**	NM
Depth to Water (ft):	51	**Groundwater Elevation (ft):**	NM
Depth to Bottom (ft):	55	**Bottom Elevation (ft):**	NM
Height of Water Column (ft):	4	**Well Diameter (in):**	1
Standing Water Volume (gal):	0.16	**Calculated Purge Volume (gal):**	1.19
Sample Date:	10/12/2021	**Begin Purge Time:**	10:21
Sample Time:	10:50	**Complete Purge Time:**	10:49
Purge Method:	Low-Flow	**Sample Method:**	Waterra
Purge Rate (mL/min):	250	**Purge Time (min):**	18
Sample Appearance:	Slightly Turbid	**Odors Observed:**	no odor
Analytical Laboratory:	Alpha	**Notes:**	Interface Probe unable to fit inside GW temp well, DTW and DTB estimated.
Date Shipped:	10/12/2021		
Analyses Requested:			
VOCs, SVOCs, PCBs, Herbicides, Pesticides, Metals (total & dissolved), Cyanide, PFAS, 1,4-Dioxane			

Field Indicator Parameters

Time	Temp. (°C)	pH	Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turb. (NTU)			
10:21	17.87	7.49	0.710	-127	1.27	885			
10:24	17.11	7.36	0.676	-78	1.98	561			
10:27	16.61	7.19	0.656	-32	3.41	245			
10:30	16.35	7.04	0.637	-2	4.36	221			
10:33	16.24	6.98	0.635	6	4.69	185			
10:36	16.25	6.92	0.633	14	4.75	168			
10:39	16.19	6.90	0.630	17	4.84	160			

Appendix A
Well Sampling Logs

P.W. GROSSER CONSULTING

Well Sampling Log

Well Designation:	GW002	**Sampled By:**	MPP
Site Address:	4285 Middle Country Rd, Calverton, NY	**Project Manager:**	TM
Project Name:	HK Ventures - Calverton	**Project Number:**	HKV2101

Relative TOC Elevation (ft):	NM	**Well Use:**	GW Sample
Depth to Product (ft):	No Product	**Product Elevation (ft):**	NM
Depth to Water (ft):	50	**Groundwater Elevation (ft):**	NM
Depth to Bottom (ft):	55	**Bottom Elevation (ft):**	NM
Height of Water Column (ft):	5	**Well Diameter (in):**	1
Standing Water Volume (gal):	0.20	**Calculated Purge Volume (gal):**	1.39
Sample Date:	10/12/2021	**Begin Purge Time:**	11:52
Sample Time:	12:25	**Complete Purge Time:**	12:13
Purge Method:	Low-Flow	**Sample Method:**	Waterra
Purge Rate (mL/min):	250	**Purge Time (min):**	21
Sample Appearance:	Turbid	**Odors Observed:**	no odor
Analytical Laboratory:	Alpha	**Notes:**	Interface Probe unable to fit inside GW temp well, DTW and DTB estimated.
Date Shipped:	10/12/2021		
Analyses Requested:			
VOCs, SVOCs, PCBs, Herbicides, Pesticides, Metals (total & dissolved), Cyanide, PFAS, 1,4-Dioxane			

Field Indicator Parameters

Time	Temp. (°C)	pH	Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turb. (NTU)			
11:52	20.57	7.51	1.22	-131	3.04	1000			
11:55	17.81	7.51	1.21	-91	6.59	1000			
11:58	17.03	7.41	1.19	-67	7.79	760			
12:01	16.92	7.38	1.19	-64	7.56	850			
12:04	17.02	7.35	1.17	-59	8.82	999			
12:07	17.03	7.32	1.17	-53	8.82	1000			
12:10	16.98	7.30	1.17	-51	8.81	1000			
12:13	16.91	7.28	1.16	-50	8.83	1000			

Appendix A
Well Sampling Logs

P.W. GROSSER CONSULTING

Well Sampling Log

Well Designation:	GW003	**Sampled By:**	MPP
Site Address:	4285 Middle Country Rd, Calverton, NY	**Project Manager:**	TM
Project Name:	HK Ventures - Calverton	**Project Number:**	HKV2101

Relative TOC Elevation (ft):	NM	**Well Use:**	GW Sample
Depth to Product (ft):	No Product	**Product Elevation (ft):**	NM
Depth to Water (ft):	45	**Groundwater Elevation (ft):**	NM
Depth to Bottom (ft):	50	**Bottom Elevation (ft):**	NM
Height of Water Column (ft):	5	**Well Diameter (in):**	1
Standing Water Volume (gal):	0.20	**Calculated Purge Volume (gal):**	1.39
Sample Date:	10/12/2021	**Begin Purge Time:**	13:27
Sample Time:	14:00	**Complete Purge Time:**	13:48
Purge Method:	Low-Flow	**Sample Method:**	Waterra
Purge Rate (mL/min):	250	**Purge Time (min):**	21
Sample Appearance:	Turbid	**Odors Observed:**	no odor
Analytical Laboratory:	Alpha	**Notes:**	Interface Probe unable to fit inside GW temp well, DTW and DTB estimated.
Date Shipped:	10/12/2021		

Analyses Requested:

VOCs, SVOCs, PCBs, Herbicides, Pesticides, Metals (total & dissolved), Cyanide, PFAS, 1,4-Dioxane

Field Indicator Parameters

Time	Temp. (°C)	pH	Cond. (mS/cm)	ORP (mV)	DO (mg/L)	Turb. (NTU)			
13:27	21.46	8.19	0.146	-135	1.12	1000			
13:30	19.52	7.64	0.094	-45	4.50	1000			
13:33	19.50	7.21	0.074	32	9.54	1000			
13:36	19.13	6.85	0.064	70	9.12	1000			
13:39	18.92	6.71	0.062	82	9.21	1000			
13:42	18.75	6.58	0.061	91	7.91	1000			
13:45	18.68	6.53	0.061	93	7.79	1000			
13:48	18.52	6.50	0.061	95	7.65	1000			

APPENDIX B
LABORATORY ANALYTICAL REPORTS

P.W. GROSSER CONSULTING, INC.
P.W. GROSSER CONSULTING ENGINEER & HYDROGEOLOGIST, P.C.
PHONE: 631.589.6353
PWGROSSER.COM
630 JOHNSON AVENUE, STE 7
BOHEMIA, NY 11716
LONG ISLAND • MANHATTAN • SARATOGA SPRINGS • SYRACUSE • SEATTLE • SHELTON

ANALYTICAL REPORT

Lab Number:	L2155680
Client:	P. W. Grosser 630 Johnson Avenue Suite 7 Bohemia, NY 11716
ATTN:	Thomas Melia
Phone:	(631) 589-6353
Project Name:	HK VENTURES-CALVERTON
Project Number:	HKV2101
Report Date:	10/28/21

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101

Lab Number: L2155680
Report Date: 10/28/21

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2155680-01	GW001	WATER	4285 MIDDLE COUNTRY RD, CALVERTON, NY	10/12/21 10:50	10/12/21
L2155680-02	GW002	WATER	4285 MIDDLE COUNTRY RD, CALVERTON, NY	10/12/21 12:25	10/12/21
L2155680-03	GW003	WATER	4285 MIDDLE COUNTRY RD, CALVERTON, NY	10/12/21 14:00	10/12/21
L2155680-04	FIELD BLANK	WATER	4285 MIDDLE COUNTRY RD, CALVERTON, NY	10/12/21 14:25	10/12/21

Project Name:	HK VENTURES-CALVERTON	**Lab Number:**	L2155680
Project Number:	HKV2101	**Report Date:**	10/28/21

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	HK VENTURES-CALVERTON	**Lab Number:**	L2155680
Project Number:	HKV2101	**Report Date:**	10/28/21

Case Narrative (continued)

Report Submission

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L2155680-01, -02, and -03: Sample containers for Dissolved Metals were received, but were not listed on the chain of custody. At the client's request, the analysis was performed.

L2155680-01: Herbicides and Total Cyanide were requested on the chain of custody; however, sample containers were not received. At the client's request, one of the containers submitted for Semivolatile Organics was utilized for the Herbicides analysis, and an aliquot was taken from an unpreserved container and preserved for the Total Cyanide analysis.

Perfluorinated Alkyl Acids by Isotope Dilution

L2155680-01, -02, and -03: The sample was centrifuged and decanted prior to extraction due to sample matrix.

L2155680-01 and -02: Extracted Internal Standard recoveries were outside the acceptance criteria for individual analytes. Please refer to the surrogate section of the report for details.

Herbicides

L2155680-01 and -02: The sample has elevated detection limits due to limited sample volume available for analysis.

Dissolved Metals

The WG1560979-3 MS recovery for calcium (150%), performed on L2155680-01, does not apply because the sample concentration is greater than four times the spike amount added.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Kelly Stenstrom

Title: Technical Director/Representative Date: 10/28/21

ORGANICS

VOLATILES

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-01
Client ID: GW001
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 10:50
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/22/21 12:31
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.70	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-01 Date Collected: 10/12/21 10:50

Client ID: GW001 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
1,2-Dichloroethene, Total	ND		ug/l	2.5	0.70	1
Dibromomethane	ND		ug/l	5.0	1.0	1
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70	1
Acrylonitrile	ND		ug/l	5.0	1.5	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	1.8	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	1.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
2,2-Dichloropropane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,3-Dichloropropane	ND		ug/l	2.5	0.70	1
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70	1
Bromobenzene	ND		ug/l	2.5	0.70	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
o-Chlorotoluene	ND		ug/l	2.5	0.70	1
p-Chlorotoluene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Hexachlorobutadiene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	ND		ug/l	2.5	0.70	1

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-01 Date Collected: 10/12/21 10:50

Client ID: GW001 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,4-Dioxane	ND		ug/l	250	61.	1
p-Diethylbenzene	ND		ug/l	2.0	0.70	1
p-Ethyltoluene	ND		ug/l	2.0	0.70	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54	1
Ethyl ether	ND		ug/l	2.5	0.70	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	98		70-130

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-02
Client ID: GW002
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 12:25
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 10/22/21 12:57
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.70	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-02 Date Collected: 10/12/21 12:25

Client ID: GW002 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
1,2-Dichloroethene, Total	ND		ug/l	2.5	0.70	1
Dibromomethane	ND		ug/l	5.0	1.0	1
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70	1
Acrylonitrile	ND		ug/l	5.0	1.5	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	5.8		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	1.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
2,2-Dichloropropane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,3-Dichloropropane	ND		ug/l	2.5	0.70	1
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70	1
Bromobenzene	ND		ug/l	2.5	0.70	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
o-Chlorotoluene	ND		ug/l	2.5	0.70	1
p-Chlorotoluene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Hexachlorobutadiene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	ND		ug/l	2.5	0.70	1

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-02 Date Collected: 10/12/21 12:25

Client ID: GW002 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,4-Dioxane	ND		ug/l	250	61.	1
p-Diethylbenzene	ND		ug/l	2.0	0.70	1
p-Ethyltoluene	ND		ug/l	2.0	0.70	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54	1
Ethyl ether	ND		ug/l	2.5	0.70	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	104		70-130

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-03 Date Collected: 10/12/21 14:00

Client ID: GW003 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Analytical Method: 1,8260C

Analytical Date: 10/22/21 13:24

Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.70	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-03 Date Collected: 10/12/21 14:00

Client ID: GW003 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
1,2-Dichloroethene, Total	ND		ug/l	2.5	0.70	1
Dibromomethane	ND		ug/l	5.0	1.0	1
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70	1
Acrylonitrile	ND		ug/l	5.0	1.5	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	1.5	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	1.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
2,2-Dichloropropane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,3-Dichloropropane	ND		ug/l	2.5	0.70	1
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70	1
Bromobenzene	ND		ug/l	2.5	0.70	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
o-Chlorotoluene	ND		ug/l	2.5	0.70	1
p-Chlorotoluene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Hexachlorobutadiene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	ND		ug/l	2.5	0.70	1

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-03 Date Collected: 10/12/21 14:00

Client ID: GW003 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,4-Dioxane	ND		ug/l	250	61.	1
p-Diethylbenzene	ND		ug/l	2.0	0.70	1
p-Ethyltoluene	ND		ug/l	2.0	0.70	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54	1
Ethyl ether	ND		ug/l	2.5	0.70	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	100		70-130

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/22/21 10:17
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1562328-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14
1,1-Dichloropropene	ND		ug/l	2.5	0.70
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/22/21 10:17
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1562328-5					
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
Xylenes, Total	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
1,2-Dichloroethene, Total	ND		ug/l	2.5	0.70
Dibromomethane	ND		ug/l	5.0	1.0
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70
Acrylonitrile	ND		ug/l	5.0	1.5
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
Vinyl acetate	ND		ug/l	5.0	1.0
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
2,2-Dichloropropane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,3-Dichloropropane	ND		ug/l	2.5	0.70
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70
Bromobenzene	ND		ug/l	2.5	0.70
n-Butylbenzene	ND		ug/l	2.5	0.70
sec-Butylbenzene	ND		ug/l	2.5	0.70
tert-Butylbenzene	ND		ug/l	2.5	0.70

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 10/22/21 10:17
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1562328-5					
o-Chlorotoluene	ND		ug/l	2.5	0.70
p-Chlorotoluene	ND		ug/l	2.5	0.70
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Hexachlorobutadiene	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
p-Isopropyltoluene	ND		ug/l	2.5	0.70
Naphthalene	ND		ug/l	2.5	0.70
n-Propylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70
1,4-Dioxane	ND		ug/l	250	61.
p-Diethylbenzene	ND		ug/l	2.0	0.70
p-Ethyltoluene	ND		ug/l	2.0	0.70
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54
Ethyl ether	ND		ug/l	2.5	0.70
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	96		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1562328-3 WG1562328-4								
Methylene chloride	88		89		70-130	1		20
1,1-Dichloroethane	97		97		70-130	0		20
Chloroform	90		95		70-130	5		20
Carbon tetrachloride	97		95		63-132	2		20
1,2-Dichloropropane	96		96		70-130	0		20
Dibromochloromethane	93		93		63-130	0		20
1,1,2-Trichloroethane	91		91		70-130	0		20
Tetrachloroethene	100		99		70-130	1		20
Chlorobenzene	97		99		75-130	2		20
Trichlorofluoromethane	100		96		62-150	4		20
1,2-Dichloroethane	96		93		70-130	3		20
1,1,1-Trichloroethane	94		93		67-130	1		20
Bromodichloromethane	91		91		67-130	0		20
trans-1,3-Dichloropropene	89		89		70-130	0		20
cis-1,3-Dichloropropene	91		89		70-130	2		20
1,1-Dichloropropene	97		96		70-130	1		20
Bromoform	93		94		54-136	1		20
1,1,2,2-Tetrachloroethane	98		100		67-130	2		20
Benzene	93		93		70-130	0		20
Toluene	94		94		70-130	0		20
Ethylbenzene	94		92		70-130	2		20
Chloromethane	85		85		64-130	0		20
Bromomethane	88		81		39-139	8		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1562328-3 WG1562328-4								
Vinyl chloride	93		90		55-140	3		20
Chloroethane	100		98		55-138	2		20
1,1-Dichloroethene	97		95		61-145	2		20
trans-1,2-Dichloroethene	93		91		70-130	2		20
Trichloroethene	88		88		70-130	0		20
1,2-Dichlorobenzene	97		98		70-130	1		20
1,3-Dichlorobenzene	97		98		70-130	1		20
1,4-Dichlorobenzene	98		99		70-130	1		20
Methyl tert butyl ether	94		91		63-130	3		20
p/m-Xylene	100		95		70-130	5		20
o-Xylene	100		95		70-130	5		20
cis-1,2-Dichloroethene	92		92		70-130	0		20
Dibromomethane	95		94		70-130	1		20
1,2,3-Trichloropropane	94		94		64-130	0		20
Acrylonitrile	96		99		70-130	3		20
Styrene	95		95		70-130	0		20
Dichlorodifluoromethane	79		75		36-147	5		20
Acetone	74		76		58-148	3		20
Carbon disulfide	96		96		51-130	0		20
2-Butanone	100		88		63-138	13		20
Vinyl acetate	130		120		70-130	8		20
4-Methyl-2-pentanone	90		90		59-130	0		20
2-Hexanone	87		83		57-130	5		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1562328-3 WG1562328-4								
Bromochloromethane	98		97		70-130	1		20
2,2-Dichloropropane	99		97		63-133	2		20
1,2-Dibromoethane	94		92		70-130	2		20
1,3-Dichloropropane	96		96		70-130	0		20
1,1,1,2-Tetrachloroethane	95		94		64-130	1		20
Bromobenzene	99		98		70-130	1		20
n-Butylbenzene	98		97		53-136	1		20
sec-Butylbenzene	99		100		70-130	1		20
tert-Butylbenzene	95		95		70-130	0		20
o-Chlorotoluene	94		94		70-130	0		20
p-Chlorotoluene	92		94		70-130	2		20
1,2-Dibromo-3-chloropropane	89		88		41-144	1		20
Hexachlorobutadiene	90		90		63-130	0		20
Isopropylbenzene	97		96		70-130	1		20
p-Isopropyltoluene	97		96		70-130	1		20
Naphthalene	110		110		70-130	0		20
n-Propylbenzene	97		96		69-130	1		20
1,2,3-Trichlorobenzene	110		120		70-130	9		20
1,2,4-Trichlorobenzene	100		100		70-130	0		20
1,3,5-Trimethylbenzene	95		94		64-130	1		20
1,2,4-Trimethylbenzene	92		93		70-130	1		20
1,4-Dioxane	86		84		56-162	2		20
p-Diethylbenzene	95		94		70-130	1		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1562328-3 WG1562328-4								
p-Ethyltoluene	95		94		70-130	1		20
1,2,4,5-Tetramethylbenzene	89		87		70-130	2		20
Ethyl ether	92		98		59-134	6		20
trans-1,4-Dichloro-2-butene	76		77		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	99		98		70-130
Toluene-d8	98		98		70-130
4-Bromofluorobenzene	98		98		70-130
Dibromofluoromethane	95		97		70-130

SEMIVOLATILES

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-01
Client ID: GW001
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 10:50
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 10/18/21 17:17
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 10/16/21 07:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.50	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.45	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.40	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.43	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-01 Date Collected: 10/12/21 10:50

Client ID: GW001 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
2-Methylphenol	ND		ug/l	5.0	0.49	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Benzoic Acid	ND		ug/l	50	2.6	1
Benzyl Alcohol	ND		ug/l	2.0	0.59	1
Carbazole	ND		ug/l	2.0	0.49	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	46		21-120
Phenol-d6	36		10-120
Nitrobenzene-d5	53		23-120
2-Fluorobiphenyl	59		15-120
2,4,6-Tribromophenol	55		10-120
4-Terphenyl-d14	70		41-149

Project Name: HK VENTURES-CALVERTON
Lab Number: L2155680
Project Number: HKV2101
Report Date: 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-01
Client ID: GW001
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 10:50
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/19/21 04:29
Analyst: DB

Extraction Method: EPA 3510C
Extraction Date: 10/18/21 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	45		15-110

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-01
Client ID: GW001
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 10:50
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/26/21 15:57
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 10/16/21 07:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	0.05	J	ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	0.32		ug/l	0.10	0.05	1
Benzo(a)anthracene	0.03	J	ug/l	0.10	0.02	1
Benzo(a)pyrene	0.02	J	ug/l	0.10	0.02	1
Benzo(b)fluoranthene	0.04	J	ug/l	0.10	0.01	1
Benzo(k)fluoranthene	0.01	J	ug/l	0.10	0.01	1
Chrysene	0.02	J	ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	0.02	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.02	J	ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	0.06	J	ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	0.02	J	ug/l	0.10	0.01	1
Pyrene	0.05	J	ug/l	0.10	0.02	1
2-Methylnaphthalene	0.09	J	ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-01 Date Collected: 10/12/21 10:50

Client ID: GW001 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	48		21-120
Phenol-d6	39		10-120
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	68		15-120
2,4,6-Tribromophenol	70		10-120
4-Terphenyl-d14	72		41-149

Project Name: HK VENTURES-CALVERTON
Lab Number: L2155680
Project Number: HKV2101
Report Date: 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-01
Client ID: GW001
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY
Date Collected: 10/12/21 10:50
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/17/21 04:21
Analyst: SG
Extraction Method: ALPHA 23528
Extraction Date: 10/14/21 16:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	17.5		ng/l	1.92	0.392	1
Perfluoropentanoic Acid (PFPeA)	31.6		ng/l	1.92	0.380	1
Perfluorobutanesulfonic Acid (PFBS)	5.34		ng/l	1.92	0.228	1
Perfluorohexanoic Acid (PFHxA)	31.9		ng/l	1.92	0.315	1
Perfluoroheptanoic Acid (PFHpA)	26.2		ng/l	1.92	0.216	1
Perfluorohexanesulfonic Acid (PFHxS)	20.4		ng/l	1.92	0.361	1
Perfluorooctanoic Acid (PFOA)	88.3		ng/l	1.92	0.227	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.92	1.28	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.92	0.661	1
Perfluorononanoic Acid (PFNA)	2.18		ng/l	1.92	0.300	1
Perfluorooctanesulfonic Acid (PFOS)	14.3		ng/l	1.92	0.484	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.92	0.292	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.92	1.16	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.92	0.622	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.92	0.250	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.92	0.941	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.92	0.557	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.92	0.772	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.92	0.357	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.92	0.314	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.92	0.238	1
PFOA/PFOS, Total	103		ng/l	1.92	0.227	1

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-01 Date Collected: 10/12/21 10:50

Client ID: GW001 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	80		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	72		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	77		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	58		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	69		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	87		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	78		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**223**	Q	14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	86		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	84		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	80		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**197**	Q	10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	89		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	77		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	31		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	82		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	63		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	59		22-136

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-02
Client ID: GW002
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 12:25
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 10/18/21 17:42
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 10/16/21 07:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.50	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.45	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.40	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.43	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-02 Date Collected: 10/12/21 12:25

Client ID: GW002 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
2-Methylphenol	ND		ug/l	5.0	0.49	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Benzoic Acid	ND		ug/l	50	2.6	1
Benzyl Alcohol	ND		ug/l	2.0	0.59	1
Carbazole	ND		ug/l	2.0	0.49	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	55		21-120
Phenol-d6	45		10-120
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	68		15-120
2,4,6-Tribromophenol	63		10-120
4-Terphenyl-d14	74		41-149

Project Name: HK VENTURES-CALVERTON
Lab Number: L2155680
Project Number: HKV2101
Report Date: 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-02
Client ID: GW002
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 12:25
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/19/21 04:57
Analyst: DB

Extraction Method: EPA 3510C
Extraction Date: 10/18/21 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	902.		ng/l	144	32.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	44		15-110

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-02
Client ID: GW002
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 12:25
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/26/21 16:36
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 10/16/21 07:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	0.04	J	ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	ND		ug/l	0.10	0.05	1
Benzo(a)anthracene	0.03	J	ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	0.03	J	ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	0.02	J	ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	0.04	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	0.03	J	ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	0.02	J	ug/l	0.10	0.01	1
Pyrene	0.04	J	ug/l	0.10	0.02	1
2-Methylnaphthalene	ND		ug/l	0.10	0.02	1
Pentachlorophenol	0.11	J	ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-02 Date Collected: 10/12/21 12:25

Client ID: GW002 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	57		21-120
Phenol-d6	47		10-120
Nitrobenzene-d5	79		23-120
2-Fluorobiphenyl	81		15-120
2,4,6-Tribromophenol	86		10-120
4-Terphenyl-d14	79		41-149

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-02
Client ID: GW002
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 12:25
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/17/21 04:37
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 10/14/21 16:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	58.4		ng/l	1.84	0.376	1
Perfluoropentanoic Acid (PFPeA)	88.6		ng/l	1.84	0.365	1
Perfluorobutanesulfonic Acid (PFBS)	26.4		ng/l	1.84	0.219	1
Perfluorohexanoic Acid (PFHxA)	81.6		ng/l	1.84	0.302	1
Perfluoroheptanoic Acid (PFHpA)	35.8		ng/l	1.84	0.208	1
Perfluorohexanesulfonic Acid (PFHxS)	20.6	F	ng/l	1.84	0.347	1
Perfluorooctanoic Acid (PFOA)	90.0		ng/l	1.84	0.218	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	3.39		ng/l	1.84	1.23	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.84	0.634	1
Perfluorononanoic Acid (PFNA)	7.71		ng/l	1.84	0.288	1
Perfluorooctanesulfonic Acid (PFOS)	34.7		ng/l	1.84	0.465	1
Perfluorodecanoic Acid (PFDA)	2.32		ng/l	1.84	0.280	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.84	1.12	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.84	0.598	1
Perfluoroundecanoic Acid (PFUnA)	0.627	J	ng/l	1.84	0.240	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.84	0.904	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.84	0.535	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.84	0.741	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.84	0.343	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.84	0.302	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.84	0.229	1
PFOA/PFOS, Total	125		ng/l	1.84	0.218	1

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-02 Date Collected: 10/12/21 12:25

Client ID: GW002 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	82		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	**59**	Q	62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	72		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	**52**	Q	57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	66		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	84		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	80		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**238**	Q	14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	92		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	84		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	82		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**238**	Q	10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	**117**	Q	24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	91		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	43		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	112		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	84		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	68		22-136

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-03
Client ID: GW003
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 14:00
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 10/18/21 18:07
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 10/16/21 07:12

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.50	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.45	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.40	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.43	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-03 Date Collected: 10/12/21 14:00

Client ID: GW003 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
2-Methylphenol	ND		ug/l	5.0	0.49	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Benzoic Acid	ND		ug/l	50	2.6	1
Benzyl Alcohol	ND		ug/l	2.0	0.59	1
Carbazole	ND		ug/l	2.0	0.49	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	56		21-120
Phenol-d6	45		10-120
Nitrobenzene-d5	69		23-120
2-Fluorobiphenyl	71		15-120
2,4,6-Tribromophenol	68		10-120
4-Terphenyl-d14	72		41-149

Project Name: HK VENTURES-CALVERTON
Lab Number: L2155680
Project Number: HKV2101
Report Date: 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-03
Client ID: GW003
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 14:00
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/19/21 05:24
Analyst: DB

Extraction Method: EPA 3510C
Extraction Date: 10/18/21 09:00

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by 8270D-SIM - Mansfield Lab						
1,4-Dioxane	ND		ng/l	150	33.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	44		15-110

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-03
Client ID: GW003
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 14:00
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 10/26/21 16:56
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 10/16/21 07:13

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	0.03	J	ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	0.07	J	ug/l	0.10	0.05	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	0.02	J	ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	0.05	J	ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	0.01	J	ug/l	0.10	0.01	1
Pyrene	0.02	J	ug/l	0.10	0.02	1
2-Methylnaphthalene	0.03	J	ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-03 Date Collected: 10/12/21 14:00

Client ID: GW003 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	55		21-120
Phenol-d6	45		10-120
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	77		15-120
2,4,6-Tribromophenol	81		10-120
4-Terphenyl-d14	70		41-149

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-03
Client ID: GW003
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 14:00
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/17/21 04:54
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 10/14/21 16:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.88	0.383	1
Perfluoropentanoic Acid (PFPeA)	0.771	J	ng/l	1.88	0.372	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.88	0.224	1
Perfluorohexanoic Acid (PFHxA)	0.331	J	ng/l	1.88	0.308	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.88	0.212	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.88	0.353	1
Perfluorooctanoic Acid (PFOA)	0.376	J	ng/l	1.88	0.222	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.88	1.25	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.88	0.647	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.88	0.293	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.88	0.474	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.88	0.286	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.88	1.14	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.88	0.609	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.88	0.244	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.88	0.921	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.88	0.545	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.88	0.756	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.88	0.350	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.88	0.308	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.88	0.233	1
PFOA/PFOS, Total	0.376	J	ng/l	1.88	0.222	1

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-03 Date Collected: 10/12/21 14:00

Client ID: GW003 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	72		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	80		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	103		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	73		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	75		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	103		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	80		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	94		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	100		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	89		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	100		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	73		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	97		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	25		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	87		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	89		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	86		22-136

Project Name: HK VENTURES-CALVERTON
Lab Number: L2155680
Project Number: HKV2101
Report Date: 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-04
Client ID: FIELD BLANK
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 14:25
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/17/21 05:10
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 10/14/21 16:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						
Perfluorobutanoic Acid (PFBA)	ND		ng/l	1.79	0.364	1
Perfluoropentanoic Acid (PFPeA)	0.364	J	ng/l	1.79	0.354	1
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	1.79	0.212	1
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	1.79	0.293	1
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	1.79	0.201	1
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	1.79	0.336	1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.79	0.211	1
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	1.79	1.19	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	1.79	0.614	1
Perfluorononanoic Acid (PFNA)	ND		ng/l	1.79	0.279	1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.79	0.450	1
Perfluorodecanoic Acid (PFDA)	ND		ng/l	1.79	0.272	1
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	1.79	1.08	1
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	1.79	0.579	1
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	1.79	0.232	1
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	1.79	0.875	1
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	1.79	0.518	1
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	1.79	0.718	1
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	1.79	0.332	1
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	1.79	0.292	1
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	1.79	0.222	1
PFOA/PFOS, Total	ND		ng/l	1.79	0.211	1

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-04 Date Collected: 10/12/21 14:25

Client ID: FIELD BLANK Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab						

Surrogate (Extracted Internal Standard)	% Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	95		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	109		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	101		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	92		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	90		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	99		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	93		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	78		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	97		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	99		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	101		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	86		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	96		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	106		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	32		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	99		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	98		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	91		22-136

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/17/21 02:25
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 10/14/21 16:50

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-04 Batch: WG1558724-1					
Perfluorobutanoic Acid (PFBA)	ND		ng/l	2.00	0.408
Perfluoropentanoic Acid (PFPeA)	0.412	J	ng/l	2.00	0.396
Perfluorobutanesulfonic Acid (PFBS)	ND		ng/l	2.00	0.238
Perfluorohexanoic Acid (PFHxA)	ND		ng/l	2.00	0.328
Perfluoroheptanoic Acid (PFHpA)	ND		ng/l	2.00	0.225
Perfluorohexanesulfonic Acid (PFHxS)	ND		ng/l	2.00	0.376
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	0.236
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND		ng/l	2.00	1.33
Perfluoroheptanesulfonic Acid (PFHpS)	ND		ng/l	2.00	0.688
Perfluorononanoic Acid (PFNA)	ND		ng/l	2.00	0.312
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00	0.504
Perfluorodecanoic Acid (PFDA)	ND		ng/l	2.00	0.304
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND		ng/l	2.00	1.21
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND		ng/l	2.00	0.648
Perfluoroundecanoic Acid (PFUnA)	ND		ng/l	2.00	0.260
Perfluorodecanesulfonic Acid (PFDS)	ND		ng/l	2.00	0.980
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND		ng/l	2.00	0.804
Perfluorododecanoic Acid (PFDoA)	ND		ng/l	2.00	0.372
Perfluorotridecanoic Acid (PFTrDA)	ND		ng/l	2.00	0.327
Perfluorotetradecanoic Acid (PFTA)	ND		ng/l	2.00	0.248
PFOA/PFOS, Total	ND		ng/l	2.00	0.236

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/17/21 02:25
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 10/14/21 16:50

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-04 Batch: WG1558724-1					

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	97		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	113		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	101		70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	93		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	93		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	108		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	95		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	77		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	99		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	100		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	100		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	90		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	93		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	105		55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	34		10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	101		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	99		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	93		22-136

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 134,LCMSMS-ID
Analytical Date: 10/24/21 19:20
Analyst: SG

Extraction Method: ALPHA 23528
Extraction Date: 10/14/21 16:50

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab for sample(s): 01-04 Batch: WG1558724-1					
Perfluorooctanesulfonamide (FOSA)	ND		ng/l	2.00	0.580

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	58		10-112

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/16/21 15:04
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 10/15/21 09:07

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1559061-1					
Acenaphthene	ND		ug/l	2.0	0.44
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.50
Hexachlorobenzene	ND		ug/l	2.0	0.46
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50
2-Chloronaphthalene	ND		ug/l	2.0	0.44
1,2-Dichlorobenzene	ND		ug/l	2.0	0.45
1,3-Dichlorobenzene	ND		ug/l	2.0	0.40
1,4-Dichlorobenzene	ND		ug/l	2.0	0.43
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93
Fluoranthene	ND		ug/l	2.0	0.26
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50
Hexachlorobutadiene	ND		ug/l	2.0	0.66
Hexachlorocyclopentadiene	ND		ug/l	20	0.69
Hexachloroethane	ND		ug/l	2.0	0.58
Isophorone	ND		ug/l	5.0	1.2
Naphthalene	ND		ug/l	2.0	0.46
Nitrobenzene	ND		ug/l	2.0	0.77
NDPA/DPA	ND		ug/l	2.0	0.42
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5
Butyl benzyl phthalate	ND		ug/l	5.0	1.2
Di-n-butylphthalate	ND		ug/l	5.0	0.39
Di-n-octylphthalate	ND		ug/l	5.0	1.3
Diethyl phthalate	ND		ug/l	5.0	0.38

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/16/21 15:04
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 10/15/21 09:07

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1559061-1					
Dimethyl phthalate	ND		ug/l	5.0	1.8
Benzo(a)anthracene	ND		ug/l	2.0	0.32
Benzo(a)pyrene	ND		ug/l	2.0	0.41
Benzo(b)fluoranthene	ND		ug/l	2.0	0.35
Benzo(k)fluoranthene	ND		ug/l	2.0	0.37
Chrysene	ND		ug/l	2.0	0.34
Acenaphthylene	ND		ug/l	2.0	0.46
Anthracene	ND		ug/l	2.0	0.33
Benzo(ghi)perylene	ND		ug/l	2.0	0.30
Fluorene	ND		ug/l	2.0	0.41
Phenanthrene	ND		ug/l	2.0	0.33
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.32
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.40
Pyrene	ND		ug/l	2.0	0.28
Biphenyl	ND		ug/l	2.0	0.46
4-Chloroaniline	ND		ug/l	5.0	1.1
2-Nitroaniline	ND		ug/l	5.0	0.50
3-Nitroaniline	ND		ug/l	5.0	0.81
4-Nitroaniline	ND		ug/l	5.0	0.80
Dibenzofuran	ND		ug/l	2.0	0.50
2-Methylnaphthalene	ND		ug/l	2.0	0.45
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44
Acetophenone	ND		ug/l	5.0	0.53
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61
p-Chloro-m-cresol	ND		ug/l	2.0	0.35
2-Chlorophenol	ND		ug/l	2.0	0.48
2,4-Dichlorophenol	ND		ug/l	5.0	0.41
2,4-Dimethylphenol	ND		ug/l	5.0	1.8
2-Nitrophenol	ND		ug/l	10	0.85

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 10/16/21 15:04
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 10/15/21 09:07

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1559061-1					
4-Nitrophenol	ND		ug/l	10	0.67
2,4-Dinitrophenol	ND		ug/l	20	6.6
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8
Pentachlorophenol	ND		ug/l	10	1.8
Phenol	ND		ug/l	5.0	0.57
2-Methylphenol	ND		ug/l	5.0	0.49
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77
Benzoic Acid	ND		ug/l	50	2.6
Benzyl Alcohol	ND		ug/l	2.0	0.59
Carbazole	ND		ug/l	2.0	0.49

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	57		21-120
Phenol-d6	44		10-120
Nitrobenzene-d5	58		23-120
2-Fluorobiphenyl	57		15-120
2,4,6-Tribromophenol	46		10-120
4-Terphenyl-d14	58		41-149

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 10/17/21 01:44
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 10/15/21 09:08

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-03 Batch: WG1559064-1					
Acenaphthene	ND		ug/l	0.10	0.01
2-Chloronaphthalene	ND		ug/l	0.20	0.02
Fluoranthene	ND		ug/l	0.10	0.02
Hexachlorobutadiene	ND		ug/l	0.50	0.05
Naphthalene	ND		ug/l	0.10	0.05
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01
Chrysene	ND		ug/l	0.10	0.01
Acenaphthylene	ND		ug/l	0.10	0.01
Anthracene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
2-Methylnaphthalene	ND		ug/l	0.10	0.02
Pentachlorophenol	ND		ug/l	0.80	0.01
Hexachlorobenzene	ND		ug/l	0.80	0.01
Hexachloroethane	ND		ug/l	0.80	0.06

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 10/17/21 01:44
Analyst: RP

Extraction Method: EPA 3510C
Extraction Date: 10/15/21 09:08

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-03 Batch: WG1559064-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	58		21-120
Phenol-d6	49		10-120
Nitrobenzene-d5	109		23-120
2-Fluorobiphenyl	65		15-120
2,4,6-Tribromophenol	100		10-120
4-Terphenyl-d14	84		41-149

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 10/19/21 02:38
Analyst: DB

Extraction Method: EPA 3510C
Extraction Date: 10/18/21 09:00

Parameter	Result	Qualifier	Units	RL	MDL
1,4 Dioxane by 8270D-SIM - Mansfield Lab for sample(s): 01-03 Batch: WG1559850-1					
1,4-Dioxane	ND		ng/l	150	33.9

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,4-Dioxane-d8	47		15-110

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 Batch: WG1558724-2								
Perfluorobutanoic Acid (PFBA)	96		-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	96		-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	94		-		65-157	-		30
Perfluorohexanoic Acid (PFHxA)	96		-		69-168	-		30
Perfluoroheptanoic Acid (PFHpA)	95		-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	91		-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	96		-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	100		-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	95		-		61-179	-		30
Perfluorononanoic Acid (PFNA)	94		-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	94		-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	93		-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	107		-		56-173	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	99		-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	95		-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	95		-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	89		-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	93		-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	100		-		67-153	-		30
Perfluorotridecanoic Acid (PFTrDA)	108		-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	103		-		59-182	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 Batch: WG1558724-2								

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	91				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	106				62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	96				70-131
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	88				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	88				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	102				71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	90				62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	76				14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	94				59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	96				69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	94				62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	83				10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	80				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	100				55-137
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	43				10-112
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	105				27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	94				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	90				22-136

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 Batch: WG1558724-2								
Perfluorooctanesulfonamide (FOSA)	108		-		46-170	-		30

Surrogate (Extracted Internal Standard)	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	55				10-112

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1559061-2 WG1559061-3								
Acenaphthene	44		68		37-111	**43**	Q	30
1,2,4-Trichlorobenzene	50		74		39-98	**39**	Q	30
Hexachlorobenzene	46		68		40-140	**39**	Q	30
Bis(2-chloroethyl)ether	45		69		40-140	**42**	Q	30
2-Chloronaphthalene	46		70		40-140	**41**	Q	30
1,2-Dichlorobenzene	49		70		40-140	**35**	Q	30
1,3-Dichlorobenzene	48		66		40-140	**32**	Q	30
1,4-Dichlorobenzene	49		71		36-97	**37**	Q	30
3,3'-Dichlorobenzidine	44		62		40-140	**34**	Q	30
2,4-Dinitrotoluene	**43**	Q	69		48-143	**46**	Q	30
2,6-Dinitrotoluene	46		74		40-140	**47**	Q	30
Fluoranthene	46		73		40-140	**45**	Q	30
4-Chlorophenyl phenyl ether	49		76		40-140	**43**	Q	30
4-Bromophenyl phenyl ether	46		70		40-140	**41**	Q	30
Bis(2-chloroisopropyl)ether	40		62		40-140	**43**	Q	30
Bis(2-chloroethoxy)methane	46		70		40-140	**41**	Q	30
Hexachlorobutadiene	49		73		40-140	**39**	Q	30
Hexachlorocyclopentadiene	42		63		40-140	**40**	Q	30
Hexachloroethane	44		65		40-140	**39**	Q	30
Isophorone	43		72		40-140	**50**	Q	30
Naphthalene	46		69		40-140	**40**	Q	30
Nitrobenzene	49		71		40-140	**37**	Q	30
NDPA/DPA	48		74		40-140	**43**	Q	30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1559061-2 WG1559061-3								
n-Nitrosodi-n-propylamine	44		68		29-132	**43**	Q	30
Bis(2-ethylhexyl)phthalate	40		61		40-140	**42**	Q	30
Butyl benzyl phthalate	40		66		40-140	**49**	Q	30
Di-n-butylphthalate	42		67		40-140	**46**	Q	30
Di-n-octylphthalate	45		64		40-140	**35**	Q	30
Diethyl phthalate	44		66		40-140	**40**	Q	30
Dimethyl phthalate	46		70		40-140	**41**	Q	30
Benzo(a)anthracene	49		72		40-140	**38**	Q	30
Benzo(a)pyrene	51		77		40-140	**41**	Q	30
Benzo(b)fluoranthene	49		73		40-140	**39**	Q	30
Benzo(k)fluoranthene	51		75		40-140	**38**	Q	30
Chrysene	49		72		40-140	**38**	Q	30
Acenaphthylene	48		72		45-123	**40**	Q	30
Anthracene	48		70		40-140	**37**	Q	30
Benzo(ghi)perylene	51		76		40-140	**39**	Q	30
Fluorene	47		72		40-140	**42**	Q	30
Phenanthrene	45		69		40-140	**42**	Q	30
Dibenzo(a,h)anthracene	52		76		40-140	**38**	Q	30
Indeno(1,2,3-cd)pyrene	51		75		40-140	**38**	Q	30
Pyrene	46		73		26-127	**45**	Q	30
Biphenyl	49		75		40-140	**42**	Q	30
4-Chloroaniline	47		69		40-140	**38**	Q	30
2-Nitroaniline	**48**	Q	70		52-143	**37**	Q	30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1559061-2 WG1559061-3								
3-Nitroaniline	41		64		25-145	**44**	Q	30
4-Nitroaniline	**40**	Q	64		51-143	**46**	Q	30
Dibenzofuran	47		72		40-140	**42**	Q	30
2-Methylnaphthalene	46		72		40-140	**44**	Q	30
1,2,4,5-Tetrachlorobenzene	52		78		2-134	**40**	Q	30
Acetophenone	49		72		39-129	**38**	Q	30
2,4,6-Trichlorophenol	51		74		30-130	**37**	Q	30
p-Chloro-m-cresol	50		75		23-97	**40**	Q	30
2-Chlorophenol	48		73		27-123	**41**	Q	30
2,4-Dichlorophenol	54		79		30-130	**38**	Q	30
2,4-Dimethylphenol	52		76		30-130	**38**	Q	30
2-Nitrophenol	49		74		30-130	**41**	Q	30
4-Nitrophenol	39		60		10-80	**42**	Q	30
2,4-Dinitrophenol	47		59		20-130	23		30
4,6-Dinitro-o-cresol	44		64		20-164	**37**	Q	30
Pentachlorophenol	40		66		9-103	**49**	Q	30
Phenol	38		60		12-110	**45**	Q	30
2-Methylphenol	51		74		30-130	**37**	Q	30
3-Methylphenol/4-Methylphenol	51		75		30-130	**38**	Q	30
2,4,5-Trichlorophenol	50		77		30-130	**43**	Q	30
Benzoic Acid	21		29		10-164	**32**	Q	30
Benzyl Alcohol	48		75		26-116	**44**	Q	30
Carbazole	**46**	Q	72		55-144	**44**	Q	30

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1559061-2 WG1559061-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	45		66		21-120
Phenol-d6	36		53		10-120
Nitrobenzene-d5	46		66		23-120
2-Fluorobiphenyl	44		67		15-120
2,4,6-Tribromophenol	39		63		10-120
4-Terphenyl-d14	46		71		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-03 Batch: WG1559064-2 WG1559064-3								
Acenaphthene	61		68		40-140	11		40
2-Chloronaphthalene	62		70		40-140	12		40
Fluoranthene	70		78		40-140	11		40
Hexachlorobutadiene	68		77		40-140	12		40
Naphthalene	60		68		40-140	13		40
Benzo(a)anthracene	66		75		40-140	13		40
Benzo(a)pyrene	62		70		40-140	12		40
Benzo(b)fluoranthene	61		72		40-140	17		40
Benzo(k)fluoranthene	63		68		40-140	8		40
Chrysene	60		68		40-140	13		40
Acenaphthylene	66		74		40-140	11		40
Anthracene	60		68		40-140	13		40
Benzo(ghi)perylene	65		74		40-140	13		40
Fluorene	64		74		40-140	14		40
Phenanthrene	60		66		40-140	10		40
Dibenzo(a,h)anthracene	69		77		40-140	11		40
Indeno(1,2,3-cd)pyrene	65		75		40-140	14		40
Pyrene	71		81		40-140	13		40
2-Methylnaphthalene	60		68		40-140	13		40
Pentachlorophenol	126		**141**	Q	40-140	11		40
Hexachlorobenzene	51		57		40-140	11		40
Hexachloroethane	64		72		40-140	12		40

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-03 Batch: WG1559064-2 WG1559064-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	55		60		21-120
Phenol-d6	47		51		10-120
Nitrobenzene-d5	98		108		23-120
2-Fluorobiphenyl	58		65		15-120
2,4,6-Tribromophenol	91		101		10-120
4-Terphenyl-d14	71		80		41-149

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by 8270D-SIM - Mansfield Lab	Associated sample(s): 01-03		Batch: WG1559850-2		WG1559850-3			
1,4-Dioxane	113		120		40-140	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,4-Dioxane-d8	46		49		15-110

Matrix Spike Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1558724-3 QC Sample: L2155884-03 Client ID: MS Sample												
Perfluorobutanoic Acid (PFBA)	26.3	38.3	62.3	94		-	-		67-148	-		30
Perfluoropentanoic Acid (PFPeA)	73.8	38.3	110	94		-	-		63-161	-		30
Perfluorobutanesulfonic Acid (PFBS)	7.58	34	37.6	88		-	-		65-157	-		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	35.9	33.6	94		-	-		37-219	-		30
Perfluorohexanoic Acid (PFHxA)	58.5	38.3	94.3	93		-	-		69-168	-		30
Perfluoropentanesulfonic Acid (PFPeS)	1.69J	36	32.2	85		-	-		52-156	-		30
Perfluoroheptanoic Acid (PFHpA)	23.3	38.3	58.1	91		-	-		58-159	-		30
Perfluorohexanesulfonic Acid (PFHxS)	4.44	35	38.4	97		-	-		69-177	-		30
Perfluorooctanoic Acid (PFOA)	19.7	38.3	55.5	93		-	-		63-159	-		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	36.5	33.9	93		-	-		49-187	-		30
Perfluoroheptanesulfonic Acid (PFHpS)	ND	36.5	34.1	93		-	-		61-179	-		30
Perfluorononanoic Acid (PFNA)	1.00J	38.3	35.7	90		-	-		68-171	-		30
Perfluorooctanesulfonic Acid (PFOS)	7.70	35.6	40.3	92		-	-		52-151	-		30
Perfluorodecanoic Acid (PFDA)	ND	38.3	33.7	88		-	-		63-171	-		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	36.8	32.4	88		-	-		56-173	-		30
Perfluorononanesulfonic Acid (PFNS)	ND	36.9	31.2	85		-	-		48-150	-		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	38.3	32.0	84		-	-		60-166	-		30
Perfluoroundecanoic Acid (PFUnA)	ND	38.3	33.9	88		-	-		60-153	-		30
Perfluorodecanesulfonic Acid (PFDS)	ND	37	29.6	80		-	-		38-156	-		30
Perfluorooctanesulfonamide (FOSA)	ND	38.3	34.7F	90		-	-		46-170	-		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	38.3	33.4	87		-	-		45-170	-		30
Perfluorododecanoic Acid (PFDoA)	ND	38.3	34.8	91		-	-		67-153	-		30

Matrix Spike Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1558724-3 QC Sample: L2155884-03 Client ID: MS Sample												
Perfluorotridecanoic Acid (PFTrDA)	ND	38.3	36.1	94		-	-		48-158	-		30
Perfluorotetradecanoic Acid (PFTA)	ND	38.3	34.6	90		-	-		59-182	-		30

Surrogate (Extracted Internal Standard)	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	**187**	Q			10-162
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**204**	Q			12-142
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	**249**	Q			14-147
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	79				27-126
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	78				24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	77				55-137
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	82				62-124
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	65				57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	73				60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	92				71-134
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	67				48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	63				22-136
Perfluoro[13C4]Butanoic Acid (MPFBA)	86				58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	77				62-163
Perfluoro[13C8]Octanesulfonamide (M8FOSA)	14				10-112
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	93				69-131
Perfluoro[13C8]Octanoic Acid (M8PFOA)	85				62-129
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	89				59-139
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	91				70-131

Lab Duplicate Analysis
Batch Quality Control

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101

Lab Number: L2155680
Report Date: 10/28/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1558724-4 QC Sample: L2155884-04 Client ID: DUP Sample						
Perfluorobutanoic Acid (PFBA)	20.0	20.0	ng/l	0		30
Perfluoropentanoic Acid (PFPeA)	42.0	42.0	ng/l	0		30
Perfluorobutanesulfonic Acid (PFBS)	23.3	24.1	ng/l	3		30
1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)	ND	ND	ng/l	NC		30
Perfluorohexanoic Acid (PFHxA)	36.1	35.5	ng/l	2		30
Perfluoropentanesulfonic Acid (PFPeS)	1.02J	1.03J	ng/l	NC		30
Perfluoroheptanoic Acid (PFHpA)	16.4	16.4	ng/l	0		30
Perfluorohexanesulfonic Acid (PFHxS)	13.5	12.8	ng/l	5		30
Perfluorooctanoic Acid (PFOA)	48.6	49.7	ng/l	2		30
1H,1H,2H,2H-Perfluorooctanesulfonic Acid (6:2FTS)	ND	ND	ng/l	NC		30
Perfluoroheptanesulfonic Acid (PFHpS)	0.838JF	ND	ng/l	NC		30
Perfluorononanoic Acid (PFNA)	0.940J	0.979J	ng/l	NC		30
Perfluorooctanesulfonic Acid (PFOS)	15.0	15.5	ng/l	3		30
Perfluorodecanoic Acid (PFDA)	ND	ND	ng/l	NC		30
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2FTS)	ND	ND	ng/l	NC		30
Perfluorononanesulfonic Acid (PFNS)	ND	ND	ng/l	NC		30
N-Methyl Perfluorooctanesulfonamidoacetic Acid (NMeFOSAA)	ND	ND	ng/l	NC		30
Perfluoroundecanoic Acid (PFUnA)	ND	ND	ng/l	NC		30
Perfluorodecanesulfonic Acid (PFDS)	ND	ND	ng/l	NC		30
N-Ethyl Perfluorooctanesulfonamidoacetic Acid (NEtFOSAA)	ND	ND	ng/l	NC		30

Lab Duplicate Analysis
Batch Quality Control

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101

Lab Number: L2155680
Report Date: 10/28/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by Isotope Dilution - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1558724-4 QC Sample: L2155884-04 Client ID: DUP Sample						
Perfluorododecanoic Acid (PFDoA)	ND	ND	ng/l	NC		30
Perfluorotridecanoic Acid (PFTrDA)	ND	ND	ng/l	NC		30
Perfluorotetradecanoic Acid (PFTA)	ND	ND	ng/l	NC		30

Surrogate (Extracted Internal Standard)	%Recovery	Qualifier	%Recovery	Qualifier	Acceptance Criteria
Perfluoro[13C4]Butanoic Acid (MPFBA)	79		79		58-132
Perfluoro[13C5]Pentanoic Acid (M5PFPEA)	85		85		62-163
Perfluoro[2,3,4-13C3]Butanesulfonic Acid (M3PFBS)	97		94		70-131
1H,1H,2H,2H-Perfluoro[1,2-13C2]Hexanesulfonic Acid (M2-4:2FTS)	**157**	Q	**151**	Q	12-142
Perfluoro[1,2,3,4,6-13C5]Hexanoic Acid (M5PFHxA)	73		74		57-129
Perfluoro[1,2,3,4-13C4]Heptanoic Acid (M4PFHpA)	78		77		60-129
Perfluoro[1,2,3-13C3]Hexanesulfonic Acid (M3PFHxS)	98		101		71-134
Perfluoro[13C8]Octanoic Acid (M8PFOA)	79		77		62-129
1H,1H,2H,2H-Perfluoro[1,2-13C2]Octanesulfonic Acid (M2-6:2FTS)	109		100		14-147
Perfluoro[13C9]Nonanoic Acid (M9PFNA)	80		79		59-139
Perfluoro[13C8]Octanesulfonic Acid (M8PFOS)	94		91		69-131
Perfluoro[1,2,3,4,5,6-13C6]Decanoic Acid (M6PFDA)	80		79		62-124
1H,1H,2H,2H-Perfluoro[1,2-13C2]Decanesulfonic Acid (M2-8:2FTS)	91		89		10-162
N-Deuteriomethylperfluoro-1-octanesulfonamidoacetic Acid (d3-NMeFOSAA)	71		71		24-116
Perfluoro[1,2,3,4,5,6,7-13C7]Undecanoic Acid (M7-PFUDA)	82		80		55-137
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	77		81		27-126
Perfluoro[1,2-13C2]Dodecanoic Acid (MPFDOA)	80		74		48-131
Perfluoro[1,2-13C2]Tetradecanoic Acid (M2PFTEDA)	74		72		22-136

PCBS

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-01
Client ID: GW001
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 10:50
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 10/20/21 01:07
Analyst: AD

Extraction Method: EPA 3510C
Extraction Date: 10/19/21 09:46
Cleanup Method: EPA 3665A
Cleanup Date: 10/19/21
Cleanup Method: EPA 3660B
Cleanup Date: 10/19/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.071	0.061	1	A
Aroclor 1221	ND		ug/l	0.071	0.061	1	A
Aroclor 1232	ND		ug/l	0.071	0.061	1	A
Aroclor 1242	ND		ug/l	0.071	0.061	1	A
Aroclor 1248	ND		ug/l	0.071	0.061	1	A
Aroclor 1254	ND		ug/l	0.071	0.061	1	A
Aroclor 1260	ND		ug/l	0.071	0.061	1	A
Aroclor 1262	ND		ug/l	0.071	0.061	1	A
Aroclor 1268	ND		ug/l	0.071	0.061	1	A
PCBs, Total	ND		ug/l	0.071	0.061	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73		30-150	A
Decachlorobiphenyl	70		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		30-150	B
Decachlorobiphenyl	66		30-150	B

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-02
Client ID: GW002
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 12:25
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 10/20/21 04:24
Analyst: AWS

Extraction Method: EPA 3510C
Extraction Date: 10/19/21 09:46
Cleanup Method: EPA 3665A
Cleanup Date: 10/19/21
Cleanup Method: EPA 3660B
Cleanup Date: 10/19/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.071	0.061	1	A
Aroclor 1221	ND		ug/l	0.071	0.061	1	A
Aroclor 1232	ND		ug/l	0.071	0.061	1	A
Aroclor 1242	ND		ug/l	0.071	0.061	1	A
Aroclor 1248	ND		ug/l	0.071	0.061	1	A
Aroclor 1254	ND		ug/l	0.071	0.061	1	A
Aroclor 1260	ND		ug/l	0.071	0.061	1	A
Aroclor 1262	ND		ug/l	0.071	0.061	1	A
Aroclor 1268	ND		ug/l	0.071	0.061	1	A
PCBs, Total	ND		ug/l	0.071	0.061	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	76		30-150	A
Decachlorobiphenyl	52		30-150	A
2,4,5,6-Tetrachloro-m-xylene	74		30-150	B
Decachlorobiphenyl	60		30-150	B

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-03
Client ID: GW003
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 14:00
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8082A
Analytical Date: 10/20/21 04:33
Analyst: AWS

Extraction Method: EPA 3510C
Extraction Date: 10/19/21 09:46
Cleanup Method: EPA 3665A
Cleanup Date: 10/19/21
Cleanup Method: EPA 3660B
Cleanup Date: 10/19/21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.071	0.061	1	A
Aroclor 1221	ND		ug/l	0.071	0.061	1	A
Aroclor 1232	ND		ug/l	0.071	0.061	1	A
Aroclor 1242	ND		ug/l	0.071	0.061	1	A
Aroclor 1248	ND		ug/l	0.071	0.061	1	A
Aroclor 1254	ND		ug/l	0.071	0.061	1	A
Aroclor 1260	ND		ug/l	0.071	0.061	1	A
Aroclor 1262	ND		ug/l	0.071	0.061	1	A
Aroclor 1268	ND		ug/l	0.071	0.061	1	A
PCBs, Total	ND		ug/l	0.071	0.061	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	56		30-150	A
Decachlorobiphenyl	41		30-150	A
2,4,5,6-Tetrachloro-m-xylene	56		30-150	B
Decachlorobiphenyl	50		30-150	B

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 10/19/21 17:29
Analyst: JWL

Extraction Method: EPA 3510C
Extraction Date: 10/19/21 09:46
Cleanup Method: EPA 3665A
Cleanup Date: 10/19/21
Cleanup Method: EPA 3660B
Cleanup Date: 10/19/21

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01-03 Batch: WG1560362-1						
Aroclor 1016	ND		ug/l	0.071	0.061	A
Aroclor 1221	ND		ug/l	0.071	0.061	A
Aroclor 1232	ND		ug/l	0.071	0.061	A
Aroclor 1242	ND		ug/l	0.071	0.061	A
Aroclor 1248	ND		ug/l	0.071	0.061	A
Aroclor 1254	ND		ug/l	0.071	0.061	A
Aroclor 1260	ND		ug/l	0.071	0.061	A
Aroclor 1262	ND		ug/l	0.071	0.061	A
Aroclor 1268	ND		ug/l	0.071	0.061	A
PCBs, Total	ND		ug/l	0.071	0.061	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	56		30-150	A
Decachlorobiphenyl	60		30-150	A
2,4,5,6-Tetrachloro-m-xylene	58		30-150	B
Decachlorobiphenyl	71		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01-03 Batch: WG1560362-2 WG1560362-3									
Aroclor 1016	78		76		40-140	3		50	A
Aroclor 1260	72		71		40-140	2		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	78		76		30-150	A
Decachlorobiphenyl	76		71		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		74		30-150	B
Decachlorobiphenyl	91		87		30-150	B

PESTICIDES

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-01
Client ID: GW001
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 10:50
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 10/20/21 11:46
Analyst: SDC

Extraction Method: EPA 3510C
Extraction Date: 10/19/21 17:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	0.006	J	ug/l	0.029	0.003	1	B
4,4'-DDE	0.005	JIP	ug/l	0.029	0.003	1	B
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND		ug/l	0.029	0.003	1	A
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	B
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
cis-Chlordane	ND	IP	ug/l	0.014	0.005	1	B
trans-Chlordane	ND		ug/l	0.014	0.004	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-01 Date Collected: 10/12/21 10:50

Client ID: GW001 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	55		30-150	A
Decachlorobiphenyl	57		30-150	A
2,4,5,6-Tetrachloro-m-xylene	57		30-150	B
Decachlorobiphenyl	58		30-150	B

Project Name: HK VENTURES-CALVERTON
Lab Number: L2155680
Project Number: HKV2101
Report Date: 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-01
Client ID: GW001
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 10:50
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8151A
Analytical Date: 10/21/21 20:43
Analyst: AR

Extraction Method: EPA 8151A
Extraction Date: 10/19/21 19:01

Methylation Date: 10/21/21 12:35

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
2,4-D	ND		ug/l	40.0	1.99	1	A
2,4,5-T	ND		ug/l	8.00	2.12	1	A
2,4,5-TP (Silvex)	ND		ug/l	8.00	2.16	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	72		30-150	A
DCAA	61		30-150	B

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-02
Client ID: GW002
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 12:25
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 10/20/21 11:57
Analyst: SDC

Extraction Method: EPA 3510C
Extraction Date: 10/19/21 17:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND	IP	ug/l	0.029	0.003	1	B
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND		ug/l	0.029	0.003	1	A
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-02 Date Collected: 10/12/21 12:25

Client ID: GW002 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	51		30-150	A
Decachlorobiphenyl	60		30-150	A
2,4,5,6-Tetrachloro-m-xylene	49		30-150	B
Decachlorobiphenyl	57		30-150	B

Project Name: HK VENTURES-CALVERTON
Lab Number: L2155680
Project Number: HKV2101
Report Date: 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-02
Client ID: GW002
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 12:25
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8151A
Analytical Date: 10/15/21 16:08
Analyst: AR

Extraction Method: EPA 8151A
Extraction Date: 10/13/21 11:29

Methylation Date: 10/14/21 07:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
2,4-D	ND		ug/l	35.7	1.78	1	A
2,4,5-T	ND		ug/l	7.14	1.90	1	A
2,4,5-TP (Silvex)	ND		ug/l	7.14	1.92	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	103		30-150	A
DCAA	88		30-150	B

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-03
Client ID: GW003
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 14:00
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8081B
Analytical Date: 10/20/21 13:44
Analyst: SDC

Extraction Method: EPA 3510C
Extraction Date: 10/19/21 17:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.014	0.003	1	A
Lindane	ND		ug/l	0.014	0.003	1	A
Alpha-BHC	ND		ug/l	0.014	0.003	1	A
Beta-BHC	ND		ug/l	0.014	0.004	1	A
Heptachlor	ND		ug/l	0.014	0.002	1	A
Aldrin	ND		ug/l	0.014	0.002	1	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	1	A
Endrin	ND		ug/l	0.029	0.003	1	A
Endrin aldehyde	ND		ug/l	0.029	0.006	1	A
Endrin ketone	ND		ug/l	0.029	0.003	1	A
Dieldrin	ND		ug/l	0.029	0.003	1	A
4,4'-DDE	ND		ug/l	0.029	0.003	1	A
4,4'-DDD	ND		ug/l	0.029	0.003	1	A
4,4'-DDT	ND		ug/l	0.029	0.003	1	B
Endosulfan I	ND		ug/l	0.014	0.002	1	A
Endosulfan II	ND		ug/l	0.029	0.004	1	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	1	A
Methoxychlor	ND		ug/l	0.143	0.005	1	A
Toxaphene	ND		ug/l	0.143	0.045	1	A
cis-Chlordane	ND		ug/l	0.014	0.005	1	A
trans-Chlordane	ND		ug/l	0.014	0.004	1	A
Chlordane	ND		ug/l	0.143	0.033	1	A

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-03 Date Collected: 10/12/21 14:00

Client ID: GW003 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	52		30-150	A
Decachlorobiphenyl	52		30-150	A
2,4,5,6-Tetrachloro-m-xylene	50		30-150	B
Decachlorobiphenyl	51		30-150	B

Project Name: HK VENTURES-CALVERTON
Lab Number: L2155680
Project Number: HKV2101
Report Date: 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-03
Client ID: GW003
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY

Date Collected: 10/12/21 14:00
Date Received: 10/12/21
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8151A
Analytical Date: 10/15/21 16:27
Analyst: AR

Extraction Method: EPA 8151A
Extraction Date: 10/13/21 11:29

Methylation Date: 10/14/21 07:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Chlorinated Herbicides by GC - Westborough Lab							
2,4-D	ND		ug/l	10.0	0.498	1	A
2,4,5-T	ND		ug/l	2.00	0.531	1	A
2,4,5-TP (Silvex)	ND		ug/l	2.00	0.539	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	94		30-150	A
DCAA	78		30-150	B

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8151A
Analytical Date: 10/15/21 14:18
Analyst: AR

Extraction Method: EPA 8151A
Extraction Date: 10/13/21 11:29

Methylation Date: 10/14/21 07:16

Parameter	Result	Qualifier	Units	RL	MDL	Column
Chlorinated Herbicides by GC - Westborough Lab for sample(s): 02-03 Batch: WG1558076-1						
2,4-D	ND		ug/l	10.0	0.498	A
2,4,5-T	ND		ug/l	2.00	0.531	A
2,4,5-TP (Silvex)	ND		ug/l	2.00	0.539	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
DCAA	84		30-150	A
DCAA	74		30-150	B

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8151A
Analytical Date: 10/21/21 11:44
Analyst: EJL

Extraction Method: EPA 8151A
Extraction Date: 10/19/21 16:27

Methylation Date: 10/21/21 11:02

Parameter	Result	Qualifier	Units	RL	MDL	Column
Chlorinated Herbicides by GC - Westborough Lab for sample(s): 01 Batch: WG1560601-1						
2,4-D	ND		ug/l	10.0	0.498	A
2,4,5-T	ND		ug/l	2.00	0.531	A
2,4,5-TP (Silvex)	ND		ug/l	2.00	0.539	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
DCAA	85		30-150	A
DCAA	72		30-150	B

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/20/21 12:09
Analyst: SDC

Extraction Method: EPA 3510C
Extraction Date: 10/19/21 17:33

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01-03 Batch: WG1560636-1						
Delta-BHC	ND		ug/l	0.014	0.003	A
Lindane	ND		ug/l	0.014	0.003	A
Alpha-BHC	ND		ug/l	0.014	0.003	A
Beta-BHC	ND		ug/l	0.014	0.004	A
Heptachlor	ND		ug/l	0.014	0.002	A
Aldrin	ND		ug/l	0.014	0.002	A
Heptachlor epoxide	ND		ug/l	0.014	0.003	A
Endrin	ND		ug/l	0.029	0.003	A
Endrin aldehyde	ND		ug/l	0.029	0.006	A
Endrin ketone	ND		ug/l	0.029	0.003	A
Dieldrin	ND		ug/l	0.029	0.003	A
4,4'-DDE	ND		ug/l	0.029	0.003	A
4,4'-DDD	ND		ug/l	0.029	0.003	A
Endosulfan I	ND		ug/l	0.014	0.002	A
Endosulfan II	ND		ug/l	0.029	0.004	A
Endosulfan sulfate	ND		ug/l	0.029	0.003	A
Methoxychlor	ND		ug/l	0.143	0.005	A
Toxaphene	ND		ug/l	0.143	0.045	A
cis-Chlordane	ND		ug/l	0.014	0.005	A
trans-Chlordane	ND		ug/l	0.014	0.004	A
Chlordane	ND		ug/l	0.143	0.033	A
4,4'-DDT	ND		ug/l	0.029	0.003	B

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8081B
Analytical Date: 10/20/21 12:09
Analyst: SDC

Extraction Method: EPA 3510C
Extraction Date: 10/19/21 17:33

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01-03 Batch: WG1560636-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	52		30-150	A
Decachlorobiphenyl	52		30-150	A
2,4,5,6-Tetrachloro-m-xylene	50		30-150	B
Decachlorobiphenyl	50		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Chlorinated Herbicides by GC - Westborough Lab Associated sample(s): 02-03 Batch: WG1558076-2 WG1558076-3									
2,4-D	89		88		30-150	1		25	A
2,4,5-T	89		88		30-150	1		25	A
2,4,5-TP (Silvex)	91		90		30-150	1		25	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
DCAA	89		88		30-150	A
DCAA	98		91		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Chlorinated Herbicides by GC - Westborough Lab Associated sample(s): 01 Batch: WG1560601-2 WG1560601-3									
2,4-D	78		75		30-150	4		25	A
2,4,5-T	80		79		30-150	1		25	A
2,4,5-TP (Silvex)	81		80		30-150	1		25	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
DCAA	77		77		30-150	A
DCAA	78		79		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01-03 Batch: WG1560636-2 WG1560636-3									
Delta-BHC	73		65		30-150	11		20	A
Lindane	77		70		30-150	9		20	A
Alpha-BHC	76		67		30-150	13		20	A
Beta-BHC	74		64		30-150	15		20	A
Heptachlor	80		71		30-150	12		20	A
Aldrin	72		64		30-150	11		20	A
Heptachlor epoxide	73		64		30-150	12		20	A
Endrin	76		66		30-150	14		20	A
Endrin aldehyde	72		61		30-150	17		20	A
Endrin ketone	83		71		30-150	16		20	A
Dieldrin	79		68		30-150	15		20	A
4,4'-DDE	72		63		30-150	13		20	A
4,4'-DDD	79		69		30-150	14		20	A
4,4'-DDT	80		69		30-150	14		20	A
Endosulfan I	70		62		30-150	13		20	A
Endosulfan II	77		65		30-150	17		20	A
Endosulfan sulfate	74		65		30-150	13		20	A
Methoxychlor	86		71		30-150	19		20	A
cis-Chlordane	62		55		30-150	12		20	A
trans-Chlordane	74		65		30-150	13		20	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01-03 Batch: WG1560636-2 WG1560636-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		56		30-150	A
Decachlorobiphenyl	99		76		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		53		30-150	B
Decachlorobiphenyl	89		68		30-150	B

METALS

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-01 Date Collected: 10/12/21 10:50

Client ID: GW001 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	2.53		mg/l	0.0100	0.00327	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Antimony, Total	0.00054	J	mg/l	0.00400	0.00042	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Arsenic, Total	0.00188		mg/l	0.00050	0.00016	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Barium, Total	0.1143		mg/l	0.00050	0.00017	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Beryllium, Total	0.00023	J	mg/l	0.00050	0.00010	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Cadmium, Total	0.00010	J	mg/l	0.00020	0.00005	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Calcium, Total	83.6		mg/l	0.100	0.0394	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Chromium, Total	0.09454		mg/l	0.00100	0.00017	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Cobalt, Total	0.00575		mg/l	0.00050	0.00016	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Copper, Total	0.02474		mg/l	0.00100	0.00038	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Iron, Total	14.3		mg/l	0.0500	0.0191	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Lead, Total	0.00762		mg/l	0.00100	0.00034	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Magnesium, Total	10.4		mg/l	0.0700	0.0242	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Manganese, Total	1.303		mg/l	0.00100	0.00044	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Mercury, Total	ND		mg/l	0.00020	0.00009	1	10/22/21 14:02	10/23/21 14:55	EPA 7470A	1,7470A	NB
Nickel, Total	0.03099		mg/l	0.00200	0.00055	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Potassium, Total	10.4		mg/l	0.100	0.0309	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Selenium, Total	ND		mg/l	0.00500	0.00173	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Silver, Total	ND		mg/l	0.00040	0.00016	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Sodium, Total	52.6		mg/l	0.100	0.0293	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Thallium, Total	0.00041	J	mg/l	0.00100	0.00014	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Vanadium, Total	0.00870		mg/l	0.00500	0.00157	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Zinc, Total	0.03197		mg/l	0.01000	0.00341	1	10/22/21 09:19	10/27/21 17:45	EPA 3005A	1,6020B	PS
Dissolved Metals - Mansfield Lab											
Aluminum, Dissolved	0.00430	J	mg/l	0.0100	0.00327	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Antimony, Dissolved	ND		mg/l	0.00400	0.00042	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Arsenic, Dissolved	0.00020	J	mg/l	0.00050	0.00016	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Barium, Dissolved	0.08338		mg/l	0.00050	0.00017	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Beryllium, Dissolved	ND		mg/l	0.00050	0.00010	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-01 Date Collected: 10/12/21 10:50

Client ID: GW001 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Cadmium, Dissolved	ND		mg/l	0.00020	0.00005	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Calcium, Dissolved	89.0		mg/l	0.100	0.0394	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Chromium, Dissolved	0.00024	J	mg/l	0.00100	0.00017	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Cobalt, Dissolved	0.00222		mg/l	0.00050	0.00016	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Copper, Dissolved	0.00345		mg/l	0.00100	0.00038	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Iron, Dissolved	0.0271	J	mg/l	0.0500	0.0191	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Lead, Dissolved	ND		mg/l	0.00100	0.00034	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Magnesium, Dissolved	10.3		mg/l	0.0700	0.0242	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Manganese, Dissolved	1.030		mg/l	0.00100	0.00044	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Mercury, Dissolved	ND		mg/l	0.00020	0.00009	1	10/25/21 21:18	10/26/21 09:25	EPA 7470A	1,7470A	AC
Nickel, Dissolved	0.00829		mg/l	0.00200	0.00055	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Potassium, Dissolved	10.7		mg/l	0.100	0.0309	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Selenium, Dissolved	ND		mg/l	0.00500	0.00173	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Silver, Dissolved	ND		mg/l	0.00040	0.00016	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Sodium, Dissolved	54.8		mg/l	0.100	0.0293	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Thallium, Dissolved	0.00042	J	mg/l	0.00100	0.00014	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Vanadium, Dissolved	ND		mg/l	0.00500	0.00157	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS
Zinc, Dissolved	ND		mg/l	0.01000	0.00341	1	10/25/21 20:39	10/27/21 12:01	EPA 3005A	1,6020B	PS

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-02 Date Collected: 10/12/21 12:25

Client ID: GW002 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	3.63		mg/l	0.0100	0.00327	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Antimony, Total	0.00057	J	mg/l	0.00400	0.00042	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Arsenic, Total	0.00299		mg/l	0.00050	0.00016	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Barium, Total	0.1272		mg/l	0.00050	0.00017	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Beryllium, Total	0.00027	J	mg/l	0.00050	0.00010	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Cadmium, Total	0.00015	J	mg/l	0.00020	0.00005	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Calcium, Total	102.		mg/l	0.100	0.0394	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Chromium, Total	0.09891		mg/l	0.00100	0.00017	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Cobalt, Total	0.00761		mg/l	0.00050	0.00016	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Copper, Total	0.04710		mg/l	0.00100	0.00038	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Iron, Total	19.2		mg/l	0.0500	0.0191	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Lead, Total	0.00740		mg/l	0.00100	0.00034	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Magnesium, Total	13.9		mg/l	0.0700	0.0242	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Manganese, Total	12.52		mg/l	0.02000	0.00880	20	10/22/21 09:19	10/27/21 19:17	EPA 3005A	1,6020B	PS
Mercury, Total	ND		mg/l	0.00020	0.00009	1	10/22/21 14:02	10/23/21 14:58	EPA 7470A	1,7470A	NB
Nickel, Total	0.03454		mg/l	0.00200	0.00055	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Potassium, Total	109.		mg/l	0.100	0.0309	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Selenium, Total	ND		mg/l	0.00500	0.00173	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Silver, Total	ND		mg/l	0.00040	0.00016	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Sodium, Total	95.5		mg/l	0.100	0.0293	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Thallium, Total	0.00062	J	mg/l	0.00100	0.00014	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Vanadium, Total	0.01084		mg/l	0.00500	0.00157	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Zinc, Total	0.1427		mg/l	0.01000	0.00341	1	10/22/21 09:19	10/27/21 17:49	EPA 3005A	1,6020B	PS
Dissolved Metals - Mansfield Lab											
Aluminum, Dissolved	0.00607	J	mg/l	0.0100	0.00327	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Antimony, Dissolved	0.00051	J	mg/l	0.00400	0.00042	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Arsenic, Dissolved	0.00076		mg/l	0.00050	0.00016	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Barium, Dissolved	0.09289		mg/l	0.00050	0.00017	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Beryllium, Dissolved	ND		mg/l	0.00050	0.00010	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-02 Date Collected: 10/12/21 12:25

Client ID: GW002 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Cadmium, Dissolved	0.00009	J	mg/l	0.00020	0.00005	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Calcium, Dissolved	109.		mg/l	0.100	0.0394	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Chromium, Dissolved	ND		mg/l	0.00100	0.00017	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Cobalt, Dissolved	0.00371		mg/l	0.00050	0.00016	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Copper, Dissolved	0.01938		mg/l	0.00100	0.00038	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Iron, Dissolved	ND		mg/l	0.0500	0.0191	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Lead, Dissolved	ND		mg/l	0.00100	0.00034	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Magnesium, Dissolved	14.0		mg/l	0.0700	0.0242	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Manganese, Dissolved	8.154		mg/l	0.00500	0.00220	5	10/25/21 20:39	10/27/21 15:34	EPA 3005A	1,6020B	PS
Mercury, Dissolved	ND		mg/l	0.00020	0.00009	1	10/25/21 21:18	10/26/21 09:28	EPA 7470A	1,7470A	AC
Nickel, Dissolved	0.01419		mg/l	0.00200	0.00055	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Potassium, Dissolved	117.		mg/l	0.100	0.0309	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Selenium, Dissolved	ND		mg/l	0.00500	0.00173	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Silver, Dissolved	ND		mg/l	0.00040	0.00016	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Sodium, Dissolved	101.		mg/l	0.100	0.0293	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Thallium, Dissolved	0.00065	J	mg/l	0.00100	0.00014	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Vanadium, Dissolved	ND		mg/l	0.00500	0.00157	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS
Zinc, Dissolved	0.01699		mg/l	0.01000	0.00341	1	10/25/21 20:39	10/27/21 12:05	EPA 3005A	1,6020B	PS

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-03 Date Collected: 10/12/21 14:00

Client ID: GW003 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	3.30		mg/l	0.0100	0.00327	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Antimony, Total	ND		mg/l	0.00400	0.00042	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Arsenic, Total	0.00179		mg/l	0.00050	0.00016	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Barium, Total	0.05796		mg/l	0.00050	0.00017	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Beryllium, Total	0.00026	J	mg/l	0.00050	0.00010	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Cadmium, Total	0.00007	J	mg/l	0.00020	0.00005	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Calcium, Total	6.54		mg/l	0.100	0.0394	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Chromium, Total	0.1272		mg/l	0.00100	0.00017	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Cobalt, Total	0.00465		mg/l	0.00050	0.00016	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Copper, Total	0.03325		mg/l	0.00100	0.00038	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Iron, Total	17.8		mg/l	0.0500	0.0191	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Lead, Total	0.00705		mg/l	0.00100	0.00034	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Magnesium, Total	1.89		mg/l	0.0700	0.0242	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Manganese, Total	0.3775		mg/l	0.00100	0.00044	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Mercury, Total	ND		mg/l	0.00020	0.00009	1	10/22/21 14:02	10/23/21 15:02	EPA 7470A	1,7470A	NB
Nickel, Total	0.02939		mg/l	0.00200	0.00055	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Potassium, Total	1.85		mg/l	0.100	0.0309	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Selenium, Total	ND		mg/l	0.00500	0.00173	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Silver, Total	ND		mg/l	0.00040	0.00016	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Sodium, Total	5.69		mg/l	0.100	0.0293	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Thallium, Total	0.00016	J	mg/l	0.00100	0.00014	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Vanadium, Total	0.00847		mg/l	0.00500	0.00157	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Zinc, Total	0.07399		mg/l	0.01000	0.00341	1	10/22/21 09:19	10/27/21 17:54	EPA 3005A	1,6020B	PS
Dissolved Metals - Mansfield Lab											
Aluminum, Dissolved	ND		mg/l	0.0100	0.00327	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Antimony, Dissolved	ND		mg/l	0.00400	0.00042	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Arsenic, Dissolved	ND		mg/l	0.00050	0.00016	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Barium, Dissolved	0.01571		mg/l	0.00050	0.00017	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Beryllium, Dissolved	ND		mg/l	0.00050	0.00010	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-03 Date Collected: 10/12/21 14:00

Client ID: GW003 Date Received: 10/12/21

Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Cadmium, Dissolved	ND		mg/l	0.00020	0.00005	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Calcium, Dissolved	6.19		mg/l	0.100	0.0394	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Chromium, Dissolved	0.00035	J	mg/l	0.00100	0.00017	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Cobalt, Dissolved	0.00197		mg/l	0.00050	0.00016	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Copper, Dissolved	0.00079	J	mg/l	0.00100	0.00038	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Iron, Dissolved	0.0251	J	mg/l	0.0500	0.0191	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Lead, Dissolved	ND		mg/l	0.00100	0.00034	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Magnesium, Dissolved	1.10		mg/l	0.0700	0.0242	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Manganese, Dissolved	0.2321		mg/l	0.00100	0.00044	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Mercury, Dissolved	ND		mg/l	0.00020	0.00009	1	10/25/21 21:18	10/26/21 09:31	EPA 7470A	1,7470A	AC
Nickel, Dissolved	0.00948		mg/l	0.00200	0.00055	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Potassium, Dissolved	1.38		mg/l	0.100	0.0309	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Selenium, Dissolved	ND		mg/l	0.00500	0.00173	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Silver, Dissolved	ND		mg/l	0.00040	0.00016	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Sodium, Dissolved	5.72		mg/l	0.100	0.0293	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Thallium, Dissolved	0.00015	J	mg/l	0.00100	0.00014	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Vanadium, Dissolved	ND		mg/l	0.00500	0.00157	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS
Zinc, Dissolved	0.01185		mg/l	0.01000	0.00341	1	10/25/21 20:39	10/27/21 12:10	EPA 3005A	1,6020B	PS

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1559311-1										
Aluminum, Total	ND		mg/l	0.0100	0.00327	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Antimony, Total	ND		mg/l	0.00400	0.00042	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Arsenic, Total	ND		mg/l	0.00050	0.00016	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Barium, Total	ND		mg/l	0.00050	0.00017	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Beryllium, Total	ND		mg/l	0.00050	0.00010	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Cadmium, Total	ND		mg/l	0.00020	0.00005	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Calcium, Total	ND		mg/l	0.100	0.0394	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Chromium, Total	ND		mg/l	0.00100	0.00017	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Cobalt, Total	ND		mg/l	0.00050	0.00016	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Copper, Total	ND		mg/l	0.00100	0.00038	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Iron, Total	ND		mg/l	0.0500	0.0191	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Lead, Total	ND		mg/l	0.00100	0.00034	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Magnesium, Total	ND		mg/l	0.0700	0.0242	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Manganese, Total	ND		mg/l	0.00100	0.00044	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Nickel, Total	ND		mg/l	0.00200	0.00055	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Potassium, Total	ND		mg/l	0.100	0.0309	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Selenium, Total	ND		mg/l	0.00500	0.00173	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Silver, Total	ND		mg/l	0.00040	0.00016	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Sodium, Total	ND		mg/l	0.100	0.0293	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Thallium, Total	ND		mg/l	0.00100	0.00014	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Vanadium, Total	ND		mg/l	0.00500	0.00157	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS
Zinc, Total	ND		mg/l	0.01000	0.00341	1	10/22/21 09:19	10/27/21 16:28	1,6020B	PS

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1559314-1										
Mercury, Total	ND		mg/l	0.00020	0.00009	1	10/22/21 14:02	10/23/21 14:32	1,7470A	NB

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7470A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1560979-1										
Aluminum, Dissolved	ND		mg/l	0.0100	0.00327	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Antimony, Dissolved	ND		mg/l	0.00400	0.00042	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Arsenic, Dissolved	0.00018	J	mg/l	0.00050	0.00016	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Barium, Dissolved	ND		mg/l	0.00050	0.00017	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Beryllium, Dissolved	ND		mg/l	0.00050	0.00010	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Cadmium, Dissolved	ND		mg/l	0.00020	0.00005	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Calcium, Dissolved	ND		mg/l	0.100	0.0394	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Chromium, Dissolved	ND		mg/l	0.00100	0.00017	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Cobalt, Dissolved	ND		mg/l	0.00050	0.00016	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Copper, Dissolved	ND		mg/l	0.00100	0.00038	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Iron, Dissolved	ND		mg/l	0.0500	0.0191	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Lead, Dissolved	ND		mg/l	0.00100	0.00034	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Magnesium, Dissolved	ND		mg/l	0.0700	0.0242	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Manganese, Dissolved	ND		mg/l	0.00100	0.00044	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Nickel, Dissolved	ND		mg/l	0.00200	0.00055	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Potassium, Dissolved	ND		mg/l	0.100	0.0309	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Selenium, Dissolved	ND		mg/l	0.00500	0.00173	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Silver, Dissolved	ND		mg/l	0.00040	0.00016	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Sodium, Dissolved	ND		mg/l	0.100	0.0293	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Thallium, Dissolved	0.00039	J	mg/l	0.00100	0.00014	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Vanadium, Dissolved	ND		mg/l	0.00500	0.00157	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS
Zinc, Dissolved	ND		mg/l	0.01000	0.00341	1	10/25/21 20:39	10/27/21 11:56	1,6020B	PS

Prep Information

Digestion Method: EPA 3005A

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1560982-1										
Mercury, Dissolved	ND		mg/l	0.00020	0.00009	1	10/25/21 21:18	10/26/21 09:01	1,7470A	AC

Prep Information

Digestion Method: EPA 7470A

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1559311-2								
Aluminum, Total	99		-		80-120	-		
Antimony, Total	93		-		80-120	-		
Arsenic, Total	104		-		80-120	-		
Barium, Total	103		-		80-120	-		
Beryllium, Total	99		-		80-120	-		
Cadmium, Total	100		-		80-120	-		
Calcium, Total	101		-		80-120	-		
Chromium, Total	102		-		80-120	-		
Cobalt, Total	97		-		80-120	-		
Copper, Total	100		-		80-120	-		
Iron, Total	107		-		80-120	-		
Lead, Total	117		-		80-120	-		
Magnesium, Total	108		-		80-120	-		
Manganese, Total	103		-		80-120	-		
Nickel, Total	98		-		80-120	-		
Potassium, Total	104		-		80-120	-		
Selenium, Total	104		-		80-120	-		
Silver, Total	100		-		80-120	-		
Sodium, Total	107		-		80-120	-		
Thallium, Total	111		-		80-120	-		
Vanadium, Total	101		-		80-120	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1559311-2					
Zinc, Total	100	-	80-120	-	
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1559314-2					
Mercury, Total	96	-	80-120	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1560979-2					
Aluminum, Dissolved	100	-	80-120	-	
Antimony, Dissolved	88	-	80-120	-	
Arsenic, Dissolved	103	-	80-120	-	
Barium, Dissolved	101	-	80-120	-	
Beryllium, Dissolved	101	-	80-120	-	
Cadmium, Dissolved	100	-	80-120	-	
Calcium, Dissolved	105	-	80-120	-	
Chromium, Dissolved	103	-	80-120	-	
Cobalt, Dissolved	97	-	80-120	-	
Copper, Dissolved	99	-	80-120	-	
Iron, Dissolved	106	-	80-120	-	
Lead, Dissolved	106	-	80-120	-	
Magnesium, Dissolved	108	-	80-120	-	
Manganese, Dissolved	104	-	80-120	-	
Nickel, Dissolved	99	-	80-120	-	
Potassium, Dissolved	110	-	80-120	-	
Selenium, Dissolved	102	-	80-120	-	
Silver, Dissolved	101	-	80-120	-	
Sodium, Dissolved	107	-	80-120	-	
Thallium, Dissolved	111	-	80-120	-	
Vanadium, Dissolved	104	-	80-120	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1560979-2					
Zinc, Dissolved	98	-	80-120	-	
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1560982-2					
Mercury, Dissolved	95	-	80-120	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101

Lab Number: L2155680
Report Date: 10/28/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1559311-3 WG1559311-4 QC Sample: L2157466-04 Client ID: MS Sample												
Aluminum, Total	0.0752	2	2.02	97		2.16	104		75-125	7		20
Antimony, Total	0.00304J	0.5	0.4661	93		0.4965	99		75-125	6		20
Arsenic, Total	0.00683	0.12	0.1306	103		0.1378	109		75-125	5		20
Barium, Total	0.1290	2	2.261	107		2.259	106		75-125	0		20
Beryllium, Total	ND	0.05	0.05071	101		0.05115	102		75-125	1		20
Cadmium, Total	0.00027	0.053	0.05557	104		0.05436	102		75-125	2		20
Calcium, Total	154.	10	166	120		168	**140**	Q	75-125	1		20
Chromium, Total	0.00090J	0.2	0.2112	106		0.2093	105		75-125	1		20
Cobalt, Total	0.01586	0.5	0.5152	100		0.5104	99		75-125	1		20
Copper, Total	0.00903	0.25	0.2675	103		0.2645	102		75-125	1		20
Iron, Total	2.90	1	3.99	109		4.04	114		75-125	1		20
Lead, Total	0.01751	0.53	0.6562	120		0.6603	121		75-125	1		20
Magnesium, Total	14.0	10	24.7	107		25.4	114		75-125	3		20
Manganese, Total	2.206	0.5	2.770	113		2.796	118		75-125	1		20
Nickel, Total	0.02041	0.5	0.5258	101		0.5177	99		75-125	2		20
Potassium, Total	10.9	10	21.9	110		22.1	112		75-125	1		20
Selenium, Total	ND	0.12	0.125	104		0.132	110		75-125	5		20
Silver, Total	ND	0.05	0.05124	102		0.05214	104		75-125	2		20
Sodium, Total	15.6	10	26.3	107		27.0	114		75-125	3		20
Thallium, Total	ND	0.12	0.1374	114		0.1401	117		75-125	2		20
Vanadium, Total	ND	0.5	0.5165	103		0.5266	105		75-125	2		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101

Lab Number: L2155680
Report Date: 10/28/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1559311-3 WG1559311-4 QC Sample: L2157466-04 Client ID: MS Sample									
Zinc, Total	0.7020	0.5	1.234	106	1.243	108	75-125	1	20
Total Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1559314-3 WG1559314-4 QC Sample: L2157466-04 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.00493	99	0.00491	98	75-125	0	20

Matrix Spike Analysis
Batch Quality Control

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101

Lab Number: L2155680
Report Date: 10/28/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1560979-3 QC Sample: L2155680-01 Client ID: GW001										
Aluminum, Dissolved	0.00430J	2	2.06	103		-	-	75-125	-	20
Antimony, Dissolved	ND	0.5	0.5732	115		-	-	75-125	-	20
Arsenic, Dissolved	0.00020J	0.12	0.1320	110		-	-	75-125	-	20
Barium, Dissolved	0.08338	2	2.151	103		-	-	75-125	-	20
Beryllium, Dissolved	ND	0.05	0.05187	104		-	-	75-125	-	20
Cadmium, Dissolved	ND	0.053	0.05392	102		-	-	75-125	-	20
Calcium, Dissolved	89.0	10	104	**150**	Q	-	-	75-125	-	20
Chromium, Dissolved	0.00024J	0.2	0.2084	104		-	-	75-125	-	20
Cobalt, Dissolved	0.00222	0.5	0.5026	100		-	-	75-125	-	20
Copper, Dissolved	0.00345	0.25	0.2606	103		-	-	75-125	-	20
Iron, Dissolved	0.0271J	1	1.09	109		-	-	75-125	-	20
Lead, Dissolved	ND	0.53	0.5708	108		-	-	75-125	-	20
Magnesium, Dissolved	10.3	10	21.4	111		-	-	75-125	-	20
Manganese, Dissolved	1.030	0.5	1.593	113		-	-	75-125	-	20
Nickel, Dissolved	0.00829	0.5	0.5231	103		-	-	75-125	-	20
Potassium, Dissolved	10.7	10	22.4	117		-	-	75-125	-	20
Selenium, Dissolved	ND	0.12	0.125	104		-	-	75-125	-	20
Silver, Dissolved	ND	0.05	0.05128	102		-	-	75-125	-	20
Sodium, Dissolved	54.8	10	63.4	86		-	-	75-125	-	20
Thallium, Dissolved	0.00042J	0.12	0.1352	113		-	-	75-125	-	20
Vanadium, Dissolved	ND	0.5	0.5204	104		-	-	75-125	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101

Lab Number: L2155680
Report Date: 10/28/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1560979-3 QC Sample: L2155680-01 Client ID: GW001									
Zinc, Dissolved	ND	0.5	0.5080	102	-	-	75-125	-	20
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1560982-3 QC Sample: L2155682-02 Client ID: MS Sample									
Mercury, Dissolved	ND	0.005	0.00463	93	-	-	75-125	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101

Lab Number: L2155680
Report Date: 10/28/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1560979-4 QC Sample: L2155680-01 Client ID: GW001						
Aluminum, Dissolved	0.00430J	0.00533J	mg/l	NC		20
Antimony, Dissolved	ND	0.00159J	mg/l	NC		20
Arsenic, Dissolved	0.00020J	0.00049J	mg/l	NC		20
Barium, Dissolved	0.08338	0.08391	mg/l	1		20
Beryllium, Dissolved	ND	ND	mg/l	NC		20
Cadmium, Dissolved	ND	0.00007J	mg/l	NC		20
Calcium, Dissolved	89.0	88.3	mg/l	1		20
Chromium, Dissolved	0.00024J	0.00025J	mg/l	NC		20
Cobalt, Dissolved	0.00222	0.00221	mg/l	0		20
Copper, Dissolved	0.00345	0.00345	mg/l	0		20
Iron, Dissolved	0.0271J	0.0341J	mg/l	NC		20
Lead, Dissolved	ND	ND	mg/l	NC		20
Magnesium, Dissolved	10.3	10.3	mg/l	0		20
Manganese, Dissolved	1.030	1.014	mg/l	2		20
Nickel, Dissolved	0.00829	0.00820	mg/l	1		20
Potassium, Dissolved	10.7	10.7	mg/l	0		20
Selenium, Dissolved	ND	ND	mg/l	NC		20
Silver, Dissolved	ND	ND	mg/l	NC		20
Sodium, Dissolved	54.8	54.5	mg/l	1		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1560979-4 QC Sample: L2155680-01 Client ID: GW001					
Thallium, Dissolved	0.00042J	0.00095J	mg/l	NC	20
Vanadium, Dissolved	ND	ND	mg/l	NC	20
Zinc, Dissolved	ND	ND	mg/l	NC	20
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1560982-4 QC Sample: L2155682-02 Client ID: DUP Sample					
Mercury, Dissolved	ND	ND	mg/l	NC	20

INORGANICS
&
MISCELLANEOUS

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-01
Client ID: GW001
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY
Sample Depth:
Matrix: Water
Date Collected: 10/12/21 10:50
Date Received: 10/12/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	0.002	J	mg/l	0.005	0.001	1	10/22/21 15:00	10/25/21 14:52	1,9010C/9012B	JO
Chromium, Hexavalent	ND		mg/l	0.010	0.003	1	10/13/21 07:20	10/13/21 07:47	1,7196A	KP

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-02
Client ID: GW002
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY
Sample Depth:
Matrix: Water
Date Collected: 10/12/21 12:25
Date Received: 10/12/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	0.058		mg/l	0.005	0.001	1	10/22/21 15:00	10/25/21 14:53	1,9010C/9012B	JO
Chromium, Hexavalent	ND		mg/l	0.010	0.003	1	10/13/21 07:20	10/13/21 07:48	1,7196A	KP

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101
Lab Number: L2155680
Report Date: 10/28/21

SAMPLE RESULTS

Lab ID: L2155680-03
Client ID: GW003
Sample Location: 4285 MIDDLE COUNTRY RD, CALVERTON, NY
Sample Depth:
Matrix: Water
Date Collected: 10/12/21 14:00
Date Received: 10/12/21
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	0.024		mg/l	0.005	0.001	1	10/22/21 15:00	10/25/21 14:54	1,9010C/9012B	JO
Chromium, Hexavalent	ND		mg/l	0.010	0.003	1	10/13/21 07:20	10/13/21 07:49	1,7196A	KP

Project Name: HK VENTURES-CALVERTON **Lab Number:** L2155680

Project Number: HKV2101 **Report Date:** 10/28/21

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1557931-1										
Chromium, Hexavalent	ND		mg/l	0.010	0.003	1	10/13/21 07:20	10/13/21 07:46	1,7196A	KP
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG1562071-1										
Cyanide, Total	0.002	J	mg/l	0.005	0.001	1	10/22/21 15:00	10/25/21 14:40	1,9010C/9012B	JO

Lab Control Sample Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1557931-2								
Chromium, Hexavalent	108		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG1562071-2 WG1562071-3								
Cyanide, Total	102		108		85-115	6		20

Matrix Spike Analysis
Batch Quality Control

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101

Lab Number: L2155680
Report Date: 10/28/21

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1557931-4 QC Sample: L2155680-02 Client ID: GW002												
Chromium, Hexavalent	ND	0.1	0.108	108		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1562071-4 WG1562071-5 QC Sample: L2155682-02 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.222	111		0.223	112		80-120	0		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: HK VENTURES-CALVERTON

Project Number: HKV2101

Lab Number: L2155680

Report Date: 10/28/21

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG1557931-3 QC Sample: L2155680-01 Client ID: GW001						
Chromium, Hexavalent	ND	ND	mg/l	NC		20

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101

Lab Number: L2155680
Report Date: 10/28/21

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2155680-01A	Vial HCl preserved	A	NA		4.7	Y	Absent		NYTCL-8260(14)
L2155680-01B	Vial HCl preserved	A	NA		4.7	Y	Absent		NYTCL-8260(14)
L2155680-01C	Vial HCl preserved	A	NA		4.7	Y	Absent		NYTCL-8260(14)
L2155680-01D	Amber 120ml unpreserved	A	7	7	4.7	Y	Absent		NYTCL-8082-LVI(365)
L2155680-01E	Amber 120ml unpreserved	A	7	7	4.7	Y	Absent		NYTCL-8082-LVI(365)
L2155680-01F	Amber 120ml unpreserved	A	7	7	4.7	Y	Absent		NYTCL-8081(7)
L2155680-01G	Amber 120ml unpreserved	A	7	7	4.7	Y	Absent		NYTCL-8081(7)
L2155680-01H	Plastic 250ml unpreserved	A	7	7	4.7	Y	Absent		HEXCR-7196(1)
L2155680-01I	Plastic 250ml unpreserved	A	7	7	4.7	Y	Absent		-
L2155680-01J	Plastic 250ml unpreserved	C	NA		3.2	Y	Absent		A2-NY-537-ISOTOPE(14)
L2155680-01K	Plastic 250ml unpreserved	C	NA		3.2	Y	Absent		A2-NY-537-ISOTOPE(14)
L2155680-01L	Plastic 250ml HNO3 preserved	A	<2	<2	4.7	Y	Absent		SE-6020T(180),TL-6020T(180),BA-6020T(180),FE-6020T(180),CR-6020T(180),CA-6020T(180),NI-6020T(180),K-6020T(180),CU-6020T(180),ZN-6020T(180),NA-6020T(180),PB-6020T(180),MN-6020T(180),BE-6020T(180),AS-6020T(180),V-6020T(180),SB-6020T(180),HG-T(28),AG-6020T(180),AL-6020T(180),CD-6020T(180),MG-6020T(180),CO-6020T(180)
L2155680-01M	Amber 250ml unpreserved	A	7	7	4.7	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L2155680-01N	Amber 250ml unpreserved	A	7	7	4.7	Y	Absent		HERB-APA(7)
L2155680-01O	Amber 250ml unpreserved	A	7	7	4.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2155680-01W	Plastic 250ml NaOH preserved split	A	7	>12	4.7	N	Absent		TCN-9010(14)

*Values in parentheses indicate holding time in days

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101

Lab Number: L2155680
Report Date: 10/28/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2155680-01X	Plastic 120ml HNO3 preserved Filtrates	A	NA		4.7	Y	Absent		K-6020S(180),CU-6020S(180),SE-6020S(180),V-6020S(180),MN-6020S(180),MG-6020S(180),BE-6020S(180),CO-6020S(180),ZN-6020S(180),CA-6020S(180),CR-6020S(180),FE-6020S(180),NI-6020S(180),NA-6020S(180),TL-6020S(180),PB-6020S(180),BA-6020S(180),AG-6020S(180),SB-6020S(180),AS-6020S(180),CD-6020S(180),AL-6020S(180),HG-S(28)
L2155680-02A	Vial HCl preserved	A	NA		4.7	Y	Absent		NYTCL-8260(14)
L2155680-02B	Vial HCl preserved	A	NA		4.7	Y	Absent		NYTCL-8260(14)
L2155680-02C	Vial HCl preserved	A	NA		4.7	Y	Absent		NYTCL-8260(14)
L2155680-02D	Amber 120ml unpreserved	A	7	7	4.7	Y	Absent		NYTCL-8082-LVI(365)
L2155680-02E	Amber 120ml unpreserved	A	7	7	4.7	Y	Absent		NYTCL-8082-LVI(365)
L2155680-02F	Amber 120ml unpreserved	A	7	7	4.7	Y	Absent		NYTCL-8081(7)
L2155680-02G	Amber 120ml unpreserved	A	7	7	4.7	Y	Absent		NYTCL-8081(7)
L2155680-02H	Plastic 250ml unpreserved	A	7	7	4.7	Y	Absent		HEXCR-7196(1)
L2155680-02I	Plastic 250ml unpreserved	A	7	7	4.7	Y	Absent		-
L2155680-02J	Plastic 250ml unpreserved	C	NA		3.2	Y	Absent		A2-NY-537-ISOTOPE(14)
L2155680-02K	Plastic 250ml unpreserved	C	NA		3.2	Y	Absent		A2-NY-537-ISOTOPE(14)
L2155680-02L	Plastic 250ml HNO3 preserved	A	<2	<2	4.7	Y	Absent		BA-6020T(180),TL-6020T(180),FE-6020T(180),SE-6020T(180),CA-6020T(180),CR-6020T(180),NI-6020T(180),K-6020T(180),ZN-6020T(180),NA-6020T(180),CU-6020T(180),PB-6020T(180),MN-6020T(180),BE-6020T(180),AS-6020T(180),V-6020T(180),SB-6020T(180),HG-T(28),MG-6020T(180),AG-6020T(180),AL-6020T(180),CD-6020T(180),CO-6020T(180)
L2155680-02M	Plastic 250ml NaOH preserved	A	>12	>12	4.7	Y	Absent		TCN-9010(14)
L2155680-02N	Amber 250ml unpreserved	A	7	7	4.7	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L2155680-02O	Amber 250ml unpreserved	A	7	7	4.7	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L2155680-02P	Amber 250ml unpreserved	A	7	7	4.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2155680-02Q	Amber 250ml unpreserved	A	7	7	4.7	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2155680-02R	Amber 1000ml unpreserved	A	7	7	4.7	Y	Absent		HERB-APA(7)

*Values in parentheses indicate holding time in days

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101

Lab Number: L2155680
Report Date: 10/28/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2155680-02X	Plastic 120ml HNO3 preserved Filtrates	A	NA		4.7	Y	Absent		K-6020S(180),V-6020S(180),SE-6020S(180),CU-6020S(180),MN-6020S(180),CO-6020S(180),MG-6020S(180),BE-6020S(180),ZN-6020S(180),CA-6020S(180),FE-6020S(180),CR-6020S(180),BA-6020S(180),NA-6020S(180),PB-6020S(180),TL-6020S(180),NI-6020S(180),AG-6020S(180),AS-6020S(180),SB-6020S(180),HG-S(28),AL-6020S(180),CD-6020S(180)
L2155680-03A	Vial HCl preserved	B	NA		4.9	Y	Absent		NYTCL-8260(14)
L2155680-03B	Vial HCl preserved	B	NA		4.9	Y	Absent		NYTCL-8260(14)
L2155680-03C	Vial HCl preserved	B	NA		4.9	Y	Absent		NYTCL-8260(14)
L2155680-03D	Amber 120ml unpreserved	B	7	7	4.9	Y	Absent		NYTCL-8082-LVI(365)
L2155680-03E	Amber 120ml unpreserved	B	7	7	4.9	Y	Absent		NYTCL-8082-LVI(365)
L2155680-03F	Amber 120ml unpreserved	B	7	7	4.9	Y	Absent		NYTCL-8081(7)
L2155680-03G	Amber 120ml unpreserved	B	7	7	4.9	Y	Absent		NYTCL-8081(7)
L2155680-03H	Plastic 250ml unpreserved	B	7	7	4.9	Y	Absent		HEXCR-7196(1)
L2155680-03I	Plastic 250ml unpreserved	B	7	7	4.9	Y	Absent		-
L2155680-03J	Plastic 250ml unpreserved	C	NA		3.2	Y	Absent		A2-NY-537-ISOTOPE(14)
L2155680-03K	Plastic 250ml unpreserved	C	NA		3.2	Y	Absent		A2-NY-537-ISOTOPE(14)
L2155680-03L	Plastic 250ml HNO3 preserved	B	<2	<2	4.9	Y	Absent		FE-6020T(180),SE-6020T(180),BA-6020T(180),TL-6020T(180),K-6020T(180),CR-6020T(180),NI-6020T(180),CA-6020T(180),CU-6020T(180),NA-6020T(180),ZN-6020T(180),PB-6020T(180),BE-6020T(180),MN-6020T(180),V-6020T(180),AS-6020T(180),SB-6020T(180),MG-6020T(180),HG-T(28),CD-6020T(180),AG-6020T(180),AL-6020T(180),CO-6020T(180)
L2155680-03M	Plastic 250ml NaOH preserved	B	>12	>12	4.9	Y	Absent		TCN-9010(14)
L2155680-03N	Amber 250ml unpreserved	B	7	7	4.9	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L2155680-03O	Amber 250ml unpreserved	B	7	7	4.9	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L2155680-03P	Amber 250ml unpreserved	B	7	7	4.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2155680-03Q	Amber 250ml unpreserved	B	7	7	4.9	Y	Absent		A2-1,4-DIOXANE-SIM(7)
L2155680-03R	Amber 1000ml unpreserved	B	7	7	4.9	Y	Absent		HERB-APA(7)
L2155680-03S	Amber 1000ml unpreserved	B	7	7	4.9	Y	Absent		HERB-APA(7)

*Values in parentheses indicate holding time in days

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101

Lab Number: L2155680
Report Date: 10/28/21

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2155680-03X	Plastic 120ml HNO3 preserved Filtrates	B	NA		4.9	Y	Absent		V-6020S(180),K-6020S(180),SE-6020S(180),CU-6020S(180),MN-6020S(180),MG-6020S(180),BE-6020S(180),CO-6020S(180),ZN-6020S(180),CR-6020S(180),FE-6020S(180),CA-6020S(180),PB-6020S(180),NI-6020S(180),BA-6020S(180),TL-6020S(180),NA-6020S(180),AS-6020S(180),SB-6020S(180),AG-6020S(180),AL-6020S(180),HG-S(28),CD-6020S(180)
L2155680-04A	Plastic 250ml unpreserved	C	NA		3.2	Y	Absent		A2-NY-537-ISOTOPE(14)

*Values in parentheses indicate holding time in days

Project Name: HK VENTURES-CALVERTON
Project Number: HKV2101

Lab Number: L2155680
Report Date: 10/28/21

PFAS PARAMETER SUMMARY

Parameter	Acronym	CAS Number
PERFLUOROALKYL CARBOXYLIC ACIDS (PFCAs)		
Perfluorooctadecanoic Acid	PFODA	16517-11-6
Perfluorohexadecanoic Acid	PFHxDA	67905-19-5
Perfluorotetradecanoic Acid	PFTA	376-06-7
Perfluorotridecanoic Acid	PFTrDA	72629-94-8
Perfluorododecanoic Acid	PFDoA	307-55-1
Perfluoroundecanoic Acid	PFUnA	2058-94-8
Perfluorodecanoic Acid	PFDA	335-76-2
Perfluorononanoic Acid	PFNA	375-95-1
Perfluorooctanoic Acid	PFOA	335-67-1
Perfluoroheptanoic Acid	PFHpA	375-85-9
Perfluorohexanoic Acid	PFHxA	307-24-4
Perfluoropentanoic Acid	PFPeA	2706-90-3
Perfluorobutanoic Acid	PFBA	375-22-4
PERFLUOROALKYL SULFONIC ACIDS (PFSAs)		
Perfluorododecanesulfonic Acid	PFDoDS	79780-39-5
Perfluorodecanesulfonic Acid	PFDS	335-77-3
Perfluorononanesulfonic Acid	PFNS	68259-12-1
Perfluorooctanesulfonic Acid	PFOS	1763-23-1
Perfluoroheptanesulfonic Acid	PFHpS	375-92-8
Perfluorohexanesulfonic Acid	PFHxS	355-46-4
Perfluoropentanesulfonic Acid	PFPeS	2706-91-4
Perfluorobutanesulfonic Acid	PFBS	375-73-5
FLUOROTELOMERS		
1H,1H,2H,2H-Perfluorododecanesulfonic Acid	10:2FTS	120226-60-0
1H,1H,2H,2H-Perfluorodecanesulfonic Acid	8:2FTS	39108-34-4
1H,1H,2H,2H-Perfluorooctanesulfonic Acid	6:2FTS	27619-97-2
1H,1H,2H,2H-Perfluorohexanesulfonic Acid	4:2FTS	757124-72-4
PERFLUOROALKANE SULFONAMIDES (FASAs)		
Perfluorooctanesulfonamide	FOSA	754-91-6
N-Ethyl Perfluorooctane Sulfonamide	NEtFOSA	4151-50-2
N-Methyl Perfluorooctane Sulfonamide	NMeFOSA	31506-32-8
PERFLUOROALKANE SULFONYL SUBSTANCES		
N-Ethyl Perfluorooctanesulfonamido Ethanol	NEtFOSE	1691-99-2
N-Methyl Perfluorooctanesulfonamido Ethanol	NMeFOSE	24448-09-7
N-Ethyl Perfluorooctanesulfonamidoacetic Acid	NEtFOSAA	2991-50-6
N-Methyl Perfluorooctanesulfonamidoacetic Acid	NMeFOSAA	2355-31-9
PER- and POLYFLUOROALKYL ETHER CARBOXYLIC ACIDS		
2,3,3,3-Tetrafluoro-2-[1,1,2,2,3,3,3-Heptafluoropropoxy]-Propanoic Acid	HFPO-DA	13252-13-6
4,8-Dioxa-3h-Perfluorononanoic Acid	ADONA	919005-14-4
CHLORO-PERFLUOROALKYL SULFONIC ACIDS		
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid	11Cl-PF3OUdS	763051-92-9
9-Chlorohexadecafluoro-3-Oxanone-1-Sulfonic Acid	9Cl-PF3ONS	756426-58-1
PERFLUOROETHER SULFONIC ACIDS (PFESAs)		
Perfluoro(2-Ethoxyethane)Sulfonic Acid	PFEESA	113507-82-7
PERFLUOROETHER/POLYETHER CARBOXYLIC ACIDS (PFPCAs)		
Perfluoro-3-Methoxypropanoic Acid	PFMPA	377-73-1
Perfluoro-4-Methoxybutanoic Acid	PFMBA	863090-89-5
Nonafluoro-3,6-Dioxaheptanoic Acid	NFDHA	151772-58-6

Project Name:	HK VENTURES-CALVERTON	**Lab Number:**	L2155680
Project Number:	HKV2101	**Report Date:**	10/28/21

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

NR - No Results: Term is utilized when 'No Target Compounds Requested' is reported for the analysis of Volatile or Semivolatile Organic TIC only requests.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HK VENTURES-CALVERTON	**Lab Number:**	L2155680
Project Number:	HKV2101	**Report Date:**	10/28/21

Footnotes

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. In addition, the 'PFAS, Total (6)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA, PFDA and PFOS. For MassDEP DW compliance analysis only, the 'PFAS, Total (6)' result is defined as the summation of results at or above the RL. Note: If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

F - The ratio of quantifier ion response to qualifier ion response falls outside of the laboratory criteria. Results are considered to be an estimated maximum concentration.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

Report Format: DU Report with 'J' Qualifiers

Project Name:	HK VENTURES-CALVERTON	**Lab Number:**	L2155680
Project Number:	HKV2101	**Report Date:**	10/28/21

Data Qualifiers

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

V - The surrogate associated with this target analyte has a recovery outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Z - The batch matrix spike and/or duplicate associated with this target analyte has a recovery/RPD outside the QC acceptance limits. (Applicable to MassDEP DW Compliance samples only.)

Project Name:	HK VENTURES-CALVERTON	**Lab Number:**	L2155680
Project Number:	HKV2101	**Report Date:**	10/28/21

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

134 Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) using Isotope Dilution. Alpha SOP 23528.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625/625.1: alpha-Terpineol
EPA 8260C/8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D/8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603, SM9222D.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522, EPA 537.1.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 10/13/21

ALPHA Job #: L2155680

Client Information
Client: PWGC
Address: 630 Johnson Ave
Bohemia, NY 11716
Phone: 631-589-6353
Fax:
Email: thomasmg@pwgissteam.com

Project Information
Project Name: HK Ventures - Calverton
Project Location: 4295 Middle Country Rd, Calverton, NY
Project #: HKV2101
(Use Project name as Project #) ☐
Project Manager: Tom Melia
ALPHAQuote #:

Turn-Around Time
Standard ☒ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☒ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information
☐ Same as Client Info
PO #

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs (8260)	SVOCs (8270)	PCBs (Rent (608) Aroclors)	Herbicides (8151)	TAL Metals (6010/7471)	Hex. Chromium	Total Cyanide	PFAS, USEPA - 537 modified	1,4-Dioxane, 8270-SIM	Sample Specific Comments	Total Bottle
55680-01	GW001	10/12/21	1050	GW	MPP	X	X	X	X	X	X	X	X	X		
02	GW002		1225			X	X	X	X	X	X	X	X	X		
03	GW003		1400			X	X	X	X	X	X	X	X	X		
04	Field Blank		1435	W									X			

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
Michael Pecoraro	10/13/21 17:45		
	10/12/21 21:30		10/12/21 20:50
			10/13/21 0025
	10/13/21 0320		10/13/21 03:20

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONSTITUTIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

TRAFFIC IMPACT STUDY

PROPOSED INDUSTRIAL PARK

4285 Middle Country Road
(NYS Route 25)
Hamlet of Calverton, Town of
Riverhead, Suffolk County,
New York

Prepared For:
HK Ventures, LLC

July 8, 2020
Revised: April 19, 2021
Revised: February 3, 2022
SE&D Job No. NYC-200069

Andrew J. Villari, PE
Project Manager
NY P.E. License #100729

Matthew J. Seckler PE, PP, PTOE
Principal
NY P.E. License #092725

STONEFIELD

584 Broadway, Suite 310, New York, NY 10012

TABLE OF CONTENTS

EXECUTIVE SUMMARY **1**

INTRODUCTION **3**

METHODOLOGY **3**

2020 EXISTING CONDITION **4**

2020 Existing Roadway Conditions 4
2020 Existing Transit Service 6
2020 Existing As-Counted Traffic Volumes 6
2020 Existing Adjusted Traffic Volumes 8
2020 Existing LOS/Capacity Analysis 10
Motor Vehicle Collision Analysis 11

2023 PHASE 1 NO-BUILD CONDITION **14**

Background Growth 14
Other Planned Development Projects 14
2023 Phase 1 No-Build Traffic Volumes 15
2023 Phase 1 No-Build LOS/Capacity Analysis 15

2023 PHASE 1 BUILD CONDITION **16**

Site Access Conditions 16
Trip Generation 19
Trip Assignment/Distribution 20
2023 Phase 1 Build Traffic Volumes 21
2023 Phase 1A Build LOS/Capacity Analysis 21
2023 Phase 1B Build LOS/Capacity Analysis 22
2023 Phase 1C Build LOS/Capacity Analysis 22

2025 PHASE 2 NO-BUILD CONDITION **23**

Background Growth 23
Other Planned Development Projects 23
2025 Phase 2 No-Build Traffic Volumes 23
2025 Phase 2A No-Build LOS/Capacity Analysis 23
2025 Phase 2B No-Build LOS/Capacity Analysis 24
2025 Phase 2C No-Build LOS/Capacity Analysis 25

2025 PHASE 2 BUILD CONDITION **25**

Phase 2 Trip Generation 25
Trip Assignment/Distribution 26
2025 Phase 2 Build Traffic Volumes 26
2025 Phase 2A Build LOS/Capacity Analysis 26
2025 Phase 2B Build LOS/Capacity Analysis 27
2025 Phase 2C Build LOS/Capacity Analysis 28
Phase 2 Build Mitigation 29

2025 MAXIMUM BUILD-OUT SCENARIO 29
Trip Generation 29
Trip Assignment/Distribution 31
2025 Maximum Build-Out Traffic Volumes 31
Phase 2D Build LOS/Capacity Analysis 32
Phase 2E Build LOS/Capacity Analysis 32
Phase 2F Build LOS/Capacity Analysis 33

ROUNDABOUT ANALYSIS 34
Trip Assignment/Distribution And Traffic Volumes 34
Phase 2G Build LOS/Capacity Analysis 35
Comparative Level of Service (Delay) Table 35

PROJECTED CONSTRUCTION TRIP GENERATION 36

SITE CIRCULATION/PARKING SUPPLY 36

CONCLUSIONS 38

TECHNICAL APPENDIX

LEVEL OF SERVICE/AVERAGE CONTROL DELAY CRITERIA

COMPARATIVE LEVEL OF SERVICE (DELAY) TABLES

TURNING MOVEMENT COUNT DATA

Unsignalized intersection of Middle Country Road and Fresh Pond Avenue

Signalized intersection of Middle Country Road and Edwards Avenue

Signalized intersection of Middle Country Road and Burman Boulevard

Unsignalized intersection of Edwards Avenue and the Long Island Expressway eastbound exit-ramp

AUTOMATIC TRAFFIC RECORDER DATA

NYS Route 25 – Stonefield Counts

NYS Route 25 – June 2016 NYSDOT Counts

NYS Route 25 – December 2018 NYSDOT Counts

NYSDOT ADJUSTMENT FACTORS FOR TRAFFIC COUNT PROCESSING 2017

MOTOR VEHICLE COLLISION SUMMARY TABLES

RAW MOTOR VEHICLE COLLISION DATA

NYS ROUTE 25 ACCESS PLAN VIDEO TELE-CONFERENCE MEETING MINUTES

CALVERTON INDUSTRIES, LLC. LETTER OF DENIAL OF CROSS-ACCESS

TRAFFIC SIGNAL WARRANT ANALYSIS

FIGURES

Figure 1 – Site Location Map

Figure 2 – October 2020 Existing As-Counted Traffic Volumes

Figure 3 – December 2020 Existing As-Counted Traffic Volumes

Figure 4 – Existing Adjusted Traffic Volumes

Figure 5 – 2023 Base Traffic Volumes
Figure 6 – Other Planned Projects Future Traffic Volumes
Figure 7 – 2023 Phase 1 No-Build Traffic Volumes
Figure 8 – Truck Routing for Condition A
Figure 9 – Passenger Vehicle Routing for Condition A
Figure 10 – Phase 1A Site-Generated Truck Volumes
Figure 11 – Phase 1A Site-Generated Passenger Vehicle Volumes
Figure 12 – Phase 1A Total Site-Generated Traffic Volumes
Figure 13 – 2023 Phase 1A Build Traffic Volumes
Figure 14 – Truck Routing for Condition B
Figure 15 – Passenger Vehicle Routing for Condition B
Figure 16 – Phase 1B Site-Generated Truck Volumes
Figure 17 – Phase 1B Site-Generated Passenger Vehicle Volumes
Figure 18 – Phase 1B Total Site-Generated Traffic Volumes
Figure 19 – 2023 Phase 1B Build Traffic Volumes
Figure 20 – Truck Routing for Condition C
Figure 21 – Passenger Vehicle Routing for Condition C
Figure 22 – Phase 1C Site-Generated Truck Volumes
Figure 23 – Phase 1C Site-Generated Passenger Vehicle Volumes
Figure 24 – Phase 1C Total Site-Generated Traffic Volumes
Figure 25 – 2023 Phase 1C Build Traffic Volumes
Figure 26 – 2025 Phase 2A No-Build Traffic Volumes
Figure 27 – 2025 Phase 2B No-Build Traffic Volumes
Figure 28 – 2025 Phase 2C No-Build Traffic Volumes
Figure 29 – Phase 2A Site-Generated Truck Volumes
Figure 30 – Phase 2A Site-Generated Passenger Vehicle Volumes
Figure 31 – Phase 2A Total Site-Generated Traffic Volumes
Figure 32 – 2025 Phase 2A Build Traffic Volumes
Figure 33 – Phase 2B Site-Generated Truck Volumes
Figure 34 – Phase 2B Site-Generated Passenger Vehicle Volumes
Figure 35 – Phase 2B Total Site-Generated Traffic Volumes
Figure 36 – 2025 Phase 2B Build Traffic Volumes
Figure 37 – Phase 2C Site-Generated Truck Volumes
Figure 38 – Phase 2C Site-Generated Passenger Vehicle Volumes
Figure 39 – Phase 2C Total Site-Generated Traffic Volumes

Figure 40 – 2025 Phase 2C Build Traffic Volumes
Figure 41 – Phase 2D Site-Generated Truck Volumes
Figure 42 – Phase 2D Site-Generated Passenger Volumes
Figure 43 – Phase 2D Total Site-Generated Traffic Volumes
Figure 44 – 2025 Phase 2D Build Traffic Volumes
Figure 45 – Phase 2E Site-Generated Truck Volumes
Figure 46 – Phase 2E Site-Generated Passenger Volumes
Figure 47 – Phase 2E Total Site-Generated Traffic Volumes
Figure 48 – 2025 Phase 2E Build Traffic Volumes
Figure 49 – Phase 2F Site-Generated Truck Volumes
Figure 50 – Phase 2F Site-Generated Passenger Volumes
Figure 51 – Phase 2F Total Site-Generated Traffic Volumes
Figure 52 – 2025 Phase 2F Build Traffic Volumes
Figure 53 – Truck Routing for Condition G
Figure 54 – Passenger Vehicle Routing for Condition G
Figure 55 – Phase 1G Site-Generated Truck Volumes
Figure 56 – Phase 1G Site-Generated Passenger Volumes
Figure 57 – Phase 1G Total Site-Generated Traffic Volumes
Figure 58 – 2025 Phase 1G Build Traffic Volumes
Figure 59 – Phase 2G Site-Generated Truck Volumes
Figure 60 – Phase 2G Site-Generated Passenger Volumes
Figure 61 – Phase 2G Total Site-Generated Traffic Volumes
Figure 62 – 2025 Phase 2G Build Traffic Volumes

HIGHWAY CAPACITY ANALYSIS DETAIL SHEETS

2020 Existing Traffic Conditions
2023 Phase 1 No-Build Traffic Conditions
2023 Phase 1A Build Traffic Conditions
2023 Phase 1B Build Traffic Conditions
2023 Phase 1C Build Traffic Conditions
2025 Phase 2A No-Build Traffic Conditions
2025 Phase 2B No-Build Traffic Conditions
2025 Phase 2C No-Build Traffic Conditions
2025 Phase 2A Build Traffic Conditions
2025 Phase 2B Build Traffic Conditions

2025 Phase 2C Build Traffic Conditions
2025 Phase 2A Mitigation Build Traffic Conditions
2025 Phase 2B Mitigation Build Traffic Conditions
2025 Phase 2C Mitigation Build Traffic Conditions
Phase 2D Build Traffic Conditions
Phase 2E Build Traffic Conditions
Phase 2F Build Traffic Conditions
Phase 2G Build Traffic Conditions

EXECUTIVE SUMMARY

The revised Traffic Impact Study was prepared to update ~~the July 8, 2020 issuance of the Traffic Impact Study and to address the Transportation section of the Final Scope for Draft Environmental Impact Statement (DEIS) for HK Ventures, LLC which was adopted by the Town of Riverhead Planning Board on November 19, 2020~~ the April 19, 2021 issuance of the Traffic Impact Study and to address the Resolution Setting Forth Requirements for Inclusion in a Final Environmental Impact Statement (FEIS) for the Site Plan Application of HK Ventures, which was adopted by the Town of Riverhead Planning Board on August 19, 2021. This issuance addresses comments contained within the review letter prepared by L.K. McLean Associates, P.C., dated May 25, 2021. The following is a summary of the revisions and the analyses contained herein:

1. The application proposes a 412,629-square-foot industrial park which would be constructed in two (2) build phases, defined as Phase 1 Build and Phase 2 Build within the report.

2. The 412,629 square feet includes a 1,500-square-foot commissary as an ancillary offering intended to serve employees of the various tenants. As the commissary is not expected to generate unique traffic or parking, 411,129 square feet has been used for traffic and parking analyses.

3. ~~In order to evaluate existing traffic conditions and potential impacts on a broader study roadway network as identified in the DEIS Final Scope, additional manual turning movement counts and automatic traffic recorder counts were collected in December 2020 at the locations identified within the DEIS Final Scope.~~ In order to assess the calibration measures applied to represent the existing traffic conditions on the study roadway network, additional manual turning movement counts were collected in October 2021 at the intersection of Middle Country Road and Fresh Pond Avenue, and additional historical traffic volume data provided by NYSDOT was reviewed to provide a thorough evaluation of the analysis methods applied to the analysis contained herein.

4. Per the comments contained within the aforementioned review letter prepared by L.K. McLean Associates, a further detailed summary and discussion of the motor vehicle collisions recorded at each intersection and roadway segment within the study roadway network during the study time period has been included within the report, inclusive of the time of day, week, and year of each incident, the weather, pavement, and light conditions, accident severity, accident type, and contributing factors.

5. Pursuant to discussion with NYSDOT and the Town, three (3) access plans have been analyzed which account for off-site improvements to Middle Country Road such as a new traffic signal and roadway widening. ~~Per the subject discussion, a roundabout configuration at the subject intersection has been contemplated within the report but has not been analyzed from a highway capacity standpoint as a~~

~~fourth access alternative. Per the date of this report, a final access configuration along Middle Country Road which is under the sole jurisdiction of the NYSDOT has not been confirmed~~. Per the comments contained within the aforementioned review letter prepared by L.K. McLean Associates, a roundabout configuration at the subject intersection has been analyzed from a highway capacity standpoint as a fourth access alternative. Per the date of this report, a traffic signal has been warranted by NYSDOT at the intersection of Middle Country Road and the proposed site driveway, which is analyzed herein as Access Condition B.

6. The analysis findings, which have been based on industry-standard guidelines, indicate that Phase 1 of the proposed development would not have a significant impact on the traffic operations of the adjacent roadway network.

7. Similarly, Phase 2 of the proposed development is not expected to have a significant impact on the traffic operations of the adjacent roadway network. A minor signal timing modification to the nearby signalized intersection of Middle Country Road and Edwards Avenue may be appropriate based on the forecasted ratio of turning movements at the intersection; however, it is important to note that per consultations with NYSDOT, the subject intersection will undergo roadway improvements which may proactively mitigate any increases in delay which are calculated within the analysis contained.

8. The analysis findings, which have been based on industry-standard guidelines, indicate that a roundabout access at the intersection of Middle Country Road and Fresh Pond Avenue would operate adequately under the Phase 2 Build Condition of the proposed development; however, per consultations with the NYSDOT, which maintains jurisdiction of Middle Country Road, a roundabout intersection would not likely be feasible at the subject location due to the large area of land donations required for construction and the existing characteristics of the corridor.

INTRODUCTION

This Traffic Impact Study was prepared to investigate the potential impacts of the proposed industrial park on the adjacent roadway network. This study has been prepared to address the Transportation section of the Final Scope for Draft Environmental Impact Statement (DEIS) for HK Ventures, LLC which was adopted by the Town of Riverhead Planning Board on November 19, 2020. The subject property is located along Middle Country Road in the Hamlet of Calverton, Town of Riverhead, Suffolk County, New York. The site location is shown on appended **Figure 1**.

The subject property is designated as District 600, Section 116, Block 1, Lot 2 as depicted on the Suffolk County Tax Map. The site has approximately 530 feet of frontage along Middle Country Road (NYS Route 25). The existing site is undeveloped. Under the proposed development program, a 411,129-square-foot multi-building industrial park will be constructed in two (2) phases. As part of the analysis contained herein, three (3) access plans have been analyzed.

METHODOLOGY

Stonefield Engineering & Design, LLC has prepared this Traffic Impact Study in accordance with the recommended guidelines and practices outlined by the Institute of Transportation Engineers (ITE) within Transportation Impact Analyses for Site Development. A detailed field investigation was performed to assess the existing conditions of the adjacent roadway network. A data analysis effort was completed to identify the existing traffic volumes at the study intersections to serve as a base for the traffic analyses. Capacity analysis, a procedure used to estimate the traffic-carrying ability of roadway facilities over a range of defined operating conditions, was performed using the Highway Capacity Manual, 6th Edition (HCM), Synchro 10, and Synchro 11 Software for all study conditions to assess the roadway operations.

For an unsignalized intersection, Level of Service (LOS) A indicates operations with delay of less than 10 seconds per vehicle, while LOS F describes operations with delay in excess of 50 seconds per vehicle. For a signalized intersection, LOS A indicates operations with delay of less than 10 seconds per vehicle, while LOS F describes operations with delay in excess of 80 seconds per vehicle. Technical Appendix contains the Highway Capacity Analysis Detail Sheets for the study intersection analyzed in this assessment. The traffic signal timing utilized within the signalized analysis is based on signal timing directives provided by the New York State Department of Transportation (NYSDOT).

2020 EXISTING CONDITION

2020 EXISTING ROADWAY CONDITIONS

The proposed industrial park is located along Middle Country Road in the Hamlet of Calverton, Suffolk County, New York. The subject property is designated as District 600, Section 116, Block 1, Lot 1. The site has approximately 530 feet of frontage along Middle Country Road. Land uses in the area are predominantly residential, commercial, and industrial.

Middle Country Road (NYS Route 25) is classified as a principal arterial roadway with a general east-west orientation, and is under the jurisdiction of the NYSDOT. Along the site frontage, the roadway provides one (1) lane in each direction and has a posted speed limit of 50 mph. Curb and sidewalk are not provided along either side of the roadway, shoulders are generally provided along both sides of the roadway, and on-street parking is not permitted along either side of the roadway. NYS Route 25 provides access between Manhattan and Orient Point for predominantly residential and commercial land uses.

Fresh Pond Avenue is classified as an urban minor arterial roadway with a general north-south orientation, and is under the jurisdiction of the Town of Riverhead. The roadway generally provides one (1) lane in each direction and has a posted speed limit of 45 mph. Curb and sidewalk are not provided along either side of the roadway, shoulders are not provided along either side of the roadway, and on-street parking is not permitted along either side of the roadway. Fresh Pond Avenue provides access between Sound Avenue at its northerly terminus and Middle Country Road at its southerly terminus for predominantly commercial uses along its length.

Edwards Avenue is classified as an urban minor arterial roadway with a general north-south orientation, and is under the jurisdiction of the Town of Riverhead. The roadway generally provides one (1) lane in each direction and has a posted speed limit of 45 mph. Curb and sidewalk are not provided along either side of the roadway, shoulders are generally not provided along either side of the roadway, and on-street parking is not permitted along either side of the roadway. Edwards Avenue provides access between Beach Way and Railroad Avenue to South River Road for predominantly commercial uses along its length.

Burman Boulevard is classified as a local roadway with a general north-south orientation, and is under the jurisdiction of the Town of Riverhead. The roadway generally provides one (1) lane in each direction and has a posted speed limit of 30 mph. Curb, sidewalk, and shoulders are not provided along either side of the roadway, and on-street parking is not regulated along either side of the roadway. Burman Boulevard provides access between Middle Country Road at its northerly terminus and Grumman Boulevard at its southerly terminus for predominantly industrial uses along its length.

At Exit 71, Long Island Expressway (Interstate Route 495) forms an interchange at Edwards Avenue where an eastbound exit ramp and a westbound entrance ramp are provided. The subject interchange is under the jurisdiction of NYSDOT. The eastbound exit ramp of the interchange provides two (2) one-way eastbound lanes and has a posted speed limit of 40 mph. Curb and sidewalk are not provided along either side of the roadway, shoulders are provided along the southerly side of the roadway, and on-street parking is not permitted along either side of the roadway.

Middle Country Road and Edwards Avenue intersect to form a four (4)-leg intersection controlled by a two (2)-phase traffic signal operating on a variable cycle length. The eastbound and westbound approaches of Middle Country Road each provide one (1) shared left-turn/through/right-turn lane. The northbound and southbound approaches of Edwards Avenue each provide one (1) shared left-turn/through/right-turn lane. Crosswalks are not provided across any legs of the intersection and pedestrian signals are provided across the easterly and westerly legs of the intersection. Please note that per consultations with NYSDOT, the intersection of Middle Country Road and Edwards Avenue will undergo roadway improvements inclusive of the addition of exclusive left-turn lanes at all approaches as well as realignment of the northbound and southbound Edwards Avenue approaches to mitigate the current slight offset.

Middle Country Road and Burman Boulevard intersect to form a three (3)-leg T-intersection controlled by a two (2)-phase traffic signal operating on a variable cycle length. The eastbound approach of Middle Country Road provides one (1) exclusive through lane and one (1) exclusive right-turn lane and the westbound approach of Middle Country Road provides one (1) exclusive left-turn lane and one (1) exclusive through lane. The northbound approach of Burman Boulevard provides one (1) exclusive left-turn lane and one (1) exclusive right-turn lane. Crosswalks and pedestrian signals are not provided across any legs of the intersection.

Middle Country Road and Fresh Pond Avenue intersect to form an unsignalized four (4) leg intersection with the southbound approach of Fresh Pond Avenue and the northbound approach of the Tractor Supply Co. driveway operating under stop control. The eastbound and westbound approaches of Middle Country Road each provide one (1) shared left-turn/through/right-turn lane. The southbound approach of Fresh Pond Avenue provides one (1) shared left-turn/through/right-turn lane. The northbound approach of the Tractor Supply Co. driveway provides one (1) shared left-turn/through/right-turn lane. Crosswalks and pedestrian signals are not provided across any legs of the intersection.

Edwards Avenue and the Long Island Expressway eastbound off-ramp intersect to form an unsignalized three (3) leg T-intersection with the eastbound approach of the Long Island Expressway off-ramp operating under stop control. The northbound and southbound approaches of Edwards Avenue each provide two (2) exclusive through lanes. The eastbound approach of the Long Island Expressway off-ramp provides one (1)

exclusive left-turn lane and one (1) exclusive right-turn lane. Crosswalks and pedestrian signals are not provided across any legs of the intersection.

2020 EXISTING TRANSIT SERVICE

The subject site is located within six (6) miles of the Riverhead Long Island Rail Road (LIRR) Station which is serviced by the Ronkonkoma Branch of the LIRR, providing service to New York City and various points of interest throughout Nassau County and Suffolk County. Further, the proposed development is located within two (2) miles from bus stops that service three (3) Suffolk County Transit (SCT) bus routes, with the nearest stop located approximately 300 feet west of the subject site. SCT Bus Routes S62, S58, and 8A provide service to various points of interest throughout Suffolk County. The public transportation modes available in the general vicinity of the subject site are summarized on **Table 1**.

TABLE 1 – PUBLIC TRANSPORTATION OPTIONS

Travel Mode	Proximity to Site	Destination(s)
Riverhead LIRR Station	6.0 miles	New York City Nassau County Suffolk County
Suffolk County Transit Bus Route S62	700 feet	Smith Haven Mall Port Jefferson Station County Center Riverhead LIRR Station
Suffolk County Transit Bus Route S58	300 feet	Huntington Square Mall Smith Haven Mall Riverhead Tanger Outlet Center Riverhead County Center
Suffolk County Transit Bus Route 8A	2.0 miles	County Center Riverhead LIRR Station

2020 EXISTING AS-COUNTED TRAFFIC VOLUMES

Manual turning movement counts were collected during the typical weekday morning, weekday evening, and Saturday midday time periods to evaluate existing traffic conditions and identify the specific hours when traffic activity on the adjacent roadways is at a maximum and could be potentially impacted by the development of the site. Turning movement counts were collected at the following intersections:

- Signalized intersection of Middle Country Road and Edwards Avenue
- Unsignalized intersection of Middle Country Road and Fresh Pond Avenue

Specifically, manual turning movement counts were conducted on the following dates and during the following times which represent the peak seasonal traffic period:

- Wednesday, October 14, 2020, from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 7:00 p.m.
- Saturday, October 17, 2020, from 11:00 a.m. to 2:00 p.m.

The study time periods were chosen as they are representative of the peak periods of both the adjacent roadway network and the proposed development. The traffic volume data was collected and analyzed to identify the design peak hour in accordance with HCM and ITE guidelines. Based on the review of the count data the weekday morning peak hour occurred from 7:30 a.m. to 8:30 a.m.; the weekday evening peak hour occurred from 4:00 p.m. to 5:00 p.m.; and the Saturday midday peak hour occurred from 12:15 p.m. to 1:15 p.m.

Additionally, in order to evaluate existing traffic conditions and potential impacts on a broader study roadway network as identified in the DEIS Final Scope, manual turning movement counts were collected at the following intersections:

- Signalized intersection of Middle Country Road and Edwards Avenue
- Unsignalized intersection of Middle Country Road and Fresh Pond Avenue
- Signalized intersection of Middle Country Road and Burman Boulevard
- Unsignalized intersection of Edwards Avenue and the Long Island Expressway East exit ramp

Specifically, manual turning movement counts were conducted on the following dates and during the following times:

- Saturday, December 12, 2020, from 11:00 a.m. to 2:00 p.m.
- Tuesday, December 15, 2020, from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 7:00 p.m.
- Tuesday, December 22, 2020, from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 7:00 p.m.

The study time periods were chosen as they are representative of the peak periods of both the adjacent roadway network and the proposed development. Please note that due to technical difficulties, the intersection of Middle Country Road and Fresh Pond Avenue was not included within the Tuesday, December 15, 2020 count, and therefore the subject intersection was counted on Tuesday, December 22, 2020; the remaining intersections within the study network were collected on Tuesday, December 15, 2020. The traffic volume data was collected and analyzed to identify the design peak hour in accordance with HCM and ITE guidelines. Based on the review of the count data the weekday morning peak hour occurred from 7:30 a.m. to 8:30 a.m.; the weekday evening peak hour occurred from 4:15 p.m. to 5:15 p.m.; and the Saturday midday peak hour occurred from 12:15 p.m. to 1:15 p.m. The Technical Appendix contains a summary of the turning movement count data. The October 2020 Existing As-Counted and December 2020 Existing As-Counted weekday morning, weekday evening, and Saturday midday peak-hour volumes are summarized on appended **Figures 2** and **3**, respectively.

2020 EXISTING ADJUSTED TRAFFIC VOLUMES

Please note that gathering and travel restrictions as part of Governor Cuomo's Executive Orders associated with the COVID-19 pandemic remain in effect as of the date of this report. Therefore, current roadway operating conditions may not be considered typical.

As such, in addition to turning movement counts, Automatic Traffic Recorder (ATR) data was collected along Middle Country Road approximately 490 feet west of Service Lane on Tuesday, December 15, 2020. The 24-hour collected ATR data was compared to ATR data published by the NYSDOT, which was collected at the same location on Tuesday, December 4, 2018, to evaluate existing traffic conditions and identify the impacts of COVID-19 restrictions on traffic volumes within the study network. The Technical Appendix contains a summary of the 2020 collected ATR count data and the 2018 published NYSDOT ATR count data.

Based on a comparison of the ATR data, traffic volumes along Middle Country Road were approximately 15% lower than the published 2018 NYSDOT traffic volumes during the weekday morning peak hour and approximately 12% greater during the weekday evening peak hour. Therefore, the December 2020 turning movement counts were increased accordingly during the weekday morning peak hour to represent typical traffic volumes along the study network. Turning movement counts collected during the weekday evening peak hour were not adjusted due to the increase in volumes observed from the published 2018 NYSDOT data. It is important to note that historical NYSDOT ATR data was not available for Saturday and therefore this methodology could not be utilized to calibrate the existing as-counted Saturday volumes.

A comparison of the turning movement counts collected at the intersections of Middle Country Road and Fresh Pond Avenue and Middle Country Road and Edwards Avenue on Saturday, October 17, 2020 and Saturday, December 12, 2020 showed that the subject intersections experienced approximately 11% greater traffic volumes during the October count versus the December count. Therefore, the turning movement counts collected at the intersection of Middle Country Road and Burman Boulevard and the intersection of Edwards Avenue and the Long Island Expressway East exit ramp on Saturday, December 12, 2020 were increased accordingly to reflect the more conservative October 2020 count volumes; turning movement counts collected on October 17, 2020 were maintained at the study intersections of Middle Country Road and Fresh Pond Avenue and Middle Country Road and Edwards Avenue.

It is important to note that in addition to the published December 2018 NYSDOT ATR data, published NYSDOT ATR data collected at the same count station in June of 2016, which is typically accepted as the peak month of the year for an urban region based on seasonal adjustment factors contained within the NYSDOT's 'Adjustment Factors for Traffic Count Processing 2017' (appended within this report), was reviewed for comparison purposes. Based on a comparison of the published NYSDOT data from June 2016 and December 2018, the weekday daily traffic volumes along Middle Country Road were generally greater in June 2016;

however, the weekday morning peak hour traffic volumes recorded in December 2018, which were utilized to calibrate the 2020 as-counted weekday morning peak hour traffic volumes, were greater than the peak hour traffic volumes recorded in June 2016. Further, based on a comparison of the published June 2016 NYSDOT data and the 2020 collected ATR data, the as-counted traffic volumes were greater than the published June 2016 traffic volumes during the weekday evening peak hour. Therefore, the 2020 Adjusted Existing traffic volumes utilized within the analyses contained herein are a conservative representation of traffic volumes along the study roadway network and further calibration is not warranted. The Technical Appendix contains a summary of the 2016 published NYSDOT ATR count data. **Tables 2** and **3** summarize the comparison of the weekday morning and weekday evening peak hour traffic volumes recorded in the historical June 2016 NYSDOT ATR count data, the historical December 2018 NYSDOT ATR count data, and the December 2020 ATR count data.

TABLE 2 – ATR VOLUME COMPARISON – WEEKDAY MORNING PEAK HOUR

	June 2016	December 2018	December 2020	Existing Adjusted Volume Utilized in Traffic Impact Analysis
Agency	NYSDOT	NYSDOT	Stonefield	--
Eastbound Volumes	404	414	359	414
Westbound Volumes	209	214	177	214
Total Volumes	**613**	**628**	**536**	**628**

TABLE 3 – ATR VOLUME COMPARISON – WEEKDAY EVENING PEAK HOUR

	June 2016	December 2018	December 2020	Existing Adjusted Volume Utilized in Traffic Impact Analysis
Agency	NYSDOT	NYSDOT	Stonefield	--
Eastbound Volumes	308	285	298	298
Westbound Volumes	441	445	522	522
Total Volumes	**749**	**730**	**820**	**820**

In addition to a comparison of historical NYSDOT ATR data, turning movement counts were collected at the intersection of Middle Country Road and Fresh Pond Avenue on Thursday, October 7, 2021, from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 7:00 p.m. The traffic volume data was collected and analyzed to identify the design peak hour in accordance with HCM and ITE guidelines. Based on the review of the count data the weekday morning peak hour occurred from 7:15 a.m. to 8:15 a.m. and the weekday evening peak hour occurred from 4:30 p.m. to 5:30 p.m. The Technical Appendix contains a summary of the turning movement count data. The October 2021 as-counted volumes were compared to the 2020 Adjusted Existing volumes. Based on a comparison of the data, the 2020 Adjusted Existing traffic volumes are greater than the 2021 existing as-

counted traffic volumes collected at the study intersection. Therefore, the 2020 Adjusted Existing traffic volumes utilized within the analyses contained herein are a conservative representation of traffic volumes along the study roadway network and further calibration is not warranted.

The 2020 Existing Adjusted weekday morning, weekday evening, and Saturday midday peak hour volumes are summarized on appended **Figure 4**.

2020 EXISTING LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was conducted for the 2020 Existing Condition during the weekday morning, weekday evening, and Saturday midday peak hours at the study intersections.

Under the 2020 Existing Condition, the signalized intersection of Middle Country Road and Burman Boulevard is calculated to operate at overall Level of Service A during the weekday morning and Saturday midday peak hours and overall Level of Service B during the weekday evening peak hour. The turning movements at the signalized intersection are calculated to operate at acceptable Level of Service D or better during the study peak hours.

The signalized intersection of Middle Country Road and Edwards Avenue is calculated to operate at overall Level of Service B during the weekday morning, weekday evening, and Saturday midday peak hours. The turning movements at the signalized intersection are calculated to operate at acceptable Level of Service C or better during the study peak hours.

The turning movements at the unsignalized intersection of Middle Country Road and Fresh Pond Avenue are calculated to operate at acceptable Level of Service D or better during the weekday morning peak hour. Please note that the northbound left movement, which operates as part of a private driveway for the Tractor Supply Co., are calculated to operate at Level of Service F during the weekday evening and Saturday midday peak hours. Also note that the southbound approach of Fresh Pond Avenue is calculated to operate at Level of Service F during the weekday evening peak hour and Level of Service E during the Saturday midday peak hour. Turning movements at the intersection are otherwise calculated to operate at Level of Service C or better during the weekday evening and Saturday midday peak hours.

The turning movements at the unsignalized intersection of Edwards Avenue and the Long Island Expressway East exit ramp are calculated to operate at Level of Service A during the weekday morning and weekday evening peak periods and Level of Service B during the Saturday midday peak hour.

A complete summary of the 2020 Existing Condition Level of Service and Delay is provided on appended **Table A1**.

MOTOR VEHICLE COLLISION ANALYSIS

In order to assess the safety of the intersections and roadway segments within the study network, the three (3) most recent years of available motor vehicle collision data were obtained from the NYSDOT. The raw motor vehicle collision data received from the NYSDOT is appended to this report. The study time period spans from February 1, 2017 to January 31, 2020, which is unaffected by COVID-19. Appended **Table B1** provides a summary of the manner and severity of the motor vehicle collisions reported within the study network.

As shown in appended **Table B1**, a total 181 collisions were reported within the study network over the 36-month period; this equates to approximately five (5) collisions per month. Additionally, appended **Tables B2** through **B14** provide a further detailed summary the motor vehicle collisions recorded at each intersection and roadway segment within the study roadway network during the study time period, inclusive of the time of day, week, and year of each incident, the weather, pavement, and light conditions, accident severity, accident type, and contributing factors.

Based on a review of the data, 67 of the 181 collisions within the study network were rear end collisions, which is a common collision type along a signalized corridor and is the most frequent collision type observed along the roadway network. Following rear end collisions, right angle and animal collisions were the most frequent collision types reported along the study network. The most common contributing factors to the reported incidents were driver inattention, failure to yield right-of-way, following too closely, and animal's action, all of which are characteristic of the reported frequent collision types. In an effort to reduce animal-related conditions along the corridor, NYSDOT and the Town of Riverhead may consider roadway lighting improvements to increase driver visibility in the evening hours, as well as measures such as physical barriers and/or sensory controls to help prevent animals from crossing into the roadway. It is important to note that this potential mitigation measure is unrelated to the proposed development as the collision history indicates these collisions are an existing occurrence. The majority of accidents occurred from 10:00 a.m. to 4:00 p.m., during daylight hours with dry, clear conditions, though a portion of the accidents were reported to occur in dark conditions on lighted and unlighted roadways. It is important to note that zero (0) fatalities occurred as a result of the reported motor vehicle collisions in the study network. Accident rates within the study network are not anticipated to be adversely impacted due to the proposed development.

At the intersection of Middle Country Road and Burman Boulevard, a total of three (3) collisions occurred during the study time period which is not frequent enough to discern a repeatable pattern. It is important to note that zero (0) fatalities occurred as a result of the reported motor vehicle collisions at the study intersection. Accident rates at the study intersection are not anticipated to be adversely impacted due to the proposed development.

Along the segment of Middle Country Road between Burman Boulevard and NYS Route 25A, a total of 11 collisions occurred during the study time period. The most common collision type was rear end collisions, which is a common collision type along a signalized corridor. The most common contributing factors to the reported incidents were driver inattention and animal's action. It is important to note that zero (0) fatalities occurred as a result of the reported motor vehicle collisions along the study roadway segment. Accident rates at the study roadway segment are not anticipated to be adversely impacted due to the proposed development.

At the intersection of Middle Country Road and NYS Route 25A, a total of 15 collisions occurred during the study time period. The most common collision type was rear end collisions, which is a common collision type along a signalized corridor. The most common contributing factors to the reported incidents were driver inattention and animal's action. It is important to note that zero (0) fatalities occurred as a result of the reported motor vehicle collisions at the study intersection. Accident rates at the study intersection are not anticipated to be adversely impacted due to the proposed development.

Along the segment of Middle Country Road between NYS Route 25A and Timber Drive, a total of eight (8) collisions occurred during the study time period which is not frequent enough to discern a repeatable pattern. It is important to note that zero (0) fatalities occurred as a result of the reported motor vehicle collisions along the study roadway segment. Accident rates at the study roadway segment are not anticipated to be adversely impacted due to the proposed development.

At the intersection of Middle Country Road and Timber Drive, a total of two (2) collisions occurred during the study time period which is not frequent enough to discern a repeatable pattern. It is important to note that zero (0) fatalities occurred as a result of the reported motor vehicle collisions at the study intersection. Accident rates at the study intersection are not anticipated to be adversely impacted due to the proposed development.

Along the segment of Middle Country Road between Timber Drive and Fresh Pond Avenue, a total of 10 collisions occurred during the study time period. The most common collision types were collisions with fixed objects (4) and rear end collisions (3). The most common contributing factors to the reported incidents were driver inattention and animal's action. It is important to note that zero (0) fatalities occurred as a result of the reported motor vehicle collisions along the study roadway segment. Accident rates at the study roadway segment are not anticipated to be adversely impacted due to the proposed development.

At the intersection of Middle Country Road and Fresh Pond Avenue, a total of three (3) collisions occurred during the study time period which is not frequent enough to discern a repeatable pattern. It is important to note that zero (0) fatalities occurred as a result of the reported motor vehicle collisions at the study

intersection. Accident rates at the study intersection are not anticipated to be adversely impacted due to the proposed development.

Along the segment of Middle Country Road between Fresh Pond Avenue and Edwards Avenue, a total of 31 collisions occurred during the study time period. The most common collision types were rear end collisions (10) and collisions with animals (10). The most common contributing factors to the reported incidents were animal's action and following too closely. It is important to note that zero (0) fatalities occurred as a result of the reported motor vehicle collisions along the study roadway segment. Accident rates at the study roadway segment are not anticipated to be adversely impacted due to the proposed development.

At the intersection of Middle Country Road and Edwards Avenue, a total of 35 collisions occurred during the study time period. The most common collision type was rear end collisions, which is a common collision type along a signalized corridor. The most common contributing factor to the reported incidents was following too closely. It is important to note that zero (0) fatalities occurred as a result of the reported motor vehicle collisions at the study intersection. Accident rates at the study intersection are not anticipated to be adversely impacted due to the proposed development.

Along the segment of Edwards Avenue between Middle Country Road and River Road, a total of 13 collisions occurred during the study time period. The most common collision types were rear end collisions (4) and collisions with animals (3). The most common contributing factors to the reported incidents were following too closely and driver inattention. It is important to note that zero (0) fatalities occurred as a result of the reported motor vehicle collisions along the study roadway segment. Accident rates at the study roadway segment are not anticipated to be adversely impacted due to the proposed development.

At the intersection of Edwards Avenue and River Road, a total of 15 collisions occurred during the study time period. The most common collision types were rear end collisions (4) and right-angle collisions (4). The most common contributing factor to the reported incidents was failure to yield right-of-way. It is important to note that zero (0) fatalities occurred as a result of the reported motor vehicle collisions at the study intersection. Accident rates at the study intersection are not anticipated to be adversely impacted due to the proposed development.

At the intersection of Edwards Avenue and Mill Road, a total of two (2) collisions occurred during the study time period which is not frequent enough to discern a repeatable pattern. It is important to note that zero (0) fatalities occurred as a result of the reported motor vehicle collisions at the study intersection. Accident rates at the study intersection are not anticipated to be adversely impacted due to the proposed development.

At the intersection of Edwards Avenue and the LIE Eastbound Exit Ramp, a total of 33 collisions occurred during the study time period. The most common collision types were right-angle collisions (12), which is a common collision type at an unsignalized intersection, and rear end collisions (10). The most common contributing factors to the reported incidents were failure to yield right-of-way and driver inattention. It is important to note that zero (0) fatalities occurred as a result of the reported motor vehicle collisions at the study intersection. Accident rates at the study intersection are not anticipated to be adversely impacted due to the proposed development.

2023 PHASE I NO-BUILD CONDITION

BACKGROUND GROWTH

The 2020 Existing Condition traffic volume data was grown to a future horizon year of 2023, which is when Phase I of the proposed industrial park is expected to be constructed. Based on data provided by the NYSDOT Office of Technical Services' Traffic Monitoring Section, the roadway network is anticipated to experience an ambient annual growth of approximately 1%. However, the existing traffic volumes at the study intersections were conservatively increased by 1.5% annually for three (3) years to generate the 2023 Base Traffic Volumes. These volumes are summarized on appended **Figure 5**.

OTHER PLANNED DEVELOPMENT PROJECTS

To evaluate the future traffic conditions, it is important to consider the potential site-generated traffic of other projects that could influence the traffic volume at the study intersections. Other planned development projects include those that are either in the entitlement process or have recently been approved for building permits in proximity to the proposed development. Based on consultations with the Town of Riverhead Planning Department, the following developments are contemplated in the site vicinity:

- Enterprise Park at Calverton (EPCAL) – located approximately one (1) mile west of the subject site – 2,000+ acre subdivision to facilitate a mixed-use development which will include a combination of commercial, retail, industrial, government, energy park, recreation, utilities, and residential uses – Under review by Town of Riverhead Planning Department. It is Stonefield's understanding that the Town of Riverhead is in the process of determining a suitable developer for the EPCAL property and per the date of this report, none has been identified. Based on discussions with the Town of Riverhead Planning Department, it is understood that a development application for the EPCAL property has not yet have been submitted to the Town of Riverhead and therefore, it is expected that the subject industrial park application will likely precede EPCAL. Therefore, traffic volumes associated with EPCAL are not included in this analysis.

- Island Water Park – located at 5835 Middle Country Road, approximately three (3) miles west of the subject site – amended proposal to a previously approved plan to construct a mixed-use facility consisting of approximately 9,400 sq. ft. of indoor recreation/entertainment space,

a 3,000 sq. ft. health and fitness center, a 232-seat restaurant/dining facility, as well as the use of an approximately 490,000 sq. ft. lake to be utilized for recreational purposes – Under review by the Town of Riverhead Town Board. Given the use and time of day/day of week when peak traffic would likely be generated, the blanket annual growth rate is assumed to include potential build-out of the subject planned development.

- Tractor Supply Co. – located at 4331 Middle Country Road, westerly adjacent to the subject site – note that a portion of the previously approved development program has already been constructed. The remaining portion will include a 17,450-square-foot retail space to be constructed on the same parcel as the previously constructed Tractor Supply retail store. Trips associated with the future retail development were routed through the study network during the weekday evening and Saturday midday peak hours based on the analysis contained within the Traffic Impact Study prepared by Atlantic Traffic and Design, dated May 22, 2018. Note that said Traffic Impact study does not include trip generation for the weekday morning peak hour and as such trip generation projections for the future retail space during the weekday morning peak hour were prepared utilizing data from ITE's Trip Generation Manual, 10th Edition for Land Use 820 "Shopping Center" and routed through the study network accordingly.

- Calverton Industrial Subdivision – located at 3511 Middle Country Road, approximately 1.5 miles east of the subject site – the application proposes a subdivision of two existing parcels totaling 135 acres for industrial use to be determined. No site plan is currently proposed and therefore the blanket annual growth rate is assumed to include potential build-out of the subject planned development.

- NYS Route 25 at Edwards Avenue Safety Enhancements (PIN 081001) – The intersection of Middle Country Road and Edwards Avenue will undergo intersection widening and an addition of exclusive left-turn lanes at all approaches. Construction is anticipated to be completed before the anticipated Phase 1 build-out of the subject site and as such the proposed improvements were included within the analysis herein. Note that signal timing and phasing have not been altered as detailed modifications are currently unknown.

Appended **Figure 6** illustrates the site-generated traffic associated with the other planned developments assigned to the study area network.

2023 PHASE 1 NO-BUILD TRAFFIC VOLUMES

The site-generated trips associated with the other planned developments were added to the 2023 Base Traffic Volumes to calculate the 2023 No-Build Traffic Volumes for the weekday morning, weekday evening, and Saturday midday peak hours. These volumes are summarized on appended **Figure 7**.

2023 PHASE 1 NO-BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was conducted for the 2023 Phase 1 No-Build Condition during the weekday morning, weekday evening, and Saturday midday peak hours at the study intersections.

Please note that per consultations with NYSDOT, the intersection of Middle Country Road and Edwards Avenue will undergo roadway improvements inclusive of the addition of an exclusive left-turn lane at all

approaches, which has been included in the analysis herein. Under the 2023 Phase 1 No-Build Condition, the overall intersection of Middle Country Road and Edwards Avenue is calculated to operate generally consistent with the findings of the 2020 Existing Condition, and the exclusive left-turn movements are calculated to operate at Level of Service D or better during the weekday morning peak hour and Level of Service C or better during the weekday evening and Saturday midday peak hours.

It should also be noted that under the 2023 Phase 1 No-Build Condition, the southbound approach of the intersection of Middle Country Road and Fresh Pond Avenue is calculated to degrade from Level of Service E to Level of Service F, experiencing a 25.4 second increase in delay during the Saturday midday peak hour. Further, the northbound movements at the subject intersection, which were calculated to operate at Level of Service F during the weekday evening and Saturday midday peak hours under the 2020 Existing Condition, experience a significant increase in delay during the subject peak hours under the 2023 Phase 1 No-Build Condition.

Please also note that the turning movements at the unsignalized intersection of Middle Country Road and Fresh Pond Avenue are calculated to continue to operate with capacity issues during the weekday evening and Saturday midday peak hours.

Under the 2023 Phase 1 No-Build Condition, the study intersections are otherwise calculated to operate generally consistent with the findings of the 2020 Existing Condition. A complete summary of the 2023 Phase 1 No-Build Condition Level of Service and Delay is provided on appended **Table A1**.

2023 PHASE 1 BUILD CONDITION

The site-generated traffic volume of the proposed development was estimated to identify the potential impacts of the project. For the purpose of this analysis, Phase 1 "build out" is assumed by 2023.

SITE ACCESS CONDITIONS

As part of this application, improvements in the public right-of-way will be needed to permit access to the subject property. It is important to note that a virtual meeting was held with the NYSDOT, the Town of Riverhead, the Town's consultants, L.K. McLean Associates (LKMA), and the applicant on December 16, 2020 to discuss the potential access plans. A copy of the meeting minutes is provided the appendix. Pursuant to the subject discussion with NYSDOT and the Town, it was requested that several potential site access conditions be analyzed. Per the date of this report, a final access configuration has not been confirmed. As Middle Country Road is under the jurisdiction of the NYSDOT, a Highway Work Permit is required and Stonefield will continue to coordinate with the State regarding access.

CONDITION A

Site access Condition A considers cross access with the property immediately to the west of the subject site. In Condition A, access would be provided via a signalized access point at the intersection of Middle Country Road and Fresh Pond Avenue and an unsignalized access point along the site's Middle Country Road frontage. Additionally, Condition A considers widening Middle Country Road to provide a westbound left-turn lane at the westbound approach to the traffic signal at Fresh Pond Avenue and a two-way left-turn lane extending between the aforementioned left-turn lane and the eastern extent of the site's Middle Country Road frontage. The subject proposed signal was analyzed to operate on a two (2)-phase, 110-second cycle length signal timing during the weekday morning, weekday evening, and Saturday midday peak hours. In Condition A, trucks would be restricted from executing left turn movements into and out of the unsignalized driveway while passenger vehicles would have the option to execute left turn movements at either access point. Please note that Condition A assumes that the applicant and the owner of the property to the west of the subject site come to a cross access agreement. Per the date of this report, Calverton Industries, the owner of a portion of the property to the west of the subject site, issued a letter dated March 9, 2021, which has been appended to the report and denies the proposal for a cross-access agreement with the applicant; therefore Condition A as proposed may not be feasible.

CONDITION B

In Condition B, access would be provided via a full-movement signalized access point along the site's Middle Country Road frontage. The subject proposed signal was analyzed to operate on a two (2)-phase, 108.5-second cycle length signal timing during the weekday morning, weekday evening, and Saturday midday peak. To assist in determining whether a traffic signal should be installed, Stonefield has prepared a Traffic Signal Warrant Analysis, dated April 19, 2021, which is appended hereto. Based on the adjacent roadway volumes and site-generated traffic, a traffic signal is warranted at the subject location per MUTCD standards. Note that the NYSDOT retains jurisdiction over improvements in the Middle Country Road Right-of-Way. Review with the NYSDOT is on-going per the date of this report. No improvements would be provided at the adjacent intersection with Fresh Pond Avenue which would remain unsignalized. Cross access to the property to the west would not be provided.

CONDITION C

In Condition C, access would be provided via an unsignalized access point along the site's Middle Country Road frontage. Additionally, Condition C considers widening Middle Country Road to provide a westbound left-turn lane at the westbound approach to the traffic signal at Fresh Pond Avenue and a two-way left-turn

lane extending between the aforementioned left-turn lane and the eastern extent of the site's Middle Country Road frontage.

ALTERNATIVE ACCESS VIA ROUNDABOUT

An alternative access condition which may be considered is the implementation of a roundabout at the intersection of Middle Country Road with Fresh Pond Avenue. The advantages and disadvantages of a roundabout configuration at the subject intersection are summarized below:

ADVANTAGES

- Safety – Roundabouts typically operate under reduced vehicular speeds which results in traffic calming effects and provide motorists with extra time to evaluate and correct decisions, thereby potentially reducing severity and frequency of collisions. Additionally, roundabouts generally have fewer points of conflict and specifically eliminate left-turn conflicts, thus contributing to a reduction in multiple-vehicle collisions.

- Improvements to Delay/Queuing – The continuous movement of traffic within a roundabout may result in lower delay and queuing lengths compared to other types of intersection control.

- Operational Cost and Maintenance – Roundabouts do not require traffic signal equipment construction or maintenance, which can be costly for the responsible developers and/or agencies.

DISADVANTAGES

- Intersection Space – Roundabouts often require more intersection space for proper construction than is available in typical Right-of-Way and would likely require land donation from several surrounding properties to the north and south of the roadway.

- Gap Reduction – Continuous flow of traffic through a roundabout may reduce the number of available gaps for motorists at unsignalized intersections and driveways along the corridor, such as the subject site driveway.

- Equal Approach Priority – Roundabouts offer equal priority for all intersection approaches which may result in reduced vehicular progression for intersections with high volume approaches along the mainline. Additionally, the equal-priority approach of a roundabout does not allow for explicit priority for emergency vehicles or pedestrians unless supplemental traffic control devices are provided.

- NYSDOT Review/Approval – The subject intersection is within the NYSDOT Right-of-Way and therefore the intersection configuration is subject to the agency's review and approval. Per consultations with the NYSDOT, preference for a traffic signal over a roundabout was stated based on the corridor characteristics and subject intersection geometry.

As detailed in the appended meeting minutes, the subject access design was discussed in depth at the December 16, 2020 virtual meeting with the Town and NYSDOT. It is important to note that the NYSDOT was open to assessing the advantages and disadvantages of a roundabout but that a roundabout will likely not be considered given the requisite property taking. ~~Therefore, Stonefield prepared the aforementioned assessment but a roundabout has not been analyzed from a highway capacity standpoint as a fourth access alternative~~. However, for comparison purposes a Level of Service Analysis was also conducted for a typical roundabout at the intersection of Middle Country Road and Fresh Pond Avenue and is contained in the report herein.

TRIP GENERATION

Trip generation projections for the proposed industrial park were prepared utilizing the ITE's Trip Generation Manual, 10th Edition. Trip generation rates associated with Land Use 130 "Industrial Park" were cited for the initial 224,969 square feet of the total 411,129-square-foot industrial park to be constructed during Phase 1 of the proposed development. Phase 1 consists of four (4) buildings to be occupied by various tenants and a 1,500-square-foot commissary as an ancillary offering intended to serve employees of the various tenants. ITE characterizes an industrial park as "a mix of manufacturing, service, and warehouse facilities," which is an appropriate definition based on the applicant's expected tenants. It is important to note that the four (4) buildings to be constructed as part of Phase 1 would be occupied by as many as 32 separate tenants in the future, each consisting of 5,600 square feet, 9,072 square feet, or 9,445 square feet. Note that specific tenants for the development have not yet been identified.

As shown on the Site Plan, a 1,500-square-foot commissary is proposed on the northerly end of Building 2. This is typical of industrial parks and is intended to be patronized by the employees of the various tenants. Providing a commissary on the premises also reduces the overall traffic impact of the project as employee vehicles may not need to exit the property as frequently to get lunch, coffee, or other convenience items. The commissary would not generate traffic or parking demand separate from the tenanted industrial park space. **Table 4** provides the weekday morning, weekday evening, and Saturday midday trip generation volumes associated with Phase 1 of the proposed development.

TABLE 4 – PROJECTED PHASE 1 TRIP GENERATION

Land Use		Weekday Morning Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
		Enter	**Exit**	**Total**	**Enter**	**Exit**	**Total**	**Enter**	**Exit**	**Total**
224,969 SF Industrial Park *Land Use 130*	Passenger Vehicles	68	11	79	16	65	81	28	61	89
	Trucks	5	6	11	3	6	9	4	6	10
	Total	**73**	**17**	**90**	**19**	**71**	**90**	**32**	**67**	**99**

Phase 1 of the proposed development is expected to generate 90 trips during the weekday morning and weekday evening peak hours and 99 trips during the Saturday midday peak hour. Based on Transportation Impact Analysis for Site Development published by ITE, a trip increase of less than 100 vehicle trips would likely not change the level of service of the adjacent roadway system or appreciably increase the volume-to-capacity ratio of an intersection approach. Therefore, Phase 1 of the proposed development is not anticipated to significantly impact the operations of the adjacent roadway network. The truck trip generation was evaluated with respect to data published within the ITE's Trip Generation Manual, 10th Edition Supplement, for Land Use 130 "Industrial Park." According to Appendix C, 12% of site-generated traffic during the weekday morning peak hour and 10% of site-generated traffic during the weekday evening peak hour is comprised of trucks. Please note that the ITE does not provide data for truck trip generation during the Saturday midday peak hour. However, it is assumed that a portion of the Saturday midday peak hour traffic would be comprised of trucks. Therefore, the truck percentage for the weekday evening peak hour was applied to the Saturday midday peak hour.

TRIP ASSIGNMENT/DISTRIBUTION

The trips generated by the proposed development were distributed based on the expected travel patterns of the development's various tenants' employees and patrons along with the access management plan of the site. Separate distributions have been prepared for truck traffic and for passenger vehicles, as is explained herein.

Truck traffic has been routed based on the following macroscopic patterns:

- 75% destined to/from the Long Island Expressway – traveling along Edwards Avenue and the segment of Middle Country between the subject site and Edwards Avenue.
- 25% destined to/from NYS Routes 25 and 25A and roadways that connect to these routes including but not limited to William Floyd Parkway and NYS Route 112 – traveling along the segment of Middle Country Road west of the subject site.

Passenger vehicle traffic has been routed based on the following macroscopic patterns:

- 50% destined to/from the Long Island Expressway – traveling along Edwards Avenue and the segment of Middle Country between the subject site and Edwards Avenue.
- 12.5% destined to/from locations along Long Island's north shore in Suffolk County – traveling along NYS Routes 25A and Middle Country Road west of the subject site.
- 12.5% destined to/from locations along Long Island's south shore in Suffolk County – traveling along William Floyd Parkway and Middle Country Road west of the subject site.
- 12.5% destined to/from locations along Long Island's north fork – traveling along Sound Avenue, Fresh Pond Avenue, and Middle County Road in the immediate site vicinity.
- 12.5% destined to/from locations along Long Island's south fork – traveling along NYS Route 24 to Edwards Avenue and the segment of Middle Country between the subject site and Edwards Avenue.

It is important to note that multiple routes to/from the subject site and the Long Island Expressway are possible; however, in order to provide a conservative analysis, traffic has been assigned to the roadway network via the one (1) aforementioned route. This assumption concentrates the traffic at the study intersections as opposed to dispersing traffic over multiple routes. Additionally, considering the multiple potential access configurations, traffic has been routed into/out of the site given the respective allowable turning movements under access conditions A, B, and C. The Truck Routing, Passenger Vehicle Routing, Site-Generated Truck Volumes, Site-Generated Passenger Vehicle Volumes, and Total Site Generated Traffic Volumes for Phase 1 Access Conditions A, B, and C are illustrated on the appended **Figures 8** through **12**, **Figures 14** through **18**, and **Figures 20** through **24**, respectively.

2023 PHASE 1 BUILD TRAFFIC VOLUMES

The total site-generated trips for Phase 1 were added to the 2023 No-Build Traffic Volumes to calculate the 2023 Phase 1 Build Traffic Volumes. The 2023 Phase 1A Build Traffic Volumes, 2023 Phase 1B Build Traffic Volumes, and 2023 Phase 1C Build Traffic Volumes and are shown on appended **Figures 13**, **19**, and **25**, respectively.

2023 PHASE 1A BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was conducted for the study intersections and the intersection created by Middle Country Road and the proposed site driveway during the 2023 Phase 1A Build Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

Under the 2023 Phase 1A Build Condition, the turning movements at the unsignalized intersection of Middle Country Road and the proposed site driveway are calculated to operate at acceptable Level of Service C or better during the study peak hours.

Please note that under the 2023 Phase 1A Build Condition, the intersection of Middle Country Road and Fresh Pond Avenue is analyzed as a signalized intersection with an exclusive westbound left turn lane. The signalized intersection of Middle Country Road and Fresh Pond Avenue is calculated to operate at overall Level of Service A and the turning movements at the subject intersection are calculated to operate at Level of Service D or better during the study peak hours.

Under the 2023 Phase 1A Build Condition, the study intersections are otherwise calculated to operate generally consistent with the findings of the 2023 Phase 1 No-Build Condition during the study peak hours. A complete summary of the 2023 Phase 1A Build Condition Level of Service and Delay is provided on appended **Table A1**.

2023 PHASE 1B BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was conducted for the study intersections and the intersection created by Middle Country Road and the proposed site driveway during the 2023 Phase 1B Build Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

Under the 2023 Phase 1B Build Condition, the signalized intersection of Middle Country Road and the proposed site driveway is calculated to operate at overall Level of Service A and the turning movements at the subject intersection are calculated to operate at Level of Service D or better during the study peak hours.

Please also note that the turning movements at the unsignalized intersection of Middle Country Road and Fresh Pond Avenue are calculated to continue to operate with capacity issues during the weekday evening and Saturday midday peak hours.

Under the 2023 Phase 1B Build Condition, the study intersections are calculated to operate generally consistent with the findings of the 2023 Phase 1 No-Build Condition during the study peak hours. A complete summary of the 2023 Phase 1B Build Condition Level of Service and Delay is provided on appended **Table A1**.

2023 PHASE 1C BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was conducted for the study intersections and the intersection created by Middle Country Road and the proposed site driveway during the 2023 Phase 1C Build Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

Under the 2023 Phase 1C Build Condition, the turning movements at the unsignalized intersection of Middle Country Road and the proposed site driveway are calculated to operate at acceptable Level of Service C or better during the study peak hours.

Please also note that the turning movements at the unsignalized intersection of Middle Country Road and Fresh Pond Avenue are calculated to continue to operate with capacity issues during the weekday evening and Saturday midday peak hours.

Under the 2023 Phase 1C Build Condition, the study intersections are calculated to operate generally consistent with the findings of the 2023 Phase 1 No-Build Condition during the study peak hours. A complete summary of the 2023 Phase 1C Build Condition Level of Service and Delay is provided on appended **Table A1**.

2025 PHASE 2 NO-BUILD CONDITION

BACKGROUND GROWTH

The 2023 Phase 1 Build Condition traffic volume was grown to a future horizon year of 2025, which is when Phase 2 of the proposed industrial park is expected to be fully constructed. Based on data provided by the NYSDOT Office of Technical Services' Traffic Monitoring Section, the existing traffic volumes at the study intersections were increased by 1.0% annually for two (2) years.

OTHER PLANNED DEVELOPMENT PROJECTS

To evaluate the future traffic conditions, it is important to consider the potential site-generated traffic of other projects that could influence the traffic volume at the study intersections. Other planned development projects include those that are either in the entitlement process or have recently been approved for building permits in proximity to the proposed development. Based on consultations with the Town of Riverhead Planning Department, there are no planned developments in the vicinity that are anticipated to impact Phase 2 build out. It is anticipated that Phase 2 of the subject development will also precede the EPCAL development.

2025 PHASE 2 NO-BUILD TRAFFIC VOLUMES

The background growth rate was applied to the 2023 Phase 1 Build Condition Traffic Volumes to calculate the 2025 Phase 2 No-Build Traffic Volumes for the weekday morning and evening peak hours. The 2025 Phase 2A No-Build Traffic Volumes, 2025 Phase 2B No-Build Traffic Volumes, and 2025 Phase 2C No-Build Traffic Volumes are summarized on appended **Figures 26**, **27**, and **28**, respectively.

2025 PHASE 2A NO-BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was also conducted for the study intersections and the intersection created by Middle Country Road and the proposed site driveway during the 2025 Phase 2A No-Build Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

Under the 2025 Phase 2A No-Build Condition, the turning movements at the unsignalized intersection of Middle Country Road and the proposed site driveway are calculated to operate generally consistent with the findings of the 2023 Phase 1A Build Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

Please note that under the 2025 Phase 2A No-Build Condition, the northbound left turn movement of the signalized intersection of Middle Country Road and Edwards Avenue exceeds Level of Service threshold D-E by 5.9 seconds during the weekday morning peak hour. The subject intersection is otherwise calculated to operate generally consistent with the findings of the 2023 Build 1A Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

Under the 2025 Phase 2A No-Build Condition, the study intersections are otherwise calculated to operate generally consistent with the findings of the 2023 Phase 1A Build Condition during the study peak hours. A complete summary of the 2025 Phase 2A No-Build Condition Level of Service and Delay is provided on appended **Table A2**.

2025 PHASE 2B NO-BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was also conducted for the study intersections and the intersection created by Middle Country Road and the proposed site driveway during the 2025 Phase 2B No-Build Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

Under the 2025 Phase 2B No-Build Condition, the signalized intersection of Middle Country Road and the proposed site driveway are calculated to operate generally consistent with the findings of the 2023 Phase 1B Build Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

Please note that under the 2025 Phase 2B No-Build Condition, the northbound left turn movement of the signalized intersection of Middle Country Road and Edwards Avenue exceeds Level of Service threshold D-E by 5.9 seconds during the weekday morning peak hour. The subject intersection is otherwise calculated to operate generally consistent with the findings of the 2023 Build 1B Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

Please also note that the turning movements at the unsignalized intersection of Middle Country Road and Fresh Pond Avenue are calculated to continue to operate with capacity issues during the weekday evening and Saturday midday peak hours.

Under the 2025 Phase 2B No-Build Condition, the study intersections are otherwise calculated to operate generally consistent with the findings of the 2023 Phase 1B Build Condition during the study peak hours. A

complete summary of the 2025 Phase 2B No-Build Condition Level of Service and Delay is provided on appended **Table A2**.

2025 PHASE 2C NO-BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was also conducted for the study intersections and the intersection created by Middle Country Road and the proposed site driveway during the 2025 Phase 2C No-Build Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

Under the 2025 Phase 2C No-Build Condition, the turning movements at the unsignalized intersection of Middle Country Road and the proposed site driveway are calculated to operate generally consistent with the findings of the 2023 Phase 1C Build Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

Please note that under the 2025 Phase 2C No-Build Condition, the northbound left turn movement of the signalized intersection of Middle Country Road and Edwards Avenue exceeds Level of Service threshold D-E by 5.9 seconds during the weekday morning peak hour. The subject intersection is otherwise calculated to operate generally consistent with the findings of the 2023 Build 1C Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

Please also note that the turning movements at the unsignalized intersection of Middle Country Road and Fresh Pond Avenue are calculated to continue to operate with capacity issues during the weekday evening and Saturday midday peak hours.

Under the 2025 Phase 2C No-Build Condition, the study intersections are otherwise calculated to operate generally consistent with the findings of the 2023 Phase 1C Build Condition during the study peak hours. A complete summary of the 2025 Phase 2C No-Build Condition Level of Service and Delay is provided on appended **Table A2**.

2025 PHASE 2 BUILD CONDITION

The site-generated traffic volume of the proposed development was estimated to identify the potential impacts of the project. For the purpose of this analysis, a complete project "build out" of Phase 2 is assumed by 2025.

PHASE 2 TRIP GENERATION

Trip generation projections for the proposed industrial park were prepared utilizing the ITE's Trip Generation Manual, 10th Edition. Trip generation rates associated with Land Use 130 "Industrial Park" were

cited for the remaining 186,160 square feet of the total 411,129-square-foot industrial park to be constructed during Phase 2 of the proposed development. **Table 5** provides the weekday morning, weekday evening, and Saturday midday total trip generation volumes associated with Phase 1 and Phase 2 of the proposed development.

TABLE 5 – PROJECTED TRIP GENERATION

			Weekday Morning Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Phase 1	224,969 SF Industrial Park *Land Use 130*	Passenger Vehicles	68	11	79	16	65	81	28	61	89
		Trucks	5	6	11	3	6	9	4	6	10
		Total	**73**	**17**	**90**	**19**	**71**	**90**	**32**	**67**	**99**
Phase 2	186,160 SF Industrial Park *Land Use 130*	Passenger Vehicles	56	9	65	12	55	67	23	51	74
		Trucks	4	5	9	3	**4**	**7**	3	**5**	**8**
		Total	**60**	**14**	**74**	**15**	**59**	**74**	**26**	**56**	**82**
Total	411,129 SF Industrial Park	Passenger Vehicles	124	20	144	28	120	148	51	112	163
		Trucks	9	11	20	6	10	16	7	11	18
		Total	**133**	**31**	**164**	**34**	**130**	**164**	**58**	**123**	**181**

Please note that the applicant intends to tenant Phase 2 with similar tenants as described for Phase 1. The commissary build under Phase 1 would support employees of tenants from both Phases of the development.

TRIP ASSIGNMENT/DISTRIBUTION

The trips generated by Phase 2 of the proposed development were distributed based on the assignments described for Phase 1 of the development. The Site-Generated Truck Volumes, Site-Generated Passenger Vehicle Volumes, and Total Site Generated Traffic Volumes for Phase 2 Access Conditions A, B, and C are illustrated on the appended **Figures 29** through **31**, **Figures 33** through **35**, and **Figures 37** through **39**, respectively.

2025 PHASE 2 BUILD TRAFFIC VOLUMES

The site-generated trips were added to the 2025 Phase 2 No-Build Traffic Volumes to calculate the 2025 Phase 2 Build Traffic Volumes. The 2025 Phase 2A Build Traffic Volumes, 2025 Phase 2B Build Traffic Volumes, and 2025 Phase 2C Build Traffic Volumes and are shown on appended **Figures 32**, **36**, and **40**, respectively.

2025 PHASE 2A BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was also conducted for the 2025 Phase 2A Build Condition during the study peak hours at the proposed site driveway and study intersections.

Under the 2025 Phase 2A Build Condition, the turning movements at the unsignalized intersection of Middle Country Road and the proposed site driveway are calculated to operate generally consistent with the findings of the 2025 Phase 2A No-Build Condition during the study peak hours.

It is important to note that under the 2025 Phase 2A No-Build Condition, the northbound left turn movement of the signalized intersection of Middle Country Road and Edwards Avenue exceeds Level of Service threshold E-F by 15.4 seconds during the weekday morning peak hour. Additionally, please note that the overall intersection is calculated to exceed the LOS C-D threshold by 1.0 second during the weekday morning peak hour, however this change is minimal and is therefore not anticipated to be perceptible to motorists traversing the roadway. The subject intersection is otherwise calculated to operate generally consistent with the findings of the 2025 No-Build 2A Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

Under the 2025 Phase 2A Build Condition, the study intersections are otherwise calculated to operate generally consistent with the findings of the 2025 Phase 2A No-Build Condition during the study peak hours. A complete summary of the 2025 Phase 2A Build Condition Level of Service and Delay is provided on appended **Table A2**.

2025 PHASE 2B BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was also conducted for the 2025 Phase 2B Build Condition during the study peak hours at the proposed site driveway and study intersections.

Under the 2025 Phase 2B Build Condition, the turning movements at the signalized intersection of Middle Country Road and the proposed site driveway are calculated to operate generally consistent with the findings of the 2025 Phase 2B No-Build Condition during the study peak hours.

It is important to note that under the 2025 Phase 2B No-Build Condition, the northbound left turn movement of the signalized intersection of Middle Country Road and Edwards Avenue exceeds Level of Service threshold E-F by 15.4 seconds during the weekday morning peak hour. Additionally, please note that the overall intersection is calculated to exceed the LOS C-D threshold by 1.0 second during the weekday morning peak hour, however this change is minimal and is therefore not anticipated to be perceptible to motorists traversing the roadway. The subject intersection is otherwise calculated to operate generally consistent with the findings of the 2025 No-Build 2B Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

Please also note that the turning movements at the unsignalized intersection of Middle Country Road and Fresh Pond Avenue are calculated to continue to operate with capacity issues during the weekday evening and Saturday midday peak hours.

Under the 2025 Phase 2B Build Condition, the study intersections are otherwise calculated to operate generally consistent with the findings of the 2025 Phase 2B No-Build Condition during the study peak hours. A complete summary of the 2025 Phase 2B Build Condition Level of Service and Delay is provided on appended **Table A2**.

2025 PHASE 2C BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was also conducted for the 2025 Phase 2C Build Condition during the study peak hours at the proposed site driveway and study intersections.

Under the 2025 Phase 2C Build Condition, the turning movements at the unsignalized intersection of Middle Country Road and the proposed site driveway are calculated to operate generally consistent with the findings of the 2025 Phase 2C No-Build Condition during the study peak hours.

It is important to note that under the 2025 Phase 2C No-Build Condition, the northbound left turn movement of the signalized intersection of Middle Country Road and Edwards Avenue exceeds Level of Service threshold E-F by 15.4 seconds during the weekday morning peak hour. Additionally, please note that the overall intersection is calculated to exceed the LOS C-D threshold by 1.0 second during the weekday morning peak hour, however this change is minimal and is therefore not anticipated to be perceptible to motorists traversing the roadway. The subject intersection is otherwise calculated to operate generally consistent with the findings of the 2025 No-Build 2C Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

Please also note that the turning movements at the unsignalized intersection of Middle Country Road and Fresh Pond Avenue are calculated to continue to operate with capacity issues during the weekday evening and Saturday midday peak hours.

Under the 2025 Phase 2C Build Condition, the study intersections are otherwise calculated to operate generally consistent with the findings of the 2025 Phase 2C No-Build Condition during the study peak hours. A complete summary of the 2025 Phase 2C Build Condition Level of Service and Delay is provided on appended **Table A2**.

PHASE 2 BUILD MITIGATION

Please note that under the 2025 Phase 2A, 2B, and 2C Build Conditions, the northbound left turn movement at the signalized intersection of Middle Country Road and Edwards Avenue is to operate with capacity constraints during the weekday morning peak hour. In order to provide a potential mitigation measure, Stonefield recommends minor signal timing modifications for the NYSDOT's consideration. The following modification would mitigate the calculated increase in delay and create more favorable operating conditions in the 2025 Phase 2A, 2B, and 2C Build Conditions.

- Weekday Morning Peak Hour: Reduction in cycle length from 113 seconds to 90 seconds, with a maximum split of 59 seconds allocated to the eastbound and westbound Middle Country Road approaches and a maximum split of 31 seconds allocated to the northbound and southbound Edwards Avenue approaches. It should be noted that under the proposed mitigation the eastbound right turn movement would exceed the LOS C-D threshold with a 12.9 second increase in delay from the 2025 Phase 2 Build Conditions. As discussed, the NYSDOT is presently in the design phase for improvements at the subject intersection. It should be noted that Stonefield is offering a potential signal timing mitigation; however, it is possible that the State accounts for additional capacity and the calculated increase in delay is never realized.

A complete summary of the 2025 Mitigation Build Level of Service and Delay for Conditions A, B and C is provided on appended **Table A3**.

2025 MAXIMUM BUILD-OUT SCENARIO

In addition to analysis of Phase 1 and Phase 2 of the proposed development, the site-generated traffic volume of the most intense trip generating uses permitted on the subject property under the current zoning was estimated to identify the potential impacts of the "maximum build-out" scenario. For the purpose of this analysis, a review of the Maximum Build Out Plan with As-Of-Right Uses prepared by Key Civil Engineering, dated April 2, 2021, was performed, and complete project "build out" of the maximum build-out scenario is assumed by 2025.

TRIP GENERATION

Please note that Phase 1 of the maximum build-out scenario is consistent with the Phase 1 build-out proposed for the proposed development. Trip generation projections for the Phase 2 maximum build-out scenario were prepared utilizing the ITE's Trip Generation Manual, 10th Edition. Trip generation rates associated with Land Use 495 "Recreational Community Center," Land Use 860 "Wholesale Market," Land Use 925 "Drinking Place," and Land Use 140 "Manufacturing" were cited for the 50,990-square-foot recreation

center, 48,704-square-foot wholesale space, and 48,704-square-foot indoor manufacturing/commercial brewery space, respectively. **Table 6** provides the weekday morning, weekday evening, and Saturday midday total trip generation volumes associated with Phase 1 and Phase 2 of the maximum build-out scenario.

TABLE 6 – PROJECTED TRIP GENERATION

			Weekday Morning Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Phase 1	224,969 SF Industrial Park *Land Use 130*	Passenger Vehicles	68	11	79	16	65	81	28	61	89
		Trucks	5	6	11	3	6	9	4	6	10
		Total	**73**	**17**	**90**	**19**	**71**	**90**	**32**	**67**	**99**
Phase 2 (Maximum Build-Out)	50,990 SF Commercial Sports and Recreation Facility *Land Use 495*	Total	**59**	**31**	**90**	**55**	**63**	**118**	**29**	**26**	**55**
	48,704 SF Wholesale Business *Land Use 860*	Passenger Vehicles	17	9	26	42	38	80	41	38	79
		Trucks	1	0	1	3	3	6	4	3	7
		Total	**18**	**9**	**27**	**45**	**41**	**86**	**45**	**41**	**86**
	48,704 SF Indoor Manufacturing/ Commercial Brewery *Land Uses 140 and 925*	Passenger Vehicles	19	5	24	43	37	80	70	42	112
		Trucks	2	1	3	3	3	6	4	3	7
		Total	**21**	**6**	**27**	**46**	**40**	**86**	**74**	**45**	**119**
Total	Maximum Build-Out Scenario	Passenger Vehicles	163	56	219	156	203	359	168	167	335
		Trucks	8	7	15	9	12	21	12	12	24
		Total	**171**	**63**	**234**	**165**	**215**	**380**	**180**	**179**	**359**

The maximum build-out scenario is anticipated to generate a total of 234 trips during the weekday morning peak hour, 380 trips during the weekday evening peak hour, and 359 trips during the Saturday midday peak hour. The truck trip generation was evaluated with respect to data published within the ITE's Trip Generation Manual, 10th Edition Supplement, for Land Use 140 "Manufacturing" and applied to the wholesale and indoor manufacturing/commercial brewery projected trips. According to Appendix C, 8% of site-generated traffic during the weekday morning peak hour and 7% of site-generated traffic during the weekday evening peak hour is comprised of trucks. Please note that the ITE does not provide data for truck trip generation during the Saturday midday peak hour. However, it is assumed that a portion of the Saturday midday peak hour traffic

would be comprised of trucks. Therefore, the truck percentage for the weekday evening peak hour was applied to the Saturday midday peak hour.

Table 7 provides a net comparison of the proposed Phase 2 trip generation and maximum build-out scenario Phase 2 trip generation volumes. Please note that Phase 1 of the maximum build-out scenario is consistent with the Phase 1 build-out proposed for the proposed development and is therefore not applicable when considering the net trip increment.

TABLE 7 – PHASE 2 TRIP GENERATION COMPARISON

	Land Use	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Phase 2	186,160 SF Industrial Park *Land Use 130*	60	14	74	15	59	74	26	56	82
Phase 2 (Maximum Build-Out)	50,990 SF Commercial Sports and Recreational Facility *Land Use 495*	59	31	90	55	63	118	29	26	55
	48,704 SF Wholesale Business *Land Use 860*	18	9	27	45	41	86	45	41	86
	48,704 SF Indoor Manufacturing/Commercial Brewery *Land Uses 140 and 925*	21	6	27	46	40	86	74	45	119
	NET	**+38**	**+32**	**+70**	**+131**	**+85**	**+216**	**+122**	**+56**	**+178**

TRIP ASSIGNMENT/DISTRIBUTION

The trips generated by Phase 1 and Phase 2 of the maximum build-out scenario were distributed based on the assignments described for Phase 1 and Phase 2 of the proposed development. The Site-Generated Truck Volumes, Site-Generated Passenger Vehicle Volumes, and Total Site Generated Traffic Volumes for the maximum build-out scenario for Access Conditions A, B and C, which are herein referred to as Conditions D, E, and F, respectively, are illustrated on the appended **Figures 41** through **43**, **Figures 45** through **47**, and **Figures 49** through **51**, respectively.

2025 MAXIMUM BUILD-OUT TRAFFIC VOLUMES

The site-generated trips were added to the 2025 Phase 2 No-Build Traffic Volumes to calculate the 2025 Maximum Build-Out Scenario Traffic Volumes. The 2025 Phase 2D Build Traffic Volumes, 2025 Phase 2E Build

Traffic Volumes, and 2025 Phase 2F Build Traffic Volumes and are shown on appended **Figures 44**, **48**, and **52**, respectively.

PHASE 2D BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was also conducted for the 2025 Phase 2D Build Condition during the study peak hours at the proposed site driveway and study intersections.

Under the 2025 Phase 2D Build Condition, the northbound left movement at the unsignalized intersection of Middle Country Road and the proposed site driveway exceeds the LOS C-D threshold during the weekday evening peak hour. The turning movements at the subject intersection are otherwise calculated to operate generally consistent with the findings of the 2025 Phase 2A No-Build Condition during the study peak hours.

The signalized intersection of Middle Country Road and Fresh Pond Avenue is calculated to exceed the overall LOS A-B threshold during the weekday evening and Saturday midday peak hours. The subject intersection is otherwise calculated to operate generally consistent with the findings of the 2025 Phase 2A No-Build Condition during the study peak hours.

The signalized intersection of Middle Country Road and Edwards Avenue is calculated to exceed the overall LOS C-D threshold during the weekday morning peak hour and the overall LOS B-C threshold during the weekday evening and Saturday midday peak hours. It is important to note that the northbound left turn movement of the subject intersection increases in delay to a Level of Service F, E, and D during the weekday morning, weekday evening, and Saturday midday peak hours, respectively. Additionally, please note that the westbound left turn movement of the subject intersection is calculated to exceed the LOS D-E threshold during the weekday morning peak hour and the LOS C-D threshold during the Saturday midday peak hour. The subject intersection is otherwise calculated to operate generally consistent with the findings of the 2025 No-Build 2A Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

Under the 2025 Phase 2D Build Condition, the study intersections are otherwise calculated to operate generally consistent with the findings of the 2025 Phase 2A No-Build Condition during the study peak hours. A complete summary of the 2025 Phase 2D Build Condition Level of Service and Delay is provided on appended **Table A3**.

PHASE 2E BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was also conducted for the 2025 Phase 2E Build Condition during the study peak hours at the proposed site driveway and study intersections.

Under the 2025 Phase 2E Build Condition, the signalized intersection of Middle Country Road and the proposed site driveway are calculated to exceed the overall LOS A-B threshold during the weekday morning peak hour. Further, the overall intersection is calculated to increase from LOS A to LOS D during the weekday evening peak hour and is calculated to increase from LOS A to LOS C during the weekday evening peak hour. It is also important to note that the westbound left turn movement is calculated to increase from LOS A during all study hours to LOS B, LOS F, and LOS C during the weekday morning, weekday evening, and Saturday midday peak hours, respectively. The subject intersection is otherwise calculated to operate generally consistent with the findings of the 2025 Phase 2B No-Build Condition.

The signalized intersection of Middle Country Road and Edwards Avenue is calculated to exceed the overall LOS C-D threshold during the weekday morning peak hour and the overall LOS B-C threshold during the weekday evening and Saturday midday peak hours. It is important to note that the northbound left turn movement of the subject intersection increases in delay to a Level of Service F, E, and D during the weekday morning, weekday evening, and Saturday midday peak hours, respectively. Additionally, please note that the westbound left movement of the subject intersection is calculated to exceed the LOS D-E threshold during the weekday morning peak hour and the LOS C-D threshold during the Saturday midday peak hour. The subject intersection is otherwise calculated to operate generally consistent with the findings of the 2025 No-Build 2B Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

Please also note that the turning movements at the unsignalized intersection of Middle Country Road and Fresh Pond Avenue are calculated to continue to operate with capacity issues during the weekday evening and Saturday midday peak hours.

Under the 2025 Phase 2E Build Condition, the study intersections are otherwise calculated to operate generally consistent with the findings of the 2025 Phase 2B No-Build Condition during the study peak hours. A complete summary of the 2025 Phase 2E Build Condition Level of Service and Delay is provided on appended **Table A3**.

PHASE 2F BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was also conducted for the 2025 Phase 2F Build Condition during the study peak hours at the proposed site driveway and study intersections.

Under the 2025 Phase 2F Build Condition, the northbound left turn movement at the unsignalized intersection of Middle Country Road and the proposed site driveway is calculated to increase from LOS C to LOS F during the weekday evening peak hour and from LOS C to LOS E during the Saturday midday peak hour.

The turning movements at the subject intersection are otherwise calculated to operate generally consistent with the findings of the 2025 Phase 2C No-Build Condition during the study peak hours.

The signalized intersection of Middle Country Road and Edwards Avenue is calculated to exceed the overall LOS C-D threshold during the weekday morning peak hour and the overall LOS B-C threshold during the weekday evening and Saturday midday peak hours. It is important to note that the northbound left turn movement of the subject intersection increases in delay to a Level of Service F, E, and D during the weekday morning, weekday evening, and Saturday midday peak hours, respectively. Additionally, please note that the westbound left movement of the subject intersection is calculated to exceed the LOS D-E threshold during the weekday morning peak hour and the LOS C-D threshold during the Saturday midday peak hour. The subject intersection is otherwise calculated to operate generally consistent with the findings of the 2025 No-Build 2C Condition during the weekday morning, weekday evening, and Saturday midday peak hours.

Please also note that the turning movements at the unsignalized intersection of Middle Country Road and Fresh Pond Avenue are calculated to continue to operate with capacity issues during the weekday evening and Saturday midday peak hours.

Under the 2025 Phase 2F Build Condition, the study intersections are otherwise calculated to operate generally consistent with the findings of the 2025 Phase 2C No-Build Condition during the study peak hours. A complete summary of the 2025 Phase 2F Build Condition Level of Service and Delay is provided on appended **Table A3**.

ROUNDABOUT ANALYSIS

In addition to Site Access Conditions A, B, and C and the Maximum Build-Out Scenario Conditions D, E, and F, a Level of Service analysis was prepared to examine the aforementioned alternative roundabout access condition, referred to as "Condition G" herein. Under Condition G, the existing unsignalized two (2)-way stop-controlled intersection of Middle Country Road and Fresh Pond Avenue is replaced with a typical one (1)-lane roundabout intersection which provides one (1) shared left-turn/through/right-turn lane throughout at each approach.

TRIP ASSIGNMENT/DISTRIBUTION AND TRAFFIC VOLUMES

Please note that per consultations with the NYSDOT, which maintains jurisdiction of Middle Country Road, a roundabout intersection would not likely be feasible at the subject location due to the large area of land donations required for construction and the existing characteristics of the corridor. Therefore, a complete build-out is not included in the roundabout analysis. However, for comparison purposes, the roundabout analysis includes traffic volumes and trip distributions previously utilized for the 2025 Phase 2A Condition,

which is a conservative analysis of the maximum number of vehicles projected at the study intersection associated with the proposed development program. Truck routing and passenger vehicle routing distributions for Condition G are illustrated on the appended **Figures 53** and **54**. The Site-Generated Truck Volumes, Site-Generated Passenger Vehicle Volumes, and Total Site Generated Traffic Volumes for the Phase 1G Condition are illustrated on the appended **Figures 55** through **57**, respectively, and the 2025 Phase 1G Build Traffic Volumes are shown on appended **Figure 58**. The Site-Generated Truck Volumes, Site-Generated Passenger Vehicle Volumes, and Total Site Generated Traffic Volumes for the Phase 2G Condition are illustrated on the appended **Figures 59** through **61**, respectively, and the 2025 Phase 1G Build Traffic Volumes are shown on appended **Figure 62**.

PHASE 2G BUILD LOS/CAPACITY ANALYSIS

A Level of Service and Volume/Capacity analysis was also conducted for the 2025 Phase 2G Build Condition during the study peak hours at the study intersection of Middle Country Road and Fresh Pond Avenue. **Table 8** provides a summary of the Level of Service and Delay values at the roundabout intersection during the weekday morning, weekday evening, and Saturday midday peak hours.

Under the 2025 Phase 2G Build Condition, all the turning movements at the roundabout intersection of Middle Country Road and Fresh Pond Avenue are calculated to operate at Level of Service B or better during the weekday morning and Saturday midday peak hours and Level of Service C or better during the weekday evening peak hour.

COMPARATIVE LEVEL OF SERVICE (DELAY) TABLE

MIDDLE COUNTRY ROAD & FRESH POND AVENUE
EB (Eastbound) and WB (Westbound) approaches are the Middle Country Road approaches
NB (Northbound) approach is the Tractor Supply Co. driveway approach
SB (Southbound) approach is the Fresh Pond Avenue approach
X (n) = Level of Service (seconds of delay)

TABLE 8 – PHASE 2G BUILD CONDITION

Lane Group	Weekday Morning Peak Hour	Weekday Evening Peak Hour	Saturday Midday Peak Hour
EB Left/Through/Right	B (14.9)	A (9.4)	B (11.8)
WB Left/Through/Right	A (6.9)	C (18.4)	B (12.7)
NB Left/Through/Right	A (9.3)	A (7.4)	A (8.5)
SB Left/Through/Right	A (5.4)	A (9.5)	A (8.2)

Per consultations with the NYSDOT, which maintains jurisdiction of Middle Country Road, a roundabout intersection would not likely be feasible at the subject location due to the large area of land donations required for construction and the existing characteristics of the corridor.

PROJECTED CONSTRUCTION TRIP GENERATION

Trip generation associated with site construction has been approximated to assess the short-term impacts of the project. Please note that the project will be constructed over 3 phases – Phase 1A, Phase 1B, and Phase 2. Trip volumes have been projected for each phase, as detailed below. Trips are associated with the following construction activities: removal of material associated with clearing and grubbing, removal of topsoil, transporting of fill material, construction equipment delivery, and debris removal. It is important to note that the roadways in the site vicinity, such as Middle Country Road, Edwards Avenue, etc. permit truck traffic. Any carting of debris or deliveries of material and equipment via heavy vehicle will be required to comply with State and local regulations on truck traffic.

Phase 1A includes the construction of the recharge basin and associated drywell network in the southerly extent of the property and also includes the clearing and grading of the temporary access road. Phase 1A is anticipated to be completed over 6 months. Phase 1A is projected to generate: 30 trucks for removal of material associated with clearing and grubbing, 1,917 trucks associated with the removal of topsoil, and approximately 10 construction equipment deliveries. This equates to approximately 10-15 trucks per day.

Phase 1B includes the clearing and grading of the northern half of the site to construct the improvements associated with buildings 1, 2, 3, and 4. Phase 1B is anticipated to be completed over 18 months. Phase 1B is projected to generate: 35 trucks for removal of material associated with clearing and grubbing, approximately 10 construction equipment deliveries, and 75-90 roll off dumpsters associated with debris removal. Note that the cut material from Phase 1 will be stored within Phase 2 area and used for Phase 2 construction. Therefore, no construction traffic is associated with the Phase 1 cut material. This equates to approximately 1-2 trucks per week.

Phase 2 includes the clearing and grading of the remaining southern half of the site to construct improvements associated with buildings 5, 6, 7, and 8. Phase 2 is anticipated to be completed over 18 months. Phase 2 is projected to generate: 13 trucks for removal of material associated with clearing and grubbing, 309 trucks associated with the removal of topsoil, 314 trucks associated with exporting cut material, approximately 10 construction equipment deliveries, and 62-75 roll off dumpsters associated with debris removal. This equates to approximately 2 trucks per day.

SITE CIRCULATION/PARKING SUPPLY

A review was conducted of the proposed industrial park using the Site Plan prepared by Key Civil Engineering, last revised December 15, 2021. In completing this review, particular attention was focused on the site access, circulation, and parking supply.

Access is proposed via one (1) driveway along Middle Country Road. Construction of the site will be completed in two phases. Phase 1 of the project will be constructed on the northern portion of the subject property and will consist of four (4) buildings to be occupied by various tenants with a total of 224,969 square feet of gross floor area and a 1,500-square-foot commissary located to the north of Building 2 as an ancillary offering intended to serve employees of the various tenants. Phase 2 of the project will be constructed on the southern portion of the subject property and will consist of an additional four (4) buildings with a total of 186,160 square feet of gross floor area. The complete build-out will result in a 411,129-square-foot industrial park with anticipated tenants to include warehouse, wholesale, and indoor manufacturing facilities. Each of the buildings will be subdivided into spaces to be occupied by various tenants; the buildings constructed on the westerly side of the site will each provide space for ten (10) tenants and the buildings constructed on the easterly side of the property will each provide space for five (5) to six (6) tenants. The site will provide a total of 101 loading spaces located on the outer extents of the property, between the lot lines and the buildings. Passenger vehicle parking will be provided in the central portion of the property, between the two rows of buildings. The parking field will be separated by a 26-foot, two (2)-way drive aisle. Approximately 40 feet of landscape buffer will be provided along the eastern and western borders of the subject property.

The Town of Riverhead ordinance requires one (1) parking stall per 400 square feet of gross floor area for a manufacturing establishment and one (1) parking stall per 1,000 square feet up to 5,000 square feet of gross floor area plus one (1) parking stall per additional 10,000 square feet of gross floor area for a warehouse. For both phases of the proposed industrial park, this equates to 324 required spaces. The site would provide 326 total parking spaces, inclusive of sixteen (16) ADA accessible parking spaces, which meets the parking requirement. The spaces would be 10 feet wide by 20 feet deep in accordance with the Town ordinance and industry standards. Please note that the 1,500-square-foot commissary is excluded from the parking requirement calculation as it is an ancillary use to the industrial park and is anticipated to be patronized by employees of the same.

CONCLUSIONS

This report was prepared to examine the potential traffic impact of the proposed industrial park. The analysis findings, which have been based on industry-standard guidelines, indicate that Phase 1 of the proposed development would not have a significant impact on the traffic operations of the adjacent roadway network. Phase 2 of the proposed development would not have a significant impact on the traffic operations of the adjacent roadway network with minor signal timing modifications to the nearby signalized intersection of Middle Country Road and Edwards Avenue; however, it is important to note that per consultations with NYSDOT, the subject intersection will undergo roadway improvements which may proactively mitigate any increases in delay which are calculated within the analysis contained. The site driveway and on-site layout have been designed to provide for effective access to and from the subject property and access condition. Access Conditions A, B, and C are anticipated to provide acceptable Levels of Service at the subject site driveway while generally maintaining or improving the existing roadway conditions within the study network. Based on the Town of Riverhead Zoning Ordinance, the parking supply would be sufficient to support this project.

Z:\LIC\NYC\2020\NYC-200069 HK Ventures LLC - 4285 Middle Country Road, Calverton, NY\Calculations & Reports\Traffic\Reports\2022-02 TIS and FEIS\2022-02 TIS.docx

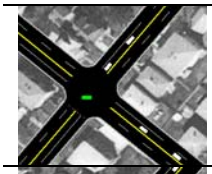
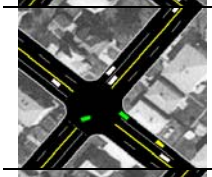
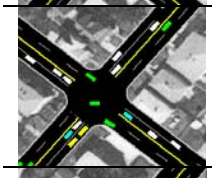
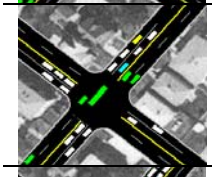
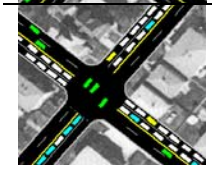
TECHNICAL APPENDIX

LEVEL OF SERVICE/AVERAGE CONTROL DELAY CRITERIA

LEVEL OF SERVICE /AVERAGE CONTROL DELAY CRITERIA

The ability of a roadway to effectively accommodate traffic demand is determined through an assessment of the volume-to-capacity ratio, delay and Level of Service of the lane group and/or intersection. The volume-to-capacity ratio is the ratio of traffic flow rate to capacity for a given transportation facility. As defined within the Highway Capacity Manual, 6th Edition (HCM), intersection delay is the total additional travel time experienced by drivers, passengers, or pedestrians as a result of control measures and interaction with other users of the facility, divided by the volume departing from the corresponding cross section of the facility. Level of service is a qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience.

For an unsignalized intersection, LOS A indicates operations with delay less than 10 seconds per vehicle, while LOS F describes operations with delay in excess of 50 seconds per vehicle. For a signalized intersection, LOS A indicates operations with delay less than 10 seconds per vehicle and LOS F denotes operations with delay in excess of 80 seconds per vehicle.

	Level Of Service (LOS)	Signalized Delay Range (average control delay in sec/veh)	Unsignalized Delay Range (average control delay in sec/veh)
	A	<=10	<=10
	B	>10 and <=20	>10 and <=15
	C	>20 and <=35	>15 and <=25
	D	>35 and <=55	>25 and <=35
	E	>55 and <=80	>35 and <=50
	F	>80	>50

Source: Highway Capacity Manual, 6th Edition

COMPARATIVE LEVEL OF SERVICE (DELAY) TABLES

STONEFIELD

Table A1
Comparative Level of Service (Delay) Tables
X (n) = Level of Service (seconds of delay)

Intersection	Lane Group	2020 Existing Condition			2023 No-Build Condition Phase 1			2023 Build Condition A - Phase 1			2023 Build Condition B - Phase 1			2023 Build Condition C - Phase 1		
		AM Peak LOS (Delay)	PM Peak LOS (Delay)	SAT Peak LOS (Delay)	AM Peak LOS (Delay)	PM Peak LOS (Delay)	SAT Peak LOS (Delay)	AM Peak LOS (Delay)	PM Peak LOS (Delay)	SAT Peak LOS (Delay)	AM Peak LOS (Delay)	PM Peak LOS (Delay)	SAT Peak LOS (Delay)	AM Peak LOS (Delay)	PM Peak LOS (Delay)	SAT Peak LOS (Delay)
Middle Country Road (E/W) & Burman Boulevard (N/S)	EB Through	A (3.5)	A (4.0)	A (3.0)	A (3.7)	A (4.2)	A (3.2)	A (3.7)	A (4.3)	A (3.2)	A (3.7)	A (4.3)	A (3.2)	A (3.7)	A (4.3)	A (3.2)
	EB Right	A (2.5)	A (3.1)	A (2.2)	A (2.6)	A (3.3)	A (2.2)	A (2.6)	A (3.3)	A (2.2)	A (2.6)	A (3.3)	A (2.2)	A (2.6)	A (3.3)	A (2.2)
	WB Left	A (4.2)	A (4.5)	A (3.3)	A (4.5)	A (4.9)	A (3.5)	A (4.6)	A (4.9)	A (3.5)	A (4.6)	A (4.9)	A (3.5)	A (4.6)	A (4.9)	A (3.5)
	WB Through	A (3.0)	A (4.8)	A (3.0)	A (3.1)	A (5.1)	A (3.2)	A (3.1)	A (5.2)	A (3.2)	A (3.1)	A (5.2)	A (3.2)	A (3.1)	A (5.2)	A (3.2)
	NB Left	D (38.3)	D (38.2)	D (36.0)	D (38.2)	D (38.0)	D (35.9)	D (38.2)	D (38.0)	D (35.9)	D (38.2)	D (38.0)	D (35.9)	D (38.2)	D (38.0)	D (35.9)
	NB Right	D (36.7)	D (41.0)	D (36.1)	D (36.8)	D (41.1)	D (36.1)	D (36.8)	D (41.1)	D (36.1)	D (36.8)	D (41.1)	D (36.1)	D (36.8)	D (41.1)	D (36.1)
	Overall	**A (5.8)**	**B (12.6)**	**A (4.8)**	**A (6.0)**	**B (12.8)**	**A (5.0)**	**A (6.0)**	**B (12.6)**	**A (5.0)**	**A (6.0)**	**B (12.6)**	**A (5.0)**	**A (6.0)**	**B (12.6)**	**A (5.0)**
Middle Country Road (E/W) & Edwards Avenue (N/S)	EB Left				B (11.4)	C (29.1)	B (19.5)	B (13.9)	C (30.5)	C (21.1)	B (13.9)	C (30.5)	C (21.1)	B (13.9)	C (30.5)	C (21.1)
	EB Left/Through/Right	B (17.2)	B (10.2)	B (12.1)	C (22.1)	B (12.0)	B (11.4)	C (29.8)	B (13.3)	B (13.2)	C (29.8)	B (13.3)	B (13.2)	C (29.8)	B (13.3)	B (13.2)
	WB Left				D (38.2)	B (18.4)	B (18.7)	D (48.7)	C (21.3)	C (22.4)	D (48.7)	C (21.3)	C (22.4)	D (48.7)	C (21.3)	C (22.4)
	WB Left/Through/Right	A (8.6)	B (13.4)	B (12.1)	A (8.9)	B (16.2)	B (11.5)	B (10.9)	B (17.2)	B (12.5)	B (10.9)	B (17.2)	B (12.5)	B (10.9)	B (17.2)	B (12.5)
	NB Left				D (39.8)	C (31.1)	C (29.5)	D (53.4)	C (32.6)	C (29.7)	D (53.4)	C (32.6)	C (29.7)	D (53.4)	C (32.6)	C (29.7)
	NB Left/Through/Right	C (30.7)	C (27.1)	C (27.2)	C (29.7)	C (21.7)	C (25.3)	C (33.3)	C (22.3)	C (24.5)	C (33.3)	C (22.3)	C (24.5)	C (33.3)	C (22.3)	C (24.5)
	SB Left				C (34.4)	C (24.5)	C (30.1)	D (38.9)	C (25.2)	C (29.3)	D (38.9)	C (25.2)	C (29.3)	D (38.9)	C (25.2)	C (29.3)
	SB Left/Through/Right	C (28.4)	C (25.1)	C (24.0)	C (30.8)	C (23.2)	C (23.6)	C (34.5)	C (23.8)	C (23.0)	C (34.5)	C (23.8)	C (23.0)	C (34.5)	C (23.8)	C (23.0)
	Overall	**B (19.2)**	**B (15.8)**	**B (16.1)**	**C (30.8)**	**B (17.6)**	**B (16.0)**	**C (29.7)**	**B (18.7)**	**B (16.9)**	**C (29.7)**	**B (18.7)**	**B (16.9)**	**C (29.7)**	**B (18.7)**	**B (16.9)**
Middle Country Road (E/W) & Fresh Pond Avenue (N/S)	EB Left	A (8.0)	A (9.7)	A (9.2)	A (8.1)	A (9.8)	A (9.3)				A (8.1)	A (9.9)	A (9.4)	A (8.1)	A (9.9)	A (9.4)
	EB Left/Through/Right							A (6.5)	A (5.6)	A (6.5)						
	WB Left	A (9.7)	A (8.8)	A (9.0)	A (9.9)	A (9.0)	A (9.3)	A (3.1)	A (3.3)	A (3.6)	A (9.9)	A (9.0)	A (9.3)	A (9.9)	A (9.0)	A (9.3)
	WB Through/Right							A (3.8)	A (7.7)	A (5.9)						
	NB Left	D (28.9)	F (69.9)	F (60.1)	D (33.0)	F (124.4)	F (120.0)	D (36.3)	D (35.1)	D (35.1)	D (34.1)	F (147.3)	F (130.0)	D (33.9)	F (135.0)	F (123.2)
	NB Through/Right	C (15.6)	C (19.5)	C (19.6)	C (16.3)	C (20.1)	C (20.8)	D (36.2)	D (36.0)	D (36.4)	C (16.6)	C (20.6)	C (21.2)	C (16.6)	C (20.2)	C (20.8)
	SB Left/Through/Right	C (17.1)	F (53.4)	E (43.2)	C (19.1)	F (76.6)	F (68.6)	D (39.1)	D (35.9)	D (36.4)	C (23.2)	F (94.3)	F (88.8)	C (23.1)	F (89.0)	F (82.7)
	Overall							**A (7.9)**	**A (9.4)**	**A (9.2)**						
LIE Off-Ramp (N) & Edwards Avenue	NB Left	A (9.1)	A (8.7)	B (12.1)	A (9.2)	A (8.7)	B (12.7)	A (9.4)	A (8.9)	B (13.1)	A (9.4)	A (8.9)	B (13.1)	A (9.4)	A (8.9)	B (13.1)
	NB Right	A (8.5)	A (8.4)	B (10.2)	A (8.5)	A (8.4)	B (10.3)	A (8.5)	A (8.4)	B (10.3)	A (8.5)	A (8.4)	B (10.3)	A (8.5)	A (8.4)	B (10.3)
Middle Country Road & Site Driveway	WB Left							A (9.5)	A (9.0)	A (9.3)				A (10.0)	A (9.4)	A (9.7)
	WB Left/Through										A (3.2)	A (8.2)	A (5.9)			
	EB Through/Right										A (5.1)	A (5.4)	A (5.8)			
	NB Left							C (16.8)	C (21.2)	C (19.4)	D (36.0)	C (34.9)	C (34.9)	C (18.5)	C (23.5)	C (21.3)
	NB Right							C (16.8)	B (14.7)	C (15.6)	D (41.4)	D (37.2)	D (37.2)	C (16.8)	B (14.7)	C (15.6)
	Overall										**A (4.9)**	**A (8.3)**	**A (7.2)**			

STONEFIELD

Table A2
Comparative Level of Service (Delay) Tables
X (n) = Level of Service (seconds of delay)

Intersection	Lane Group	2025 No-Build Condition A - Phase 2			2025 No-Build Condition B - Phase 2			2025 No-Build Condition C - Phase 2			2025 Build Condition A - Phase 2			2025 Build Condition B - Phase 2			2025 Build Condition C - Phase 2		
		AM Peak LOS (Delay)	PM Peak LOS (Delay)	SAT Peak LOS (Delay)	AM Peak LOS (Delay)	PM Peak LOS (Delay)	SAT Peak LOS (Delay)	AM Peak LOS (Delay)	PM Peak LOS (Delay)	SAT Peak LOS (Delay)	AM Peak LOS (Delay)	PM Peak LOS (Delay)	SAT Peak LOS (Delay)	AM Peak LOS (Delay)	PM Peak LOS (Delay)	SAT Peak LOS (Delay)	AM Peak LOS (Delay)	PM Peak LOS (Delay)	SAT Peak LOS (Delay)
Middle Country Road (E/W) & Burman Boulevard (N/S)	EB Through	A (3.8)	A (4.3)	A (3.2)	A (3.8)	A (4.3)	A (3.2)	A (3.8)	A (4.3)	A (3.2)	A (3.9)	A (4.3)	A (3.3)	A (3.9)	A (4.3)	A (3.3)	A (3.9)	A (4.3)	A (3.3)
	EB Right	A (2.6)	A (3.3)	A (2.2)	A (2.6)	A (3.3)	A (2.2)	A (2.6)	A (3.3)	A (2.2)	A (2.6)	A (3.3)	A (2.2)	A (2.6)	A (3.3)	A (2.2)	A (2.6)	A (3.3)	A (2.2)
	WB Left	A (4.7)	A (5.0)	A (3.6)	A (4.7)	A (5.0)	A (3.6)	A (4.7)	A (5.0)	A (3.6)	A (4.8)	A (5.0)	A (3.6)	A (4.8)	A (5.0)	A (3.6)	A (4.8)	A (5.0)	A (3.6)
	WB Through	A (3.1)	A (5.4)	A (3.3)	A (3.1)	A (5.4)	A (3.3)	A (3.1)	A (5.4)	A (3.3)	A (3.1)	A (5.5)	A (3.3)	A (3.1)	A (5.5)	A (3.3)	A (3.1)	A (5.5)	A (3.3)
	NB Left	D (38.3)	D (38.0)	D (35.9)	D (38.3)	D (38.0)	D (35.9)	D (38.3)	D (38.0)	D (35.9)	D (38.3)	D (38.0)	D (35.9)	D (38.3)	D (38.0)	D (35.9)	D (38.3)	D (38.0)	D (35.9)
	NB Right	D (36.8)	D (41.1)	D (36.1)	D (36.8)	D (41.1)	D (36.1)	D (36.8)	D (41.1)	D (36.1)	D (36.8)	D (41.1)	D (36.1)	D (36.8)	D (41.1)	D (36.1)	D (36.8)	D (41.1)	D (36.1)
	Overall	**A (6.1)**	**B (12.7)**	**A (5.0)**	**A (6.1)**	**B (12.7)**	**A (5.0)**	**A (6.1)**	**B (12.7)**	**A (5.0)**	**A (6.1)**	**B (12.6)**	**A (5.0)**	**A (6.1)**	**B (12.6)**	**A (5.0)**	**A (6.1)**	**B (12.6)**	**A (5.0)**
Middle Country Road (E/W) & Edwards Avenue (N/S)	EB Left	B (13.7)	C (32.9)	C (22.3)	B (13.7)	C (32.9)	C (22.3)	B (13.7)	C (32.9)	C (22.3)	B (13.6)	C (34.5)	C (23.6)	B (13.6)	C (34.5)	C (23.6)	B (13.6)	C (34.5)	C (23.6)
	EB Left/Through/Right	C (30.9)	B (13.9)	B (13.8)	C (30.9)	B (13.9)	B (13.8)	C (30.9)	B (13.9)	B (13.8)	C (32.5)	B (15.3)	B (15.8)	C (32.5)	B (15.3)	B (15.8)	C (32.5)	B (15.3)	B (15.8)
	WB Left	D (50.6)	C (22.6)	C (23.8)	D (50.6)	C (22.6)	C (23.8)	D (50.6)	C (22.6)	C (23.8)	D (52.4)	C (25.8)	C (27.6)	D (52.4)	C (25.8)	C (27.6)	D (52.4)	C (25.8)	C (27.6)
	WB Left/Through/Right	B (10.7)	B (18.8)	B (13.0)	B (10.7)	B (18.8)	B (13.0)	B (10.7)	B (18.8)	B (13.0)	B (10.6)	B (19.9)	B (13.8)	B (10.6)	B (19.9)	B (13.8)	B (10.6)	B (19.9)	B (13.8)
	NB Left	E (60.9)	C (35.0)	C (29.8)	E (60.9)	C (35.0)	C (29.8)	E (60.9)	C (35.0)	C (29.8)	F (95.4)	D (36.6)	C (30.0)	F (95.4)	D (36.6)	C (30.0)	F (95.4)	D (36.6)	C (30.0)
	NB Left/Through/Right	C (34.9)	C (23.6)	C (24.4)	C (34.9)	C (23.6)	C (24.4)	C (34.9)	C (23.6)	C (24.4)	D (35.3)	C (24.2)	C (23.8)	D (35.3)	C (24.2)	C (23.8)	D (35.3)	C (24.2)	C (23.8)
	SB Left	D (40.9)	C (26.8)	C (29.4)	D (40.9)	C (26.8)	C (29.4)	D (40.9)	C (26.8)	C (29.4)	D (41.3)	C (27.5)	C (28.9)	D (41.3)	C (27.5)	C (28.9)	D (41.3)	C (27.5)	C (28.9)
	SB Left/Through/Right	D (36.4)	C (25.3)	C (22.9)	D (36.4)	C (25.3)	C (22.9)	D (36.4)	C (25.3)	C (22.9)	D (36.8)	C (25.9)	C (22.4)	D (36.8)	C (25.9)	C (22.4)	D (36.8)	C (25.9)	C (22.4)
	Overall	**C (31.2)**	**B (20.0)**	**B (17.3)**	**C (31.2)**	**B (20.0)**	**B (17.3)**	**C (31.2)**	**B (20.0)**	**B (17.3)**	**D (36.0)**	**C (21.1)**	**B (18.3)**	**D (36.0)**	**C (21.1)**	**B (18.3)**	**D (36.0)**	**C (21.1)**	**B (18.3)**
Middle Country Road (E/W) & Fresh Pond Avenue (N/S)	EB Left				A (8.1)	B (10.0)	A (9.5)	A (8.1)	B (10.0)	A (9.5)				A (8.1)	B (10.1)	A (9.6)	A (8.1)	B (10.1)	A (9.6)
	EB Left/Through/Right	A (6.6)	A (5.7)	A (6.7)							A (6.9)	A (5.7)	A (6.8)						
	WB Left	A (3.1)	A (3.3)	A (3.6)	B (10.0)	A (9.1)	A (9.4)	B (10.0)	A (9.1)	A (9.4)	A (3.6)	A (3.4)	A (3.8)	B (10.1)	A (9.1)	A (9.4)	B (10.1)	A (9.1)	A (9.4)
	WB Through/Right	A (3.9)	A (7.9)	A (6.1)							A (3.9)	A (8.1)	A (6.1)						
	NB Left	D (36.3)	D (35.1)	D (35.1)	E (35.4)	F (166.9)	F (145.8)	E (35.4)	F (151.9)	F (137.5)	D (36.4)	D (35.3)	D (35.5)	E (36.4)	F (172.5)	F (155.0)	E (36.2)	F (161.6)	F (145.8)
	NB Through/Right	D (36.2)	D (36.0)	D (36.4)	C (16.9)	C (21.4)	C (22.0)	C (16.9)	C (20.8)	C (21.6)	D (36.2)	D (36.3)	D (36.7)	C (17.1)	C (21.9)	C (22.5)	C (17.1)	C (21.2)	C (22.0)
	SB Left/Through/Right	D (39.1)	D (36.0)	D (36.6)	C (24.2)	F (108.3)	F (101.1)	C (24.2)	F (101.7)	F (97.2)	D (39.4)	D (36.2)	D (36.9)	D (28.3)	F (132.1)	F (129.8)	D (28.2)	F (117.5)	F (121.3)
	Overall	**A (8.0)**	**A (9.5)**	**A (9.3)**							**A (8.3)**	**A (9.8)**	**A (9.7)**						
LIE Off-Ramp (N) & Edwards Avenue	NB Left	A (9.4)	A (8.9)	B (13.4)	A (9.4)	A (8.9)	B (13.4)	A (9.4)	A (8.9)	B (13.4)	A (9.6)	A (9.0)	B (13.8)	A (9.6)	A (9.0)	B (13.8)	A (9.6)	A (9.0)	B (13.8)
	NB Right	A (8.5)	A (8.4)	B (10.4)	A (8.5)	A (8.4)	B (10.4)	A (8.5)	A (8.4)	B (10.4)	A (8.5)	A (8.4)	B (10.5)	A (8.5)	A (8.4)	B (10.5)	A (8.5)	A (8.4)	B (10.5)
Middle Country Road & Site Driveway	WB Left	A (9.6)	A (9.1)	A (9.3)				B (10.0)	A (9.5)	A (9.7)	A (9.7)	A (9.1)	A (9.4)				B (10.3)	A (9.6)	A (9.8)
	WB Left/Through				A (3.3)	A (8.5)	A (6.1)							A (6.0)	A (9.6)	A (7.0)			
	EB Through/Right				A (5.3)	A (5.5)	A (6.0)							A (6.4)	A (6.0)	A (6.6)			
	NB Left	C (17.0)	C (21.6)	C (19.7)	D (36.0)	C (34.9)	C (34.9)	C (18.8)	C (24.1)	C (21.7)	C (17.8)	C (22.7)	C (20.7)	D (35.2)	D (35.3)	D (35.2)	C (20.7)	D (27.7)	C (24.9)
	NB Right	C (17.0)	B (14.9)	C (15.9)	D (41.4)	D (37.2)	D (37.2)	C (17.0)	B (14.9)	C (15.9)	C (17.5)	C (16.2)	C (17.3)	D (39.5)	D (40.4)	D (40.1)	C (17.5)	C (16.1)	C (17.3)
	Overall				**A (5.0)**	**A (8.5)**	**A (7.3)**							**A (7.0)**	**B (10.4)**	**A (9.2)**			

STONEFIELD

Table A3
Comparative Level of Service (Delay) Tables
X (n) = Level of Service (seconds of delay)

Intersection	Lane Group	2025 Mitigation Build Condition A AM Peak LOS (Delay)	2025 Mitigation Build Condition B AM Peak LOS (Delay)	2025 Mitigation Build Condition C AM Peak LOS (Delay)	2025 Build Condition D - Max Build Out AM Peak LOS (Delay)	2025 Build Condition D - Max Build Out PM Peak LOS (Delay)	2025 Build Condition D - Max Build Out SAT Peak LOS (Delay)	2025 Build Condition E - Max Build Out AM Peak LOS (Delay)	2025 Build Condition E - Max Build Out PM Peak LOS (Delay)	2025 Build Condition E - Max Build Out SAT Peak LOS (Delay)	2025 Build Condition F - Max Build Out AM Peak LOS (Delay)	2025 Build Condition F - Max Build Out PM Peak LOS (Delay)	2025 Build Condition F - Max Build Out SAT Peak LOS (Delay)
Middle Country Road (E/W) & Burman Boulevard (N/S)	EB Through				A (3.9)	A (4.5)	A (3.4)	A (3.9)	A (4.5)	A (3.4)	A (3.9)	A (4.5)	A (3.4)
	EB Right				A (2.6)	A (3.3)	A (2.2)	A (2.6)	A (3.3)	A (2.2)	A (2.6)	A (3.3)	A (2.2)
	WB Left				A (4.9)	A (5.3)	A (3.7)	A (4.9)	A (5.3)	A (3.7)	A (4.9)	A (5.3)	A (3.7)
	WB Through				A (3.1)	A (5.6)	A (3.4)	A (3.1)	A (5.6)	A (3.4)	A (3.1)	A (5.6)	A (3.4)
	NB Left				D (38.3)	D (38.0)	D (35.9)	D (38.3)	D (38.0)	D (35.9)	D (38.3)	D (38.0)	D (35.9)
	NB Right				D (36.8)	D (41.1)	D (36.1)	D (36.8)	D (41.1)	D (36.1)	D (36.8)	D (41.1)	D (36.1)
	Overall				**A (6.0)**	**B (12.4)**	**A (5.0)**	**A (6.0)**	**B (12.4)**	**A (5.0)**	**A (6.0)**	**B (12.4)**	**A (5.0)**
Middle Country Road (E/W) & Edwards Avenue (N/S)	EB Left	B (13.4)	B (13.4)	B (13.4)	B (13.6)	D (38.9)	C (30.3)	B (13.6)	D (38.9)	C (30.3)	B (13.6)	D (38.9)	C (30.3)
	EB Left/Through/Right	D (45.4)	D (45.4)	D (45.4)	D (36.8)	B (19.7)	C (23.7)	D (36.8)	B (19.7)	C (23.7)	D (36.8)	B (19.7)	C (23.7)
	WB Left	D (50.6)	D (50.6)	D (50.6)	E (56.9)	C (33.1)	D (39.0)	E (56.9)	C (33.1)	D (39.0)	E (56.9)	C (33.1)	D (39.0)
	WB Left/Through/Right	B (10.4)	B (10.4)	B (10.4)	B (10.6)	C (23.2)	B (17.8)	B (10.6)	C (23.2)	B (17.8)	B (10.6)	C (23.2)	B (17.8)
	NB Left	E (58.6)	E (58.6)	E (58.6)	F (130.2)	E (60.4)	D (44.1)	F (130.2)	E (60.4)	D (44.1)	F (130.2)	E (60.4)	D (44.1)
	NB Left/Through/Right	C (27.2)	C (27.2)	C (27.2)	D (35.3)	C (25.6)	C (27.5)	D (35.3)	C (25.6)	C (27.5)	D (35.3)	C (25.6)	C (27.5)
	SB Left	C (31.8)	C (31.8)	C (31.8)	D (41.3)	C (29.1)	C (33.7)	D (41.3)	C (29.1)	C (33.7)	D (41.3)	C (29.1)	C (33.7)
	SB Left/Through/Right	C (28.3)	C (28.3)	C (28.3)	D (36.8)	C (27.2)	C (26.0)	D (36.8)	C (27.2)	C (26.0)	D (36.8)	C (27.2)	C (26.0)
	Overall	**D (36.5)**	**D (36.5)**	**D (36.5)**	**D (42.5)**	**C (27.1)**	**C (25.1)**	**D (42.5)**	**C (27.1)**	**C (25.1)**	**D (42.5)**	**C (27.1)**	**C (25.1)**
Middle Country Road (E/W) & Fresh Pond Avenue (N/S)	EB Left							A (8.2)	B (10.3)	A (9.7)	A (8.2)	B (10.3)	A (9.7)
	EB Left/Through/Right				A (7.1)	A (6.0)	A (7.1)						
	WB Left				A (3.9)	A (4.2)	A (4.8)	B (10.1)	A (9.2)	A (9.5)	B (10.1)	A (9.2)	A (9.5)
	WB Through/Right				A (4.0)	A (8.3)	A (6.2)						
	NB Left				D (36.4)	D (36.1)	D (36.1)	E (37.6)	F (221.4)	F (189.0)	E (37.3)	F (198.1)	F (176.4)
	NB Through/Right				D (36.3)	D (36.8)	D (37.0)	C (17.3)	C (23.4)	C (24.0)	C (17.3)	C (22.7)	C (23.5)
	SB Left/Through/Right				D (39.5)	D (37.3)	D (38.0)	D (32.1)	F (288.7)	F (282.3)	D (32.1)	F (264.7)	F (260.4)
	Overall				**A (8.6)**	**B (10.5)**	**B (10.3)**						
LIE Off-Ramp (N) & Edwards Avenue	NB Left				A (9.8)	A (9.4)	C (15.9)	A (9.8)	A (9.4)	C (15.9)	A (9.8)	A (9.4)	C (15.9)
	NB Right				A (8.5)	A (8.4)	B (10.5)	A (8.5)	A (8.4)	B (10.5)	A (8.5)	A (8.4)	B (10.5)
Middle Country Road & Site Driveway	WB Left				A (9.8)	A (9.3)	A (9.6)				B (10.4)	A (9.8)	B (10.3)
	WB Left/Through							B (11.8)	F (56.4)	C (28.0)			
	EB Through/Right							A (7.8)	A (8.1)	A (8.1)			
	NB Left				C (18.5)	D (29.0)	C (24.4)	C (34.4)	C (34.8)	D (35.1)	C (21.6)	F (62.3)	E (40.4)
	NB Right				C (16.9)	C (18.3)	C (19.0)	D (36.8)	D (42.1)	D (42.3)	C (16.9)	C (18.3)	C (19.0)
	Overall							**B (10.5)**	**D (36.8)**	**C (20.5)**			

TURNING MOVEMENT COUNT DATA

National Data & Surveying Services

Intersection Turning Movement Count

Location: Edwards Ave & Middle Country Rd/New York SR 25
City: Calverton
Control: Signalized

Project ID: 20-370003-001
Date: 10/14/2020

Total

NS/EW Streets:	Edwards Ave				Edwards Ave				Middle Country Rd/New York SR 25				Middle Country Rd/New York SR 25				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	22	22	9	0	12	28	4	0	4	86	33	0	5	49	9	0	283
7:15 AM	18	21	5	0	6	36	8	0	6	107	25	0	6	61	3	0	302
7:30 AM	19	13	3	0	15	42	6	0	7	146	37	0	5	66	8	0	367
7:45 AM	23	36	2	0	6	31	12	0	7	164	28	0	8	64	7	0	388
8:00 AM	15	27	7	0	3	39	5	0	7	98	36	0	12	56	6	0	311
8:15 AM	13	27	8	0	5	27	4	0	12	118	45	0	13	53	3	0	328
8:30 AM	14	41	9	0	6	33	5	0	5	121	49	0	6	52	9	0	350
8:45 AM	14	26	13	0	9	28	10	0	9	147	42	0	2	71	9	0	380
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	138	213	56	0	62	264	54	0	57	987	295	0	57	472	54	0	2709
APPROACH %'s :	33.91%	52.33%	13.76%	0.00%	16.32%	69.47%	14.21%	0.00%	4.26%	73.71%	22.03%	0.00%	9.78%	80.96%	9.26%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	70	103	20	0	29	139	27	0	33	526	146	0	38	239	24	0	1394
PEAK HR FACTOR :	0.761	0.715	0.625	0.000	0.483	0.827	0.563	0.000	0.688	0.802	0.811	0.000	0.731	0.905	0.750	0.000	0.898
	0.791				0.774				0.886				0.953				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	33	23	9	0	10	53	15	0	10	107	23	0	10	178	16	0	487
4:15 PM	39	36	10	0	8	38	12	0	6	97	21	0	4	157	14	0	442
4:30 PM	23	27	6	0	8	66	4	0	12	103	18	0	11	171	6	0	455
4:45 PM	24	33	6	0	8	47	9	0	9	108	19	0	6	128	11	0	408
5:00 PM	27	33	6	0	17	42	8	0	10	104	19	0	6	178	11	0	461
5:15 PM	27	22	4	0	8	61	13	0	8	104	27	0	6	167	7	0	454
5:30 PM	30	33	4	0	7	40	10	0	10	103	21	0	6	142	6	0	412
5:45 PM	28	32	5	0	3	42	8	0	9	87	15	0	8	145	8	0	390
6:00 PM	25	20	8	0	4	31	9	0	8	81	13	0	3	130	7	0	339
6:15 PM	27	21	7	0	9	45	10	0	2	87	17	0	2	122	5	0	354
6:30 PM	21	17	4	0	8	29	4	0	2	59	14	0	5	88	7	0	258
6:45 PM	19	15	4	0	4	19	7	0	2	66	16	0	4	85	7	0	248
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	323	312	73	0	94	513	109	0	88	1106	223	0	71	1691	105	0	4708
APPROACH %'s :	45.62%	44.07%	10.31%	0.00%	13.13%	71.65%	15.22%	0.00%	6.21%	78.05%	15.74%	0.00%	3.80%	90.57%	5.62%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	119	119	31	0	34	204	40	0	37	415	81	0	31	634	47	0	1792
PEAK HR FACTOR :	0.763	0.826	0.775	0.000	0.850	0.773	0.667	0.000	0.771	0.961	0.880	0.000	0.705	0.890	0.734	0.000	0.920
	0.791				0.891				0.952				0.873				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fresh Pond Ave/Tractor Supply Co Dwy & Middle Country Rd/New York SR 25
City: Calverton
Control: 2-Way Stop (NB/SB)

Project ID: 20-370003-002
Date: 10/14/2020

Total

NS/EW Streets:	Fresh Pond Ave/Tractor Supply Co Dwy				Fresh Pond Ave/Tractor Supply Co Dwy				Middle Country Rd/New York SR 25				Middle Country Rd/New York SR 25				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.3	0.3	0.3	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	1	0	3	0	6	0	2	126	1	0	3	55	1	0	198
7:15 AM	0	0	2	0	1	0	3	0	5	136	2	0	3	70	2	0	224
7:30 AM	0	0	1	0	2	0	10	0	4	174	1	0	0	76	1	0	269
7:45 AM	1	0	0	0	6	0	12	0	3	192	2	0	2	79	4	0	301
8:00 AM	0	0	2	0	5	1	11	0	5	132	3	0	1	71	3	0	234
8:15 AM	1	1	1	0	3	1	8	0	3	157	0	0	2	62	2	0	241
8:30 AM	0	0	2	0	7	1	8	0	6	168	1	0	0	66	3	0	262
8:45 AM	0	0	4	0	4	1	3	0	7	173	5	0	1	77	5	0	280
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	1	13	0	31	4	61	0	35	1258	15	0	12	556	21	0	2009
APPROACH %'s :	12.50%	6.25%	81.25%	0.00%	32.29%	4.17%	63.54%	0.00%	2.68%	96.18%	1.15%	0.00%	2.04%	94.40%	3.57%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	2	1	4	0	16	2	41	0	15	655	6	0	5	288	10	0	1045
PEAK HR FACTOR :	0.500	0.250	0.500	0.000	0.667	0.500	0.854	0.000	0.750	0.853	0.500	0.000	0.625	0.911	0.625	0.000	0.868
	0.583				0.819				0.858				0.891				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.3	0.3	0.3	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	4	2	4	0	3	0	6	0	9	134	2	0	6	205	6	0	381
4:15 PM	3	0	3	0	2	0	5	0	3	107	6	0	7	204	15	0	355
4:30 PM	2	1	4	0	5	0	13	0	12	129	2	0	1	194	9	0	372
4:45 PM	2	0	5	0	1	0	7	0	3	104	2	0	2	168	8	0	302
5:00 PM	5	0	3	0	2	0	8	0	8	128	1	0	3	197	7	0	362
5:15 PM	1	1	2	0	5	1	12	0	10	123	0	0	2	204	10	0	371
5:30 PM	2	1	2	0	6	0	7	0	7	118	0	0	4	172	11	0	330
5:45 PM	3	0	2	0	2	1	7	0	6	99	0	0	3	170	5	0	298
6:00 PM	1	2	3	0	3	1	9	0	7	95	4	0	1	159	7	0	292
6:15 PM	0	0	2	0	4	0	10	0	8	93	4	0	4	136	7	1	269
6:30 PM	8	0	3	0	1	1	3	0	4	75	1	0	5	130	2	0	233
6:45 PM	4	0	1	0	2	0	0	1	5	76	1	0	3	98	5	0	196
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	35	7	34	0	36	4	87	1	82	1281	23	0	41	2037	92	1	3761
APPROACH %'s :	46.05%	9.21%	44.74%	0.00%	28.13%	3.13%	67.97%	0.78%	5.92%	92.42%	1.66%	0.00%	1.89%	93.83%	4.24%	0.05%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	11	3	16	0	11	0	31	0	27	474	12	0	16	771	38	0	1410
PEAK HR FACTOR :	0.688	0.375	0.800	0.000	0.550	0.000	0.596	0.000	0.563	0.884	0.500	0.000	0.571	0.940	0.633	0.000	0.925
	0.750				0.583				0.884				0.913				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Edwards Ave & Middle Country Rd/New York SR 25
City: Calverton
Control: Signalized

Project ID: 20-370003-001
Date: 10/17/2020

Total

NS/EW Streets:	Edwards Ave				Edwards Ave				Middle Country Rd/New York SR 25				Middle Country Rd/New York SR 25				
	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
NOON	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	25	68	8	0	10	29	3	0	8	118	22	0	7	105	16	0	419
11:15 AM	19	77	15	0	12	34	5	0	11	134	22	0	9	105	11	0	454
11:30 AM	20	75	8	0	10	31	9	0	16	145	19	0	13	103	32	0	481
11:45 AM	25	54	15	0	14	21	8	0	7	147	23	0	15	134	26	0	489
12:00 PM	16	66	9	0	22	42	10	0	8	142	18	0	16	103	22	0	474
12:15 PM	20	46	9	0	20	30	12	0	11	139	26	0	11	142	20	0	486
12:30 PM	21	54	14	0	8	44	11	0	18	128	19	0	8	129	22	0	476
12:45 PM	19	47	11	0	14	41	11	0	4	144	21	0	6	158	15	0	491
1:00 PM	25	61	12	0	6	28	11	0	16	142	26	0	11	162	21	0	521
1:15 PM	22	44	13	0	7	38	6	0	13	95	19	0	14	122	14	0	407
1:30 PM	17	57	11	0	13	39	11	0	7	154	28	0	11	139	20	0	507
1:45 PM	24	60	9	0	11	54	8	0	9	143	21	0	7	139	23	0	508
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	253	709	134	0	147	431	105	0	128	1631	264	0	128	1541	242	0	5713
APPROACH %'s :	23.08%	64.69%	12.23%	0.00%	21.52%	63.10%	15.37%	0.00%	6.33%	80.62%	13.05%	0.00%	6.70%	80.64%	12.66%	0.00%	
PEAK HR :	12:15 PM - 01:15 PM																TOTAL
PEAK HR VOL :	85	208	46	0	48	143	45	0	49	553	92	0	36	591	78	0	1974
PEAK HR FACTOR :	0.850	0.852	0.821	0.000	0.600	0.813	0.938	0.000	0.681	0.960	0.885	0.000	0.818	0.912	0.886	0.000	0.947
	0.865				0.894				0.943				0.909				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fresh Pond Ave/Tractor Supply Co Dwy & Middle Country Rd/New York SR 25
City: Calverton
Control: 2-Way Stop (NB/SB)

Project ID: 20-370003-002
Date: 10/17/2020

Total

NS/EW Streets:	Fresh Pond Ave/Tractor Supply Co Dwy				Fresh Pond Ave/Tractor Supply Co Dwy				Middle Country Rd/New York SR 25				Middle Country Rd/New York SR 25				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.3	0.3	0.3	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	8	1	5	0	7	0	9	0	9	146	9	0	7	127	2	0	330
11:15 AM	2	1	6	0	7	1	9	0	8	161	5	0	7	115	13	0	335
11:30 AM	5	3	8	0	5	2	3	0	7	170	6	0	4	114	6	0	333
11:45 AM	5	1	6	0	4	0	5	0	18	159	4	0	5	143	3	0	353
12:00 PM	5	1	4	0	6	3	13	0	10	163	7	0	2	131	10	0	355
12:15 PM	5	1	5	0	5	1	7	0	15	167	8	0	5	152	3	0	374
12:30 PM	4	3	5	0	4	0	4	0	2	138	10	0	6	132	3	0	311
12:45 PM	5	1	7	0	8	0	13	0	8	157	2	0	8	167	7	0	383
1:00 PM	5	1	6	0	7	0	10	0	13	157	5	0	5	173	8	0	390
1:15 PM	7	1	6	0	5	1	9	0	13	129	8	0	10	131	11	0	331
1:30 PM	4	0	12	0	5	1	12	0	14	157	10	0	3	143	4	0	365
1:45 PM	14	1	6	0	7	1	14	0	15	157	5	0	5	153	5	0	383
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	69	15	76	0	70	10	108	0	132	1861	79	0	67	1681	75	0	4243
APPROACH %'s :	43.13%	9.38%	47.50%	0.00%	37.23%	5.32%	57.45%	0.00%	6.37%	89.82%	3.81%	0.00%	3.68%	92.21%	4.11%	0.00%	
PEAK HR :	12:15 PM - 1:15 PM																TOTAL
PEAK HR VOL :	19	6	23	0	24	1	34	0	38	619	25	0	24	624	21	0	1458
PEAK HR FACTOR :	0.679	1.500	0.479	0.000	0.750	0.250	0.654	0.000	0.679	0.986	0.625	0.000	0.600	0.902	0.477	0.000	0.935
	0.750				0.702				0.942				0.899				

National Data & Surveying Services Intersection Turning Movement Count

Location: Burman Blvd & Middle Country Rd
City: Calverton
Control: Signalized

Project ID: 20-370009-001
Date: 12/12/2020

Data - Total

NS/EW Streets:	Burman Blvd				Burman Blvd				Middle Country Rd				Middle Country Rd				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	1	1	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	2	0	6	0	0	0	0	0	0	77	1	0	7	67	0	0	160
11:15 AM	1	0	2	0	0	0	0	0	0	70	3	0	3	57	0	0	136
11:30 AM	1	0	2	0	0	0	0	0	0	78	4	0	5	72	0	0	162
11:45 AM	4	0	6	0	0	0	0	0	0	99	3	0	3	80	0	0	195
12:00 PM	15	0	17	0	0	0	0	0	0	67	5	0	4	63	0	0	171
12:15 PM	2	0	3	0	0	0	0	0	0	81	3	0	1	72	0	0	162
12:30 PM	2	0	11	0	0	0	0	0	0	76	1	0	1	71	0	0	162
12:45 PM	7	0	1	0	0	0	0	0	0	75	5	0	2	83	0	0	173
1:00 PM	6	0	4	0	0	0	0	0	0	72	3	0	2	79	0	0	166
1:15 PM	1	0	3	0	0	0	0	0	0	73	1	0	3	78	0	0	159
1:30 PM	1	0	0	0	0	0	0	0	0	80	2	0	4	70	0	0	157
1:45 PM	0	0	3	0	0	0	0	0	0	79	1	0	1	92	0	0	176
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	42	0	58	0	0	0	0	0	0	927	32	0	36	884	0	0	1979
APPROACH %'s :	42.00%	0.00%	58.00%	0.00%					0.00%	96.66%	3.34%	0.00%	3.91%	96.09%	0.00%	0.00%	
PEAK HR :	**11:45 AM - 12:45 PM**																TOTAL
PEAK HR VOL :	23	0	37	0	0	0	0	0	0	323	12	0	9	286	0	0	690
PEAK HR FACTOR :	0.383	0.000	0.544	0.000	0.000	0.000	0.000	0.000	0.000	0.816	0.600	0.000	0.563	0.894	0.000	0.000	0.885
		0.469								0.821				0.889			

National Data & Surveying Services Intersection Turning Movement Count

Location: Edwards Ave & Middle Country Rd
City: Calverton
Control: Signalized

Project ID: 20-370009-004
Date: 12/12/2020

Data - Total

NS/EW Streets:	Edwards Ave				Edwards Ave				Middle Country Rd				Middle Country Rd				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	15	12	10	0	14	16	9	0	2	136	14	0	8	114	7	0	357
11:15 AM	14	23	3	0	13	24	15	0	9	138	18	0	11	120	10	0	398
11:30 AM	16	28	11	0	11	25	11	0	5	144	7	0	6	116	17	0	397
11:45 AM	17	19	8	0	11	32	7	0	2	168	13	0	12	129	11	0	429
12:00 PM	14	30	11	0	12	36	5	0	8	134	8	0	9	142	9	0	418
12:15 PM	18	34	14	0	10	26	5	0	8	140	19	0	7	153	14	0	448
12:30 PM	15	23	2	0	14	31	7	0	5	157	16	0	8	139	11	0	428
12:45 PM	9	32	9	0	7	24	9	0	5	140	11	0	2	158	13	0	419
1:00 PM	18	23	4	0	7	27	7	0	7	120	19	0	10	145	8	0	395
1:15 PM	17	30	11	0	11	26	4	0	15	148	17	0	9	135	11	0	434
1:30 PM	17	25	11	0	14	26	6	0	7	126	21	0	12	140	11	0	416
1:45 PM	20	23	7	0	8	27	4	0	4	148	19	0	5	132	10	0	407
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	190	302	101	0	132	320	89	0	77	1699	182	0	99	1623	132	0	4946
APPROACH %'s :	32.04%	50.93%	17.03%	0.00%	24.40%	59.15%	16.45%	0.00%	3.93%	86.77%	9.30%	0.00%	5.34%	87.54%	7.12%	0.00%	
PEAK HR :	**11:45 AM - 12:45 PM**																TOTAL
PEAK HR VOL :	64	106	35	0	47	125	24	0	23	599	56	0	36	563	45	0	1723
PEAK HR FACTOR :	0.889	0.779	0.625	0.000	0.839	0.868	0.857	0.000	0.719	0.891	0.737	0.000	0.750	0.920	0.804	0.000	0.961
	0.777				0.925				0.926				0.925				

National Data & Surveying Services Intersection Turning Movement Count

Location: Fresh Pond Ave & Middle Country Rd
City: Calverton
Control: 2-Way Stop (NB/SB)

Project ID: 20-370009-003
Date: 12/12/2020

Data - Total

NS/EW Streets:	Fresh Pond Ave				Fresh Pond Ave				Middle Country Rd				Middle Country Rd				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.3	0.3	0.3	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	3	2	6	0	3	2	4	0	8	142	9	0	11	112	6	0	308
11:15 AM	7	1	13	0	5	1	6	0	3	133	3	0	10	134	5	0	321
11:30 AM	7	1	13	0	5	1	6	0	8	153	4	0	6	123	4	0	331
11:45 AM	4	1	9	0	3	0	7	0	7	154	9	0	7	151	6	0	358
12:00 PM	6	0	6	0	6	0	3	0	3	133	3	1	1	145	6	0	313
12:15 PM	2	0	3	0	5	2	6	0	6	162	7	0	11	146	12	0	362
12:30 PM	5	2	10	0	11	0	1	0	1	153	7	0	9	139	7	0	345
12:45 PM	8	1	12	0	5	1	6	0	5	142	9	0	13	164	5	0	371
1:00 PM	5	0	13	0	5	1	8	0	6	122	7	0	12	146	3	0	328
1:15 PM	4	1	15	0	5	3	7	0	4	152	6	0	13	139	6	0	355
1:30 PM	3	4	8	0	5	2	11	0	7	143	2	0	6	140	8	0	339
1:45 PM	4	1	15	0	5	1	6	0	3	153	5	0	5	136	7	0	341
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	58	14	123	0	63	14	71	0	61	1742	71	1	104	1675	75	0	4072
APPROACH %'s :	29.74%	7.18%	63.08%	0.00%	42.57%	9.46%	47.97%	0.00%	3.25%	92.91%	3.79%	0.05%	5.61%	90.35%	4.05%	0.00%	
PEAK HR :	12:15 PM - 01:15 PM																TOTAL
PEAK HR VOL :	20	3	38	0	26	4	21	0	18	579	30	0	45	595	27	0	1406
PEAK HR FACTOR :	0.625	0.375	0.731	0.000	0.591	0.500	0.656	0.000	0.750	0.894	0.833	0.000	0.865	0.907	0.563	0.000	0.947
	0.726				0.911				0.896				0.916				

National Data & Surveying Services Intersection Turning Movement Count

Location: I-495 NB Off Ramp & Edwards Ave S
City: Calverton
Control: 1-Way Stop (NB)

Project ID: 20-370009-002
Date: 12/12/2020

Data - Total

NS/EW Streets:	I-495 NB Off Ramp				I-495 NB Off Ramp				Edwards Ave S				Edwards Ave S				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	32	0	42	0	0	0	0	0	0	32	0	0	0	65	0	0	171
11:15 AM	21	0	63	0	0	0	0	0	0	30	0	0	0	69	0	0	183
11:30 AM	37	0	60	0	0	0	0	0	0	34	0	0	0	90	0	0	221
11:45 AM	29	0	54	0	0	0	0	0	0	22	0	0	0	73	0	0	178
12:00 PM	41	0	55	0	0	0	0	0	0	30	0	0	0	81	0	0	207
12:15 PM	30	0	62	0	0	0	0	0	0	24	0	0	0	75	0	0	191
12:30 PM	30	0	61	0	0	0	0	0	0	37	0	0	0	74	0	0	202
12:45 PM	46	0	64	0	0	0	0	0	0	32	0	0	0	67	0	0	209
1:00 PM	35	0	65	0	0	0	0	0	0	22	0	0	0	83	0	0	205
1:15 PM	30	0	60	0	0	0	0	0	0	27	0	0	0	89	0	0	206
1:30 PM	35	0	70	0	0	0	0	0	0	31	0	0	0	93	0	0	229
1:45 PM	29	0	68	0	0	0	0	0	0	31	0	0	0	83	0	0	211
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	395	0	724	0	0	0	0	0	0	352	0	0	0	942	0	0	2413
APPROACH %'s :	35.30%	0.00%	64.70%	0.00%					0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	01:00 PM - 02:00 PM																TOTAL
PEAK HR VOL :	129	0	263	0	0	0	0	0	0	111	0	0	0	348	0	0	851
PEAK HR FACTOR :	0.921	0.000	0.939	0.000	0.000	0.000	0.000	0.000	0.000	0.895	0.000	0.000	0.000	0.935	0.000	0.000	0.929
	0.933								0.895				0.935				

National Data & Surveying Services Intersection Turning Movement Count

Location: Burman Blvd & Middle Country Rd
City: Calverton
Control: Signalized

Project ID: 20-370009-001
Date: 12/15/2020

Data - Total

NS/EW Streets:	Burman Blvd				Burman Blvd				Middle Country Rd				Middle Country Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	1	1	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	6	0	5	0	0	0	0	0	0	52	7	0	11	31	0	0	112
7:15 AM	3	0	8	0	0	0	0	0	0	84	4	0	16	39	0	0	154
7:30 AM	3	0	4	0	0	0	0	0	0	86	10	0	9	50	0	0	162
7:45 AM	3	0	4	0	0	0	0	0	0	80	19	0	9	38	0	0	153
8:00 AM	2	0	5	0	0	0	0	0	0	69	16	0	6	42	0	0	140
8:15 AM	4	0	3	0	0	0	0	0	0	57	4	0	10	43	0	0	121
8:30 AM	2	0	4	0	0	0	0	0	0	83	8	0	12	35	0	0	144
8:45 AM	5	0	10	0	0	0	0	0	0	65	7	0	7	44	0	0	138
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	28	0	43	0	0	0	0	0	0	576	75	0	80	322	0	0	1124
APPROACH %'s :	39.44%	0.00%	60.56%	0.00%					0.00%	88.48%	11.52%	0.00%	19.90%	80.10%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	11	0	21	0	0	0	0	0	0	319	49	0	40	169	0	0	609
PEAK HR FACTOR :	0.917	0.000	0.656	0.000	0.000	0.000	0.000	0.000	0.000	0.927	0.645	0.000	0.625	0.845	0.000	0.000	0.940
	0.727								0.929				0.886				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	1	1	0	1	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	13	0	11	0	0	0	0	0	0	67	2	0	2	110	0	0	205
4:15 PM	10	0	6	0	0	0	0	0	0	65	4	0	7	94	0	0	186
4:30 PM	29	0	21	0	0	0	0	0	0	83	2	0	3	101	0	0	239
4:45 PM	14	0	8	0	0	0	0	0	0	64	2	0	7	135	0	0	230
5:00 PM	16	0	22	0	0	0	0	0	0	65	4	0	5	109	0	0	221
5:15 PM	7	0	14	0	0	0	0	0	0	68	0	0	5	114	0	0	208
5:30 PM	7	0	10	0	0	0	0	0	0	57	3	0	7	72	0	0	156
5:45 PM	5	0	8	0	0	0	0	0	0	58	4	0	1	102	0	0	178
6:00 PM	2	0	5	0	0	0	0	0	0	44	0	0	2	63	0	1	117
6:15 PM	0	0	6	0	0	0	0	0	0	44	0	0	3	72	0	0	125
6:30 PM	4	0	4	0	0	0	0	0	0	41	1	0	3	68	0	0	121
6:45 PM	3	0	1	0	0	0	0	0	0	34	0	0	2	48	0	0	88
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	110	0	116	0	0	0	0	0	0	690	22	0	47	1088	0	1	2074
APPROACH %'s :	48.67%	0.00%	51.33%	0.00%					0.00%	96.91%	3.09%	0.00%	4.14%	95.77%	0.00%	0.09%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	66	0	65	0	0	0	0	0	0	280	8	0	20	459	0	0	898
PEAK HR FACTOR :	0.569	0.000	0.739	0.000	0.000	0.000	0.000	0.000	0.000	0.843	0.500	0.000	0.714	0.850	0.000	0.000	0.939
	0.655								0.847				0.843				

National Data & Surveying Services Intersection Turning Movement Count

Location: Edwards Ave & Middle Country Rd
City: Calverton
Control: Signalized

Project ID: 20-370009-004
Date: 12/15/2020

Data - Total

NS/EW Streets:	Edwards Ave				Edwards Ave				Middle Country Rd				Middle Country Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	18	20	4	0	9	22	5	0	11	83	26	0	4	52	6	0	260
7:15 AM	7	23	3	0	15	30	5	0	6	114	39	0	8	66	8	0	324
7:30 AM	15	16	8	0	14	28	7	0	6	172	42	0	7	61	7	0	383
7:45 AM	15	42	7	0	6	41	11	0	3	158	36	0	8	64	5	0	396
8:00 AM	22	29	5	0	7	41	6	0	3	87	25	0	8	48	6	0	287
8:15 AM	15	22	4	0	7	36	5	0	7	113	35	0	7	53	3	0	307
8:30 AM	17	23	8	0	16	33	9	0	7	116	33	0	6	60	13	0	341
8:45 AM	17	30	8	0	11	41	5	0	8	169	38	0	7	70	6	0	410
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	126	205	47	0	85	272	53	0	51	1012	274	0	55	474	54	0	2708
APPROACH %'s :	33.33%	54.23%	12.43%	0.00%	20.73%	66.34%	12.93%	0.00%	3.81%	75.69%	20.49%	0.00%	9.43%	81.30%	9.26%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	59	110	23	0	42	140	29	0	18	531	142	0	31	239	26	0	1390
PEAK HR FACTOR :	0.670	0.655	0.719	0.000	0.700	0.854	0.659	0.000	0.750	0.772	0.845	0.000	0.969	0.905	0.813	0.000	0.878
	0.750				0.909				0.785				0.902				

NS/EW Streets:	Edwards Ave				Edwards Ave				Middle Country Rd				Middle Country Rd				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	32	24	12	0	5	38	10	0	6	114	23	0	15	162	11	0	452
4:15 PM	39	23	12	0	11	33	11	0	9	123	19	0	13	185	10	0	488
4:30 PM	26	25	11	0	9	56	7	0	10	128	21	0	9	198	7	0	507
4:45 PM	35	30	12	0	16	36	6	0	11	96	26	0	8	185	14	0	475
5:00 PM	21	22	6	0	8	47	9	0	9	121	26	0	8	193	7	0	477
5:15 PM	36	32	12	0	12	47	8	0	10	119	18	0	9	161	7	0	471
5:30 PM	27	28	6	0	9	34	11	0	1	107	25	0	12	141	15	0	416
5:45 PM	29	17	9	0	8	23	4	0	7	108	13	0	2	170	22	0	412
6:00 PM	21	18	6	0	8	18	0	0	5	81	17	0	9	128	9	0	320
6:15 PM	22	16	5	0	6	9	3	0	9	88	14	0	6	118	7	0	303
6:30 PM	22	11	3	0	5	17	1	0	5	76	9	0	5	109	11	0	274
6:45 PM	27	11	5	0	6	8	7	0	3	62	11	0	5	98	1	0	244
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	337	257	99	0	103	366	77	0	85	1223	222	0	101	1848	121	0	4839
APPROACH %'s :	48.63%	37.09%	14.29%	0.00%	18.86%	67.03%	14.10%	0.00%	5.56%	79.93%	14.51%	0.00%	4.88%	89.28%	5.85%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	121	100	41	0	44	172	33	0	39	468	92	0	38	761	38	0	1947
PEAK HR FACTOR :	0.776	0.833	0.854	0.000	0.688	0.768	0.750	0.000	0.886	0.914	0.885	0.000	0.731	0.961	0.679	0.000	0.960
	0.851				0.865				0.942				0.978				

National Data & Surveying Services Intersection Turning Movement Count

Location: Fresh Pond Ave & Middle Country Rd
City: Calverton
Control: 2-Way Stop (NB/SB)

Project ID: 20-370009-003
Date: 12/22/2020

Data - Total

NS/EW Streets:	Fresh Pond Ave				Fresh Pond Ave				Middle Country Rd				Middle Country Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.3	0.3	0.3	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	2	0	4	0	2	108	0	0	2	50	2	0	170
7:15 AM	0	0	1	0	2	0	9	0	5	127	0	0	2	67	2	0	215
7:30 AM	0	0	1	0	1	0	9	0	2	170	2	0	0	70	3	0	258
7:45 AM	0	0	0	0	3	0	9	0	3	161	1	0	0	68	5	0	250
8:00 AM	2	0	0	0	5	0	9	0	2	130	3	0	1	73	3	0	228
8:15 AM	2	0	1	0	6	0	8	0	5	136	4	0	4	68	3	0	237
8:30 AM	1	1	4	0	4	0	5	0	3	128	2	0	9	80	0	0	237
8:45 AM	3	0	3	0	4	0	4	0	4	188	4	0	4	57	5	0	276
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	8	1	10	0	27	0	57	0	26	1148	16	0	22	533	23	0	1871
APPROACH %'s :	42.11%	5.26%	52.63%	0.00%	32.14%	0.00%	67.86%	0.00%	2.18%	96.47%	1.34%	0.00%	3.81%	92.21%	3.98%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	8	1	8	0	19	0	26	0	14	582	13	0	18	278	11	0	978
PEAK HR FACTOR :	0.667	0.250	0.500	0.000	0.792	0.000	0.722	0.000	0.700	0.774	0.813	0.000	0.500	0.869	0.550	0.000	0.886
	0.708				0.804				0.777				0.862				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.3	0.3	0.3	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	4	1	5	0	6	0	6	0	3	127	3	0	3	202	8	0	368
4:15 PM	7	1	7	0	6	3	12	0	9	127	3	0	5	211	5	0	396
4:30 PM	5	3	0	0	3	0	5	0	7	154	5	0	6	199	9	0	396
4:45 PM	5	2	6	0	5	1	6	0	7	138	10	0	7	190	9	0	386
5:00 PM	6	0	8	0	11	1	4	0	2	148	3	0	7	206	6	0	402
5:15 PM	8	0	4	0	4	2	6	0	3	128	2	0	8	195	2	0	362
5:30 PM	6	1	3	0	1	0	5	0	7	127	3	0	4	213	5	0	375
5:45 PM	4	0	7	0	4	0	2	0	6	98	4	0	2	156	10	0	293
6:00 PM	2	1	3	0	5	2	5	0	4	97	4	0	6	172	7	0	308
6:15 PM	4	0	3	0	3	1	2	0	8	106	4	0	8	163	8	0	310
6:30 PM	5	0	9	0	2	0	4	0	6	82	6	0	4	123	2	0	243
6:45 PM	6	0	3	0	5	0	1	0	3	78	1	0	5	122	5	0	229
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	62	9	58	0	55	10	58	0	65	1410	48	0	65	2152	76	0	4068
APPROACH %'s :	48.06%	6.98%	44.96%	0.00%	44.72%	8.13%	47.15%	0.00%	4.27%	92.58%	3.15%	0.00%	2.83%	93.85%	3.31%	0.00%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	23	6	21	0	25	5	27	0	25	567	21	0	25	806	29	0	1580
PEAK HR FACTOR :	0.821	0.500	0.656	0.000	0.568	0.417	0.563	0.000	0.694	0.920	0.525	0.000	0.893	0.955	0.806	0.000	0.983
	0.833				0.679				0.923				0.973				

National Data & Surveying Services Intersection Turning Movement Count

Location: I-495 NB Off Ramp & Edwards Ave S
City: Calverton
Control: 1-Way Stop (NB)

Project ID: 20-370009-002
Date: 12/15/2020

Data - Total

NS/EW Streets:	I-495 NB Off Ramp				I-495 NB Off Ramp				Edwards Ave S				Edwards Ave S				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	32	0	44	0	0	0	0	0	0	56	0	0	0	70	0	0	202
7:15 AM	31	0	55	0	0	0	0	0	0	58	0	0	0	80	0	0	224
7:30 AM	23	0	69	0	0	0	0	0	0	60	0	0	0	83	0	0	235
7:45 AM	58	0	74	0	0	0	0	0	0	72	0	0	0	65	0	0	269
8:00 AM	43	0	68	0	0	0	0	0	0	42	0	0	0	77	0	0	230
8:15 AM	37	0	84	0	0	0	0	0	0	58	0	0	0	77	0	0	256
8:30 AM	48	0	84	0	0	0	0	0	0	64	0	0	0	67	0	0	263
8:45 AM	39	0	81	0	0	0	0	0	0	57	0	0	0	81	0	0	258
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	311	0	559	0	0	0	0	0	0	467	0	0	0	600	0	0	1937
APPROACH %'s :	35.75%	0.00%	64.25%	0.00%					0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	186	0	310	0	0	0	0	0	0	236	0	0	0	286	0	0	1018
PEAK HR FACTOR :	0.802	0.000	0.923	0.000	0.000	0.000	0.000	0.000	0.000	0.819	0.000	0.000	0.000	0.929	0.000	0.000	0.946
	0.939									0.819				0.929			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0	1	0	0	0	0	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	35	0	47	0	0	0	0	0	0	34	0	0	0	163	0	0	279
4:15 PM	24	0	51	0	0	0	0	0	0	33	0	0	0	164	0	0	272
4:30 PM	29	0	51	0	0	0	0	0	0	53	0	0	0	140	0	0	273
4:45 PM	23	0	59	0	0	0	0	0	0	49	0	0	0	123	0	0	254
5:00 PM	22	0	45	0	0	0	0	0	0	35	0	0	0	154	0	0	256
5:15 PM	35	0	49	0	0	0	0	0	0	37	0	0	0	155	0	0	276
5:30 PM	22	0	50	0	0	0	0	0	0	45	0	0	0	106	0	0	223
5:45 PM	23	0	41	0	0	0	0	0	0	22	0	0	0	105	0	0	191
6:00 PM	21	0	41	0	0	0	0	0	0	37	0	0	0	92	0	0	191
6:15 PM	18	0	44	0	0	0	0	0	0	24	0	0	0	93	0	0	179
6:30 PM	17	0	32	0	0	0	0	0	0	23	0	0	0	68	0	0	140
6:45 PM	19	0	51	0	0	0	0	0	0	11	0	0	0	59	0	0	140
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	288	0	561	0	0	0	0	0	0	403	0	0	0	1422	0	0	2674
APPROACH %'s :	33.92%	0.00%	66.08%	0.00%					0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	111	0	208	0	0	0	0	0	0	169	0	0	0	590	0	0	1078
PEAK HR FACTOR :	0.793	0.000	0.881	0.000	0.000	0.000	0.000	0.000	0.000	0.797	0.000	0.000	0.000	0.899	0.000	0.000	0.966
	0.973									0.797				0.899			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fresh Pond Ave & Middle Country Rd
City: Calverton
Control: 2-Way Stop(NB/SB)

Project ID: 21-370041-001
Date: 10/7/2021

Data - Total

NS/EW Streets:	Fresh Pond Ave				Fresh Pond Ave				Middle Country Rd				Middle Country Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	1	0	7	0	7	0	7	116	0	0	4	63	4	0	209
7:15 AM	0	0	0	0	8	0	6	0	4	153	0	0	1	87	8	0	267
7:30 AM	0	0	1	0	4	0	7	0	5	223	1	0	2	80	1	0	324
7:45 AM	1	0	1	0	8	1	15	0	6	155	0	0	0	81	5	0	273
8:00 AM	0	1	1	0	2	0	15	0	8	142	2	0	5	71	4	0	251
8:15 AM	2	1	2	0	5	1	5	0	8	148	1	0	2	78	3	0	256
8:30 AM	2	0	2	0	10	0	4	0	9	177	2	0	4	75	2	0	287
8:45 AM	2	0	2	0	9	0	7	0	7	183	2	0	1	75	6	0	294
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	7	2	10	0	53	2	66	0	54	1297	8	0	19	610	33	0	2161
APPROACH %'s :	36.84%	10.53%	52.63%	0.00%	43.80%	1.65%	54.55%	0.00%	3.97%	95.44%	0.59%	0.00%	2.87%	92.15%	4.98%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	1	1	3	0	22	1	43	0	23	673	3	0	8	319	18	0	1115
PEAK HR FACTOR :	0.250	0.250	0.750	0.000	0.688	0.250	0.717	0.000	0.719	0.754	0.375	0.000	0.400	0.917	0.563	0.000	0.860
	0.625				0.688				0.763				0.898				

NS/EW Streets:	Fresh Pond Ave				Fresh Pond Ave				Middle Country Rd				Middle Country Rd				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	7	1	5	0	1	1	8	0	8	111	4	0	4	183	7	0	340
4:15 PM	3	0	2	0	3	1	11	0	4	114	5	0	2	197	11	0	353
4:30 PM	3	0	3	0	2	1	4	0	17	123	2	0	4	213	9	0	381
4:45 PM	5	0	4	0	5	0	6	0	14	111	5	0	7	182	10	0	349
5:00 PM	4	1	1	0	6	0	7	0	6	107	0	0	7	192	12	0	343
5:15 PM	4	0	5	0	5	0	8	0	6	122	3	0	4	210	3	0	370
5:30 PM	5	0	3	0	5	1	10	0	13	107	3	0	5	154	5	0	311
5:45 PM	8	1	2	0	7	0	9	0	7	107	3	0	3	180	5	0	332
6:00 PM	3	0	5	0	4	0	10	0	7	95	5	0	2	163	8	0	302
6:15 PM	1	0	1	0	7	0	3	0	6	86	4	0	2	136	6	0	252
6:30 PM	6	0	7	0	7	0	5	0	4	93	1	0	5	153	9	0	290
6:45 PM	3	1	1	0	3	0	5	0	1	89	1	0	2	105	4	0	215
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	52	4	39	0	55	4	86	0	93	1265	36	0	47	2068	89	0	3838
APPROACH %'s :	54.74%	4.21%	41.05%	0.00%	37.93%	2.76%	59.31%	0.00%	6.67%	90.75%	2.58%	0.00%	2.13%	93.83%	4.04%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	16	1	13	0	18	1	25	0	43	463	10	0	22	797	34	0	1443
PEAK HR FACTOR :	0.800	0.250	0.650	0.000	0.750	0.250	0.781	0.000	0.632	0.941	0.500	0.000	0.786	0.935	0.708	0.000	0.947
	0.833				0.846				0.908				0.944				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Fresh Pond Ave & Middle Country Rd
City: Calverton
Control: 2-Way Stop(NB/SB)

Project ID: 21-370041-001
Date: 10/9/2021

Data - Total

NS/EW Streets:	Fresh Pond Ave				Fresh Pond Ave				Middle Country Rd				Middle Country Rd				
NOON	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
11:00 AM	6	0	7	0	7	0	6	0	15	134	8	0	8	106	10	0	307
11:15 AM	4	0	10	0	11	0	10	0	21	158	9	0	8	126	7	0	364
11:30 AM	10	1	6	0	13	0	6	0	21	147	12	0	7	117	11	0	351
11:45 AM	6	0	14	0	9	0	14	0	24	136	10	0	11	123	9	0	356
12:00 PM	6	2	6	0	5	0	15	0	18	152	11	0	5	136	15	0	371
12:15 PM	11	1	10	0	7	0	10	0	13	135	11	0	11	140	10	0	359
12:30 PM	11	0	6	0	4	0	17	0	24	141	7	0	9	169	11	0	399
12:45 PM	10	2	8	0	16	1	11	0	13	151	9	0	8	127	12	0	368
1:00 PM	7	2	7	0	12	3	13	0	8	160	5	0	2	141	17	0	377
1:15 PM	6	0	7	0	13	0	15	0	20	154	2	0	3	135	13	0	368
1:30 PM	3	0	2	0	12	0	8	0	22	154	10	0	4	141	10	0	366
1:45 PM	3	1	3	0	5	2	10	0	18	150	7	0	3	151	10	0	363
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	83	9	86	0	114	6	135	0	217	1772	101	0	79	1612	135	0	4349
APPROACH %'s :	46.63%	5.06%	48.31%	0.00%	44.71%	2.35%	52.94%	0.00%	10.38%	84.78%	4.83%	0.00%	4.33%	88.28%	7.39%	0.00%	
PEAK HR :	12:30 PM - 01:30 PM																TOTAL
PEAK HR VOL :	34	4	28	0	45	4	56	0	65	606	23	0	22	572	53	0	1512
PEAK HR FACTOR :	0.773	0.500	0.875	0.000	0.703	0.333	0.824	0.000	0.677	0.947	0.639	0.000	0.611	0.846	0.779	0.000	0.947
	0.825				0.938				0.986				0.856				

AUTOMATIC TRAFFIC RECORDER DATA

VOLUME

Middle Country Rd 490' W/O Service Ln

Day: Tuesday
Date: 12/15/2020

City: Calverton
Project #: NY20_370010_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,622	4,550	9,172

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
00:00	0	0	8		7		15		12:00	0	0	66		80		146	
00:15	0	0	7		5		12		12:15	0	0	87		75		162	
00:30	0	0	3		8		11		12:30	0	0	87		85		172	
00:45	0	0	3	21	8	28	11	49	12:45	0	0	92	332	64	304	156	636
01:00	0	0	2		2		4		13:00	0	0	83		72		155	
01:15	0	0	1		2		3		13:15	0	0	89		79		168	
01:30	0	0	1		4		5		13:30	0	0	77		70		147	
01:45	0	0	1	5	0	8	1	13	13:45	0	0	69	318	85	306	154	624
02:00	0	0	0		2		2		14:00	0	0	101		92		193	
02:15	0	0	2		0		2		14:15	0	0	89		85		174	
02:30	0	0	8		1		9		14:30	0	0	72		101		173	
02:45	0	0	7	17	3	6	10	23	14:45	0	0	73	335	101	379	174	714
03:00	0	0	2		4		6		15:00	0	0	99		97		196	
03:15	0	0	2		2		4		15:15	0	0	74		101		175	
03:30	0	0	6		4		10		15:30	0	0	83		148		231	
03:45	0	0	8	18	1	11	9	29	15:45	0	0	75	331	109	455	184	786
04:00	0	0	8		2		10		16:00	0	0	69		114		183	
04:15	0	0	11		8		19		16:15	0	0	73		111		184	
04:30	0	0	13		11		24		16:30	0	0	88		143		231	
04:45	0	0	22	54	10	31	32	85	16:45	0	0	68	298	154	522	222	820
05:00	0	0	16		5		21		17:00	0	0	68		118		186	
05:15	0	0	24		9		33		17:15	0	0	73		130		203	
05:30	0	0	57		10		67		17:30	0	0	62		81		143	
05:45	0	0	66	163	16	40	82	203	17:45	0	0	65	268	106	435	171	703
06:00	0	0	58		21		79		18:00	0	0	48		66		114	
06:15	0	0	69		27		96		18:15	0	0	42		70		112	
06:30	0	0	82		30		112		18:30	0	0	44		75		119	
06:45	0	0	110	319	34	112	144	431	18:45	0	0	34	168	48	259	82	427
07:00	0	0	70		37		107		19:00	0	0	41		59		100	
07:15	0	0	84		41		125		19:15	0	0	33		46		79	
07:30	0	0	107		58		165		19:30	0	0	29		52		81	
07:45	0	0	98	359	41	177	139	536	19:45	0	0	26	129	32	189	58	318
08:00	0	0	87		41		128		20:00	0	0	23		61		84	
08:15	0	0	64		48		112		20:15	0	0	24		45		69	
08:30	0	0	102		37		139		20:30	0	0	16		34		50	
08:45	0	0	68	321	47	173	115	494	20:45	0	0	18	81	44	184	62	265
09:00	0	0	75		34		109		21:00	0	0	17		47		64	
09:15	0	0	66		44		110		21:15	0	0	22		35		57	
09:30	0	0	70		53		123		21:30	0	0	18		27		45	
09:45	0	0	81	292	49	180	130	472	21:45	0	0	17	74	27	136	44	210
10:00	0	0	59		37		96		22:00	0	0	15		26		41	
10:15	0	0	86		58		144		22:15	0	0	12		18		30	
10:30	0	0	91		63		154		22:30	0	0	17		18		35	
10:45	0	0	75	311	65	223	140	534	22:45	0	0	12	56	15	77	27	133
11:00	0	0	85		47		132		23:00	0	0	19		17		36	
11:15	0	0	71		65		136		23:15	0	0	7		12		19	
11:30	0	0	83		84		167		23:30	0	0	7		13		20	
11:45	0	0	68	307	69	265	137	572	23:45	0	0	12	45	8	50	20	95
TOTALS				2187		1254		3441	TOTALS				2435		3296		5731
SPLIT %				63.6%		36.4%		37.5%	SPLIT %				42.5%		57.5%		62.5%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	4,622	4,550	9,172

AM Peak Hour			07:15	11:45	11:45	PM Peak Hour			12:30	16:30	16:30
AM Pk Volume			376	309	617	PM Pk Volume			351	545	842
Pk Hr Factor			0.879	0.909	0.897	Pk Hr Factor			0.954	0.885	0.911
7 - 9 Volume	0	0	680	350	1030	4 - 6 Volume	0	0	566	957	1523
7 - 9 Peak Hour			07:15	07:30	07:15	4 - 6 Peak Hour			16:00	16:30	16:30
7 - 9 Pk Volume	0	0	376	188	557	4 - 6 Pk Volume	0	0	298	545	842
Pk Hr Factor	0.000	0.000	0.879	0.810	0.844	Pk Hr Factor	0.000	0.000	0.847	0.885	0.911

STATION: **70041**

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #:	**NY25**	ROAD NAME:	**MIDDLE COUNTRY ROAD**	FROM :	**RT25A**	TO:	**EDWARDS AVE**
DIRECTION:		PLACEMENT:	**487ft West of Service Ln**	COUNTY:	**SUFFOLK**	TOWN:	**RIVERHEAD**
DATE OF COUNT	**Jun-2016**	REF MARKER:		JURISDICTION:	**NYSDOT**		

Interval Start Time	EASTBOUND	WESTBOUND	TOTAL
12:00 AM	23	37	60
1:00 AM	17	22	39
2:00 AM	14	20	34
3:00 AM	18	13	31
4:00 AM	33	25	58
5:00 AM	129	53	182
6:00 AM	309	115	424
7:00 AM	**404**	**209**	**613**
8:00 AM	395	202	597
9:00 AM	275	173	448
10:00 AM	271	203	474
11:00 AM	284	246	530
12:00 PM	301	280	581
1:00 PM	287	272	559
2:00 PM	289	311	600
3:00 PM	282	418	700
4:00 PM	308	441	749
5:00 PM	276	435	711
6:00 PM	218	295	513
7:00 PM	136	231	367
8:00 PM	136	185	321
9:00 PM	106	193	299
10:00 PM	79	107	186
11:00 PM	41	67	108

STATION: **70041**

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #:	**NY25**	ROAD NAME:	**MIDDLE COUNTRY ROAD**	FROM :	**RT25A**	TO:	**EDWARDS AVE**
DIRECTION:		PLACEMENT:	**490ft West of Service Ln**	COUNTY:	**SUFFOLK**	TOWN:	**RIVERHEAD**
DATE OF COUNT	**Dec-2018**	REF MARKER:		JURISDICTION:	**NYSDOT**		

Interval Start Time	EASTBOUND	WESTBOUND	TOTAL
12:00 AM	18	29	47
1:00 AM	17	15	32
2:00 AM	12	12	24
3:00 AM	22	12	34
4:00 AM	37	21	58
5:00 AM	116	53	169
6:00 AM	371	106	477
7:00 AM	**414**	**214**	**628**
8:00 AM	368	184	552
9:00 AM	292	176	468
10:00 AM	266	194	460
11:00 AM	280	228	508
12:00 PM	305	287	592
1:00 PM	265	280	545
2:00 PM	262	322	584
3:00 PM	294	450	744
4:00 PM	285	445	730
5:00 PM	255	400	655
6:00 PM	155	274	429
7:00 PM	114	190	304
8:00 PM	84	145	229
9:00 PM	67	126	193
10:00 PM	70	85	155
11:00 PM	37	53	90

NYSDOT ADJUSTMENT FACTORS FOR TRAFFIC COUNT PROCESSING 2017

SEASONAL ADJUSTMENT FACTORS FOR TRAFFIC COUNT PROCESSING 2017

Based on Continuous Count Site Data 2014 – 2016

FULL WEEK

FACTOR GROUP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
urban - 30	0.879	0.905	0.966	1.016	1.052	1.069	1.047	1.054	1.039	1.033	0.976	0.964
suburban - 40	0.782	0.804	0.868	0.948	1.076	1.132	1.230	1.224	1.097	1.035	0.927	0.876
recreational - 60	0.627	0.669	0.692	0.787	1.059	1.271	1.639	1.598	1.200	0.997	0.762	0.698

Factor Group	% Precision with 95% Confidence
urban - 30	0.85%
suburban - 40	1.38%
recreational - 60	5.48%

For each factor group, the percent precision value is the maximum value out of all months.

The FHWA Traffic Monitoring Guide 2016 states (page 3-27):

The reliability levels recommended are 10 percent precision with 95 percent confidence for each individual seasonal group, excluding recreational groups where no precision requirement is specified.

New York State Department of
Transportation
Highway Data Services Bureau
MO-TrafficDataViewer@dot.ny.gov
(518) 457-1965

SEASONAL ADJUSTMENT FACTORS FOR TRAFFIC COUNT PROCESSING 2017

Based on Continuous Count Site Data 2014 – 2016

WEEKEND

FACTOR GROUP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
urban - 30	0.760	0.794	0.848	0.895	0.944	0.952	0.918	0.937	0.927	0.908	0.864	0.830
suburban - 40	0.709	0.737	0.808	0.887	1.038	1.125	1.253	1.243	1.080	0.987	0.867	0.790
recreational - 60	0.617	0.674	0.679	0.770	1.119	1.412	1.879	1.813	1.337	1.053	0.740	0.656

Factor Group	% Precision with 95% Confidence
urban - 30	2.17%
suburban - 40	2.57%
recreational - 60	6.60%

For each factor group, the percent precision value is the maximum value out of all months.

The FHWA Traffic Monitoring Guide 2016 states (page 3-27):

The reliability levels recommended are 10 percent precision with 95 percent confidence for each individual seasonal group, excluding recreational groups where no precision requirement is specified.

New York State Department of
Transportation
Highway Data Services Bureau
MO-TrafficDataViewer@dot.ny.gov
(518) 457-1965

SEASONAL ADJUSTMENT FACTORS FOR TRAFFIC COUNT PROCESSING 2017

Based on Continuous Count Site Data 2014 – 2016

WORK WEEK

FACTOR GROUP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
urban - 30	0.923	0.944	1.009	1.062	1.093	1.113	1.101	1.100	1.078	1.078	1.018	1.019
suburban - 40	0.808	0.822	0.884	0.958	1.071	1.113	1.201	1.190	1.079	1.035	0.942	0.912
recreational - 60	0.634	0.654	0.696	0.778	1.003	1.170	1.500	1.459	1.086	0.943	0.764	0.718

Factor Group	% Precision with 95% Confidence
urban - 30	1.05%
suburban - 40	1.49%
recreational - 60	5.99%

For each factor group, the percent precision value is the maximum value out of all months.

The FHWA Traffic Monitoring Guide 2016 states (page 3-27):

The reliability levels recommended are 10 percent precision with 95 percent confidence for each individual seasonal group, excluding recreational groups where no precision requirement is specified.

New York State Department of
Transportation
Highway Data Services Bureau
MO-TrafficDataViewer@dot.ny.gov
(518) 457-1965

MOTOR VEHICLE COLLISION SUMMARY TABLES

STONEFIELD

Table B1
3-Year Motor Vehicle Collision Summary Table
February 1, 2017 - January 31, 2020

Location	Collision Type	Number of Collisions	Collisions Resulting in Injury	Collisions Resulting in Fatality
Intersection of Middle Country Road and Burman Blvd	Rear End	2	0	0
	Collision with Animal	1	0	0
	Total	**3**	**0**	**0**
Middle Country Road between Burman Blvd and NYS Route 25A	Rear End	4	2	0
	Collision with Animal	3	0	0
	Right Angle	1	0	0
	Right Turn (Against Other Car)	1	0	0
	Right Turn (With Other Car)	1	0	0
	Left Turn (Against Other Car)	1	1	0
	Total	**11**	**3**	**0**
Intersection of Middle Country Road and NYS Route 25A	Rear End	6	2	0
	Collision with Fixed Object	3	0	0
	Collision with Animal	2	0	0
	Right Angle	1	1	0
	Right Turn (Against Other Car)	1	0	0
	Sideswipe	2	1	0
	Total	**15**	**4**	**0**
Middle Country Road between NYS Route 25A and Timber Drive	Rear End	3	1	0
	Collision with Animal	2	0	0
	Right Angle	2	1	0
	Overturned	1	0	0
	Total	**8**	**2**	**0**
Intersection of Middle Country Road and Timber Drive	Rear End	2	1	0
	Total	**2**	**1**	**0**
Middle Country Road between Timber Drive and Fresh Pond Avenue	Collision with Fixed Object	4	2	0
	Rear End	3	2	0
	Collision with Animal	2	0	0
	Overtaking	1	0	0
	Total	**10**	**4**	**0**
Intersection of Middle Country Road and Fresh Pond Avenue	Rear End	2	2	0
	Right Angle	1	1	0
	Total	**3**	**3**	**0**
Middle Country Road between Fresh Pond Avenue and Edwards Avenue	Rear End	10	4	0
	Collision with Animal	10	0	0
	Collision with Fixed Object	5	1	0
	Left Turn	2	1	0
	Right Angle	2	0	0
	Sideswipe	2	1	0
	Total	**31**	**7**	**0**

STONEFIELD

Table B1 - Cont.
3-Year Motor Vehicle Collision Summary Table
February 1, 2017 - January 31, 2020

Location	Collision Type	Number of Collisions	Collisions Resulting in Injury	Collisions Resulting in Fatality
Intersection of Middle Country Road and Edwards Avenue	Rear End	16	6	0
	Right Angle	7	2	0
	Left Turn (With Other Car)	3	3	0
	Left Turn (Against Other Car)	2	1	0
	Overtaking	2	1	0
	Backing	2	0	0
	Head On	1	0	0
	Right Turn (With Other Car)	1	0	0
	Sideswipe	1	0	0
	Total	**35**	**13**	**0**
Edwards Avenue between Middle Country Road and River Road	Rear End	4	2	0
	Collision with Animal	3	1	0
	Collision with Fixed Object	2	0	0
	Left Turn (With Other Car)	1	0	0
	Overtaking	1	0	0
	Right Angle	1	0	0
	Sideswipe	1	1	0
	Total	**13**	**4**	**0**
Intersection of Edwards Avenue and River Road	Right Angle	4	4	0
	Rear End	4	1	0
	Collision with Fixed Object	3	0	0
	Left Turn (Against Other Car)	1	1	0
	Overtaking	1	0	0
	Collision with Bicyclist	1	1	0
	Sideswipe	1	1	0
	Total	**15**	**8**	**0**
Intersection of Edwards Avenue and Mill Road	Overtaking	1	0	0
	Rear End	1	1	0
	Total	**2**	**1**	**0**
Intersection of Edwards Avenue and LIE East Exit Ramp	Right Angle	12	5	0
	Rear End	10	0	0
	Overtaking	5	0	0
	Left Turn (Against Other Car)	3	0	0
	Collision with Fixed Object	3	0	0
	Total	**33**	**5**	**0**
Network Total		**181**	**55**	**0**

STONEFIELD

Table B2

3-Year Motor Vehicle Collision Summary Table by Location

Intersection/Location Name: Intersection of NYS Route 25 & Burman Boulevard
Time Period: 2/1/2017 - 1/31-2020
Total Accidents: 3

Day of Week	Number	%
Sunday	1	33
Monday	1	33
Tuesday		0
Wednesday		0
Thursday		0
Friday		0
Saturday	1	34
Time of Day	**Number**	**%**
6 am-10 am		0
10 am-4 pm	1	34
4 pm-7 pm	1	33
7 pm-12 am		0
12 am-6 am	1	33
Weather	**Number**	**%**
Clear	2	67
Cloudy		0
Fog/Smog/Smoke		0
Rain	1	33
Sleet/Hail/Freezing Rain		0
Snow		0
Light Conditions	**Number**	**%**
Dark, Road Lighted		0
Dark, Road Unlighted	2	67
Dawn		0
Daylight	1	33
Dusk		0
Time of Year	**Number**	**%**
Winter (Dec-Feb)	1	33
Spring (Mar-May)		0
Summer (June-Aug)		0
Fall (Sep-Nov)	2	67
Severity	**Number**	**%**
Fatality		0
Injury		0
Injury and Property Damage		0
Property Damage	2	67
Non-Reportable	1	33

Pavement	Number	%
Dry	2	67
Snow/Ice		0
Wet	1	33
Accident Type	**Number**	**%**
Rear End	2	67
Right Angle		0
Overtaking		0
Overturned		0
Sideswipe		0
Right Turn		0
Left Turn		0
Head On		0
Backing		0
Animal	1	33
Bicyclist		0
Fixed Object		0
Contributing Factors	**Number**	**%**
Animal's Action	1	33
Backing Unsafely		0
Brakes Defective		0
Driver Inattention		0
Driver Inexperience		0
Failure to Keep Right		0
Failure to Yield ROW		0
Fell Asleep		0
Following Too Closely	2	67
Glare		0
Passing or Lane Usage Improperly		0
Pavement Slippery		0
Reaction to Uninvolved Vehicle		0
Tire Failure/Inadequate		0
Traffic Control Devices Disregarded		0
Turning Improper		0
Unsafe Lane Change		0
Unsafe Speed		0
View Obstructed/Limited		0
Unknown/Not Entered		0

Accident Rate Calculations

Total Volume	10844	Vehicles per Day
	11.87	Million Entering Vehicles (MEV)
	0.25	Collision Rate per MEV
	0.17	NYSDOT Average Collision Rate (Urban 3-Leg Signalized Intersection, 1-4 lanes)

STONEFIELD

Table B3
3-Year Motor Vehicle Collision Summary Table by Location

Intersection/Location Name: NYS Route 25 Between Burman Boulevard & NYS Route 25A
Time Period: 2/1/2017 - 1/31-2020
Total Accidents: 11

Day of Week	Number	%
Sunday		0
Monday	1	9
Tuesday	1	9
Wednesday	1	9
Thursday	5	46
Friday	2	18
Saturday	1	9
Time of Day	**Number**	**%**
6 am-10 am	4	37
10 am-4 pm	1	9
4 pm-7 pm	1	9
7 pm-12 am	1	9
12 am-6 am	4	36
Weather	**Number**	**%**
Clear	9	82
Cloudy	1	9
Fog/Smog/Smoke		0
Rain		0
Sleet/Hail/Freezing Rain		0
Snow	1	9
Light Conditions	**Number**	**%**
Dark, Road Lighted	1	9
Dark, Road Unlighted	4	36
Dawn		0
Daylight	6	55
Dusk		0
Time of Year	**Number**	**%**
Winter (Dec-Feb)	3	27
Spring (Mar-May)	1	9
Summer (June-Aug)	3	27
Fall (Sep-Nov)	4	37
Severity	**Number**	**%**
Fatality		0
Injury	1	9
Injury and Property Damage	2	19
Property Damage	4	36
Non-Reportable	4	36

Pavement	Number	%
Dry	10	91
Snow/Ice	1	9
Wet		0
Accident Type	**Number**	**%**
Rear End	4	37
Right Angle	1	9
Overtaking		0
Overturned		0
Sideswipe		0
Right Turn	2	18
Left Turn	1	9
Head On		0
Backing		0
Animal	3	27
Bicyclist		0
Fixed Object		0
Contributing Factors	**Number**	**%**
Animal's Action	2	18
Backing Unsafely		0
Brakes Defective		0
Driver Inattention	3	28
Driver Inexperience		0
Failure to Keep Right		0
Failure to Yield ROW	1	9
Fell Asleep		0
Following Too Closely	1	9
Glare		0
Passing or Lane Usage Improperly		0
Pavement Slippery	1	9
Reaction to Uninvolved Vehicle		0
Tire Failure/Inadequate		0
Traffic Control Devices Disregarded		0
Turning Improper		0
Unsafe Lane Change		0
Unsafe Speed	1	9
View Obstructed/Limited	1	9
Unknown/Not Entered	1	9

Accident Rate Calculations

Total Volume	13778	Vehicles per Day
	9.05	Million Vehicle Miles (MVM)
	1.22	Collision Rate per MVM
	2.25	NYSDOT Average Collision Rate (Free Control, Undivided, 2 Lanes)

STONEFIELD

Table B4

3-Year Motor Vehicle Collision Summary Table by Location

Intersection/Location Name: Intersection of NYS Route 25 & NYS Route 25A
Time Period: 2/1/2017 - 1/31-2020
Total Accidents: 15

Day of Week	Number	%
Sunday	3	20
Monday	2	13
Tuesday	1	7
Wednesday	1	7
Thursday	3	20
Friday	2	13
Saturday	3	20
Time of Day	**Number**	**%**
6 am-10 am	2	13
10 am-4 pm	5	34
4 pm-7 pm	6	40
7 pm-12 am	2	13
12 am-6 am		0
Weather	**Number**	**%**
Clear	11	73
Cloudy	2	13
Fog/Smog/Smoke		0
Rain		0
Sleet/Hail/Freezing Rain	1	7
Snow	1	7
Light Conditions	**Number**	**%**
Dark, Road Lighted	3	20
Dark, Road Unlighted	3	20
Dawn	1	7
Daylight	8	53
Dusk		0
Time of Year	**Number**	**%**
Winter (Dec-Feb)	3	20
Spring (Mar-May)	4	26
Summer (June-Aug)	1	7
Fall (Sep-Nov)	7	47
Severity	**Number**	**%**
Fatality		0
Injury		0
Injury and Property Damage	4	27
Property Damage	7	46
Non-Reportable	4	27

Pavement	Number	%
Dry	13	87
Snow/Ice	2	13
Wet		0
Accident Type	**Number**	**%**
Rear End	6	40
Right Angle	1	7
Overtaking		0
Overturned		0
Sideswipe	2	13
Right Turn	1	7
Left Turn		0
Head On		0
Backing		0
Animal	2	13
Bicyclist		0
Fixed Object	3	20
Contributing Factors	**Number**	**%**
Animal's Action	3	20
Backing Unsafely		0
Brakes Defective		0
Driver Inattention	4	27
Driver Inexperience	1	7
Failure to Keep Right		0
Failure to Yield ROW	2	13
Fell Asleep		0
Following Too Closely	2	13
Glare		0
Passing or Lane Usage Improperly		0
Pavement Slippery	1	7
Reaction to Uninvolved Vehicle	2	13
Tire Failure/Inadequate		0
Traffic Control Devices Disregarded		0
Turning Improper		0
Unsafe Lane Change		0
Unsafe Speed		0
View Obstructed/Limited		0
Unknown/Not Entered		0

Accident Rate Calculations

Total Volume	13778	Vehicles per Day
	15.09	Million Entering Vehicles (MEV)
	0.99	Collision Rate per MEV
	0.31	NYSDOT Average Collision Rate (Urban 3-Leg Signalized Intersection, 1-4 lanes)

STONEFIELD

Table B5

3-Year Motor Vehicle Collision Summary Table by Location

Intersection/Location Name: NYS Route 25 Between NYS Route 25A & Timber Drive
Time Period: 2/1/2017 - 1/31-2020
Total Accidents: 8

Day of Week	Number	%
Sunday		0
Monday		0
Tuesday	2	25
Wednesday	1	13
Thursday	3	38
Friday	1	12
Saturday	1	12
Time of Day	**Number**	**%**
6 am-10 am	2	25
10 am-4 pm	2	25
4 pm-7 pm	2	25
7 pm-12 am	2	25
12 am-6 am		0
Weather	**Number**	**%**
Clear	5	63
Cloudy	1	13
Fog/Smog/Smoke		0
Rain	1	12
Sleet/Hail/Freezing Rain		0
Snow	1	12
Light Conditions	**Number**	**%**
Dark, Road Lighted		0
Dark, Road Unlighted	1	13
Dawn		0
Daylight	6	75
Dusk	1	12
Time of Year	**Number**	**%**
Winter (Dec-Feb)	3	38
Spring (Mar-May)	1	12
Summer (June-Aug)	2	25
Fall (Sep-Nov)	2	25
Severity	**Number**	**%**
Fatality		0
Injury		0
Injury and Property Damage	2	25
Property Damage	5	63
Non-Reportable	1	12

Pavement	Number	%
Dry	6	75
Snow/Ice	1	13
Wet	1	12
Accident Type	**Number**	**%**
Rear End	3	38
Right Angle	2	25
Overtaking		0
Overturned	1	12
Sideswipe		0
Right Turn		0
Left Turn		0
Head On		0
Backing		0
Animal	2	25
Bicyclist		0
Fixed Object		0
Contributing Factors	**Number**	**%**
Animal's Action	2	25
Backing Unsafely		0
Brakes Defective		0
Driver Inattention	1	13
Driver Inexperience		0
Failure to Keep Right		0
Failure to Yield ROW	2	25
Fell Asleep		0
Following Too Closely	1	13
Glare		0
Passing or Lane Usage Improperly		0
Pavement Slippery	1	12
Reaction to Uninvolved Vehicle		0
Tire Failure/Inadequate		0
Traffic Control Devices Disregarded		0
Turning Improper		0
Unsafe Lane Change		0
Unsafe Speed		0
View Obstructed/Limited		0
Unknown/Not Entered	1	12

Accident Rate Calculations

Total Volume	18433	Vehicles per Day
	6.06	Million Vehicle Miles (MVM)
	1.32	Collision Rate per MVM
	2.25	NYSDOT Average Collision Rate (Free Control, Undivided, 2 Lanes)

STONEFIELD

Table B6

3-Year Motor Vehicle Collision Summary Table by Location

Intersection/Location Name: Intersection of NYS Route 25 & Timber Drive
Time Period: 2/1/2017 - 1/31-2020
Total Accidents: 2

Day of Week	Number	%
Sunday		0
Monday		0
Tuesday	2	100
Wednesday		0
Thursday		0
Friday		0
Saturday		0
Time of Day	**Number**	**%**
6 am-10 am		0
10 am-4 pm		0
4 pm-7 pm	1	50
7 pm-12 am	1	50
12 am-6 am		0
Weather	**Number**	**%**
Clear	2	100
Cloudy		0
Fog/Smog/Smoke		0
Rain		0
Sleet/Hail/Freezing Rain		0
Snow		0
Light Conditions	**Number**	**%**
Dark, Road Lighted	1	50
Dark, Road Unlighted		0
Dawn		0
Daylight	1	50
Dusk		0
Time of Year	**Number**	**%**
Winter (Dec-Feb)	1	50
Spring (Mar-May)		0
Summer (June-Aug)	1	50
Fall (Sep-Nov)		0
Severity	**Number**	**%**
Fatality		0
Injury		0
Injury and Property Damage	1	50
Property Damage	1	50
Non-Reportable		0

Pavement	Number	%
Dry	2	100
Snow/Ice		0
Wet		0
Accident Type	**Number**	**%**
Rear End	2	100
Right Angle		0
Overtaking		0
Overturned		0
Sideswipe		0
Right Turn		0
Left Turn		0
Head On		0
Backing		0
Animal		0
Bicyclist		0
Fixed Object		0
Contributing Factors	**Number**	**%**
Animal's Action		0
Backing Unsafely		0
Brakes Defective		0
Driver Inattention		0
Driver Inexperience		0
Failure to Keep Right		0
Failure to Yield ROW		0
Fell Asleep		0
Following Too Closely	1	50
Glare		0
Passing or Lane Usage Improperly		0
Pavement Slippery		0
Reaction to Uninvolved Vehicle		0
Tire Failure/Inadequate		0
Traffic Control Devices Disregarded		0
Turning Improper		0
Unsafe Lane Change		0
Unsafe Speed		0
View Obstructed/Limited		0
Unknown/Not Entered	1	50

Accident Rate Calculations

Total Volume	18433	Vehicles per Day
	20.18	Million Entering Vehicles (MEV)
	0.10	Collision Rate per MEV
	0.18	NYSDOT Average Collision Rate (Urban 3-Leg Unsignalized Intersection, 1-3 lanes)

STONEFIELD

Table B7

3-Year Motor Vehicle Collision Summary Table by Location

Intersection/Location Name: NYS Route 25 Between Timber Drive & Fresh Pond Avenue
Time Period: 2/1/2017 - 1/31-2020
Total Accidents: 10

Day of Week	Number	%
Sunday	2	20
Monday	1	10
Tuesday		0
Wednesday	3	30
Thursday	1	10
Friday	2	20
Saturday	1	10
Time of Day	**Number**	**%**
6 am-10 am	2	20
10 am-4 pm	4	40
4 pm-7 pm		0
7 pm-12 am	2	20
12 am-6 am	2	20
Weather	**Number**	**%**
Clear	9	90
Cloudy	1	10
Fog/Smog/Smoke		0
Rain		0
Sleet/Hail/Freezing Rain		0
Snow		0
Light Conditions	**Number**	**%**
Dark, Road Lighted	3	30
Dark, Road Unlighted		0
Dawn	1	10
Daylight	6	60
Dusk		0
Time of Year	**Number**	**%**
Winter (Dec-Feb)	3	30
Spring (Mar-May)	2	20
Summer (June-Aug)	2	20
Fall (Sep-Nov)	3	30
Severity	**Number**	**%**
Fatality		0
Injury		0
Injury and Property Damage	4	40
Property Damage	4	40
Non-Reportable	2	20

Pavement	Number	%
Dry	10	100
Snow/Ice		0
Wet		0
Accident Type	**Number**	**%**
Rear End	3	30
Right Angle		0
Overtaking	1	10
Overturned		0
Sideswipe		0
Right Turn		0
Left Turn		0
Head On		0
Backing		0
Animal	2	20
Bicyclist		0
Fixed Object	4	40
Contributing Factors	**Number**	**%**
Animal's Action	3	30
Backing Unsafely		0
Brakes Defective		0
Driver Inattention	2	20
Driver Inexperience		0
Failure to Keep Right		0
Failure to Yield ROW		0
Fell Asleep	1	10
Following Too Closely	1	10
Glare		0
Passing or Lane Usage Improperly	2	20
Pavement Slippery		0
Reaction to Uninvolved Vehicle		0
Tire Failure/Inadequate		0
Traffic Control Devices Disregarded		0
Turning Improper	1	10
Unsafe Lane Change		0
Unsafe Speed		0
View Obstructed/Limited		0
Unknown/Not Entered		0

Accident Rate Calculations

Total Volume	17556	Vehicles per Day
	9.61	Million Vehicle Miles (MVM)
	1.04	Collision Rate per MVM
	2.25	NYSDOT Average Collision Rate (Free Control, Undivided, 2 Lanes)

STONEFIELD

Table B8

3-Year Motor Vehicle Collision Summary Table by Location

Intersection/Location Name: Intersection of NYS Route 25 & Fresh Pond Avenue
Time Period: 2/1/2017 - 1/31-2020
Total Accidents: 3

Day of Week	Number	%
Sunday	1	33
Monday		0
Tuesday		0
Wednesday	2	67
Thursday		0
Friday		0
Saturday		0
Time of Day	**Number**	**%**
6 am-10 am		0
10 am-4 pm	1	33
4 pm-7 pm	2	67
7 pm-12 am		0
12 am-6 am		0
Weather	**Number**	**%**
Clear	3	100
Cloudy		0
Fog/Smog/Smoke		0
Rain		0
Sleet/Hail/Freezing Rain		0
Snow		0
Light Conditions	**Number**	**%**
Dark, Road Lighted		0
Dark, Road Unlighted		0
Dawn		0
Daylight	2	67
Dusk	1	33
Time of Year	**Number**	**%**
Winter (Dec-Feb)		0
Spring (Mar-May)	2	67
Summer (June-Aug)		0
Fall (Sep-Nov)	1	33
Severity	**Number**	**%**
Fatality		0
Injury		0
Injury and Property Damage	3	100
Property Damage		0
Non-Reportable		0

Pavement	Number	%
Dry	3	100
Snow/Ice		0
Wet		0
Accident Type	**Number**	**%**
Rear End	2	67
Right Angle	1	33
Overtaking		0
Overturned		0
Sideswipe		0
Right Turn		0
Left Turn		0
Head On		0
Backing		0
Animal		0
Bicyclist		0
Fixed Object		0
Contributing Factors	**Number**	**%**
Animal's Action		0
Backing Unsafely		0
Brakes Defective		0
Driver Inattention		0
Driver Inexperience		0
Failure to Keep Right		0
Failure to Yield ROW	1	33
Fell Asleep		0
Following Too Closely	1	33
Glare	1	34
Passing or Lane Usage Improperly		0
Pavement Slippery		0
Reaction to Uninvolved Vehicle		0
Tire Failure/Inadequate		0
Traffic Control Devices Disregarded		0
Turning Improper		0
Unsafe Lane Change		0
Unsafe Speed		0
View Obstructed/Limited		0
Unknown/Not Entered		0

Accident Rate Calculations

Total Volume	17556	Vehicles per Day
	19.22	Million Entering Vehicles (MEV)
	0.16	Collision Rate per MEV
	0.15	NYSDOT Average Collision Rate (Urban 3-Leg Signalized Intersection, 1-4 lanes)

STONEFIELD

Table B9

3-Year Motor Vehicle Collision Summary Table by Location

Intersection/Location Name: NYS Route 25 Between Fresh Pond Avenue & Edwards Avenue
Time Period: 2/1/2017 - 1/31-2020
Total Accidents: 31

Day of Week	Number	%
Sunday	3	10
Monday	8	25
Tuesday	3	10
Wednesday	3	10
Thursday	6	19
Friday	4	13
Saturday	4	13
Time of Day	**Number**	**%**
6 am-10 am	9	29
10 am-4 pm	9	29
4 pm-7 pm	1	3
7 pm-12 am	9	29
12 am-6 am	3	10
Weather	**Number**	**%**
Clear	24	78
Cloudy	5	16
Fog/Smog/Smoke		0
Rain		0
Sleet/Hail/Freezing Rain		0
Snow	2	6
Light Conditions	**Number**	**%**
Dark, Road Lighted	8	25
Dark, Road Unlighted	3	10
Dawn		0
Daylight	20	65
Dusk		0
Time of Year	**Number**	**%**
Winter (Dec-Feb)	5	16
Spring (Mar-May)	12	39
Summer (June-Aug)	8	26
Fall (Sep-Nov)	6	19
Severity	**Number**	**%**
Fatality		0
Injury		0
Injury and Property Damage	7	22
Property Damage	21	68
Non-Reportable	3	10

Pavement	Number	%
Dry	27	87
Snow/Ice	1	3
Wet	3	10
Accident Type	**Number**	**%**
Rear End	10	33
Right Angle	2	6
Overtaking		0
Overturned		0
Sideswipe	2	6
Right Turn		0
Left Turn	2	6
Head On		0
Backing		0
Animal	10	33
Bicyclist		0
Fixed Object	5	16
Contributing Factors	**Number**	**%**
Animal's Action	10	33
Backing Unsafely	1	3
Brakes Defective		0
Driver Inattention	7	23
Driver Inexperience		0
Failure to Keep Right	1	3
Failure to Yield ROW		0
Fell Asleep	2	6
Following Too Closely	5	17
Glare		0
Passing or Lane Usage Improperly	1	3
Pavement Slippery		0
Reaction to Uninvolved Vehicle	1	3
Tire Failure/Inadequate	1	3
Traffic Control Devices Disregarded		0
Turning Improper	2	6
Unsafe Lane Change		0
Unsafe Speed		0
View Obstructed/Limited		0
Unknown/Not Entered		0

Accident Rate Calculations

Total Volume	18433	Vehicles per Day
	28.26	Million Vehicle Miles (MVM)
	1.10	Collision Rate per MVM
	2.25	NYSDOT Average Collision Rate (Free Control, Undivided, 2 Lanes)

STONEFIELD

Table B10

3-Year Motor Vehicle Collision Summary Table by Location

Intersection/Location Name: Intersection of NYS Route 25 & Edwards Avenue
Time Period: 2/1/2017 - 1/31-2020
Total Accidents: 35

Day of Week	Number	%
Sunday	3	9
Monday	4	11
Tuesday	7	20
Wednesday	6	17
Thursday	4	11
Friday	8	23
Saturday	3	9
Time of Day	**Number**	**%**
6 am-10 am	6	17
10 am-4 pm	15	43
4 pm-7 pm	8	23
7 pm-12 am	6	17
12 am-6 am		0
Weather	**Number**	**%**
Clear	26	74
Cloudy	7	20
Fog/Smog/Smoke		0
Rain	2	6
Sleet/Hail/Freezing Rain		0
Snow		0
Light Conditions	**Number**	**%**
Dark Road-Lighted	3	8
Dark Road-Unlighted	1	3
Dawn	1	3
Daylight	28	80
Dusk	2	6
Time of Year	**Number**	**%**
Winter (Dec-Feb)	12	35
Spring (Mar-May)	11	31
Summer (June-Aug)	7	20
Fall (Sep-Nov)	5	14
Severity	**Number**	**%**
Fatality		0
Injury	1	3
Injury and Property Damage	12	34
Property Damage	15	43
Non-Reportable	7	20

Pavement	Number	%
Dry	30	85
Snow/Ice	2	6
Wet	3	9
Accident Type	**Number**	**%**
Rear End	16	46
Right Angle	7	20
Overtaking	2	5
Overturned		0
Sideswipe	1	3
Right Turn	1	3
Left Turn	5	14
Head On	1	3
Backing	2	6
Animal		0
Bicyclist		0
Fixed Object		0
Contributing Factors	**Number**	**%**
Animal's Action		0
Backing Unsafely	1	3
Brakes Defective		0
Driver Inattention	7	20
Driver Inexperience		0
Failure to Keep Right		0
Failure to Yield ROW	9	25
Fell Asleep		0
Following Too Closely	10	28
Glare		0
Passing or Lane Usage Improperly	2	6
Pavement Slippery		0
Reaction to Uninvolved Vehicle	1	3
Tire Failure/Inadequate		0
Traffic Control Devices Disregarded	1	3
Turning Improper	3	9
Unsafe Lane Change	1	3
Unsafe Speed		0
View Obstructed/Limited		0
Unknown/Not Entered		0

Accident Rate Calculations

Total Volume	21633	Vehicles per Day
	23.69	Million Entering Vehicles (MEV)
	1.48	Collision Rate per MEV
	0.54	NYSDOT Average Collision Rate (Urban 4-Leg Signalized Intersection, 1-4 Lanes)

STONEFIELD

Table B11
3-Year Motor Vehicle Collision Summary Table by Location

Intersection/Location Name: Edwards Avenue Between NYS Route 25 & River Road
Time Period: 2/1/2017 - 1/31-2020
Total Accidents: 13

Day of Week	Number	%
Sunday	1	8
Monday	2	15
Tuesday	1	8
Wednesday	1	8
Thursday	2	15
Friday	3	23
Saturday	3	23
Time of Day	**Number**	**%**
6 am-10 am	2	15
10 am-4 pm	3	24
4 pm-7 pm	4	31
7 pm-12 am	2	15
12 am-6 am	2	15
Weather	**Number**	**%**
Clear	12	92
Cloudy	1	8
Fog/Smog/Smoke		0
Rain		0
Sleet/Hail/Freezing Rain		0
Snow		0
Light Conditions	**Number**	**%**
Dark, Road Lighted		0
Dark, Road Unlighted	4	30
Dawn	1	8
Daylight	7	54
Dusk	1	8
Time of Year	**Number**	**%**
Winter (Dec-Feb)	4	31
Spring (Mar-May)	2	15
Summer (June-Aug)	3	23
Fall (Sep-Nov)	4	31
Severity	**Number**	**%**
Fatality		0
Injury		0
Injury and Property Damage	4	31
Property Damage	6	46
Non-Reportable	3	23

Pavement	Number	%
Dry	13	100
Snow/Ice		0
Wet		0
Accident Type	**Number**	**%**
Rear End	4	30
Right Angle	1	8
Overtaking	1	8
Overturned		0
Sideswipe	1	8
Right Turn		0
Left Turn	1	8
Head On		0
Backing		0
Animal	3	23
Bicyclist		0
Fixed Object	2	15
Contributing Factors	**Number**	**%**
Animal's Action	2	15
Backing Unsafely		0
Brakes Defective		0
Driver Inattention	3	23
Driver Inexperience		0
Failure to Keep Right		0
Failure to Yield ROW	1	8
Fell Asleep	1	8
Following Too Closely	4	30
Glare		0
Passing or Lane Usage Improperly		0
Pavement Slippery		0
Reaction to Uninvolved Vehicle		0
Tire Failure/Inadequate		0
Traffic Control Devices Disregarded		0
Turning Improper		0
Unsafe Lane Change		0
Unsafe Speed		0
View Obstructed/Limited	1	8
Unknown/Not Entered	1	8

Accident Rate Calculations

Total Volume	7050	Vehicles per Day
	10.81	Million Vehicle Miles (MVM)
	1.20	Collision Rate per MVM
	2.25	NYSDOT Average Collision Rate (Free Control, Undivided, 2 Lanes)

STONEFIELD

Table B12

3-Year Motor Vehicle Collision Summary Table by Location

Intersection/Location Name: Intersection of Edwards Avenue & River Road
Time Period: 2/1/2017 - 1/31-2020
Total Accidents: 15

Day of Week	Number	%
Sunday	3	20
Monday	3	20
Tuesday	1	7
Wednesday	7	46
Thursday		0
Friday	1	7
Saturday		0
Time of Day	**Number**	**%**
6 am-10 am	2	13
10 am-4 pm	8	53
4 pm-7 pm	1	7
7 pm-12 am	1	7
12 am-6 am	3	20
Weather	**Number**	**%**
Clear	11	73
Cloudy	1	7
Fog/Smog/Smoke		0
Rain	2	13
Sleet/Hail/Freezing Rain		0
Snow	1	7
Light Conditions	**Number**	**%**
Dark, Road Lighted	2	13
Dark, Road Unlighted	2	13
Dawn		0
Daylight	11	74
Dusk		0
Time of Year	**Number**	**%**
Winter (Dec-Feb)	3	20
Spring (Mar-May)	4	27
Summer (June-Aug)	3	20
Fall (Sep-Nov)	5	33
Severity	**Number**	**%**
Fatality		0
Injury	1	7
Injury and Property Damage	7	46
Property Damage	6	40
Non-Reportable	1	7

Pavement	Number	%
Dry	12	80
Snow/Ice	1	7
Wet	2	13
Accident Type	**Number**	**%**
Rear End	4	26
Right Angle	4	26
Overtaking	1	7
Overturned		0
Sideswipe	1	7
Right Turn		0
Left Turn	1	7
Head On		0
Backing		0
Animal		0
Bicyclist	1	7
Fixed Object	3	20
Contributing Factors	**Number**	**%**
Animal's Action	1	7
Backing Unsafely		0
Brakes Defective	1	7
Driver Inattention	1	7
Driver Inexperience	1	7
Failure to Keep Right		0
Failure to Yield ROW	3	20
Fell Asleep	1	7
Following Too Closely	1	7
Glare	1	7
Passing or Lane Usage Improperly	1	6
Pavement Slippery	2	13
Reaction to Uninvolved Vehicle		0
Tire Failure/Inadequate		0
Traffic Control Devices Disregarded	1	6
Turning Improper		0
Unsafe Lane Change		0
Unsafe Speed		0
View Obstructed/Limited		0
Unknown/Not Entered	1	6

Accident Rate Calculations

Total Volume	7050	Vehicles per Day
	7.72	Million Entering Vehicles (MEV)
	1.94	Collision Rate per MEV
	0.15	NYSDOT Average Collision Rate (Free Control, Undivided, 2 Lanes)

STONEFIELD

Table B13

3-Year Motor Vehicle Collision Summary Table by Location

Intersection/Location Name: Intersection of Edwards Avenue & Mill Road
Time Period: 2/1/2017 - 1/31-2020
Total Accidents: 2

Day of Week	Number	%
Sunday		0
Monday		0
Tuesday	1	50
Wednesday	1	50
Thursday		0
Friday		0
Saturday		0
Time of Day	**Number**	**%**
6 am-10 am		0
10 am-4 pm		0
4 pm-7 pm	1	50
7 pm-12 am	1	50
12 am-6 am		0
Weather	**Number**	**%**
Clear	2	100
Cloudy		0
Fog/Smog/Smoke		0
Rain		0
Sleet/Hail/Freezing Rain		0
Snow		0
Light Conditions	**Number**	**%**
Dark, Road Lighted		0
Dark, Road Unlighted		0
Dawn		0
Daylight	1	50
Dusk	1	50
Time of Year	**Number**	**%**
Winter (Dec-Feb)		0
Spring (Mar-May)		0
Summer (June-Aug)	2	100
Fall (Sep-Nov)		0
Severity	**Number**	**%**
Fatality		0
Injury		0
Injury and Property Damage	1	50
Property Damage		0
Non-Reportable	1	50

Pavement	Number	%
Dry	2	100
Snow/Ice		0
Wet		0
Accident Type	**Number**	**%**
Rear End	1	50
Right Angle		0
Overtaking	1	50
Overturned		0
Sideswipe		0
Right Turn		0
Left Turn		0
Head On		0
Backing		0
Animal		0
Bicyclist		0
Fixed Object		0
Contributing Factors	**Number**	**%**
Animal's Action		0
Backing Unsafely		0
Brakes Defective		0
Driver Inattention		0
Driver Inexperience		0
Failure to Keep Right		0
Failure to Yield ROW		0
Fell Asleep		0
Following Too Closely		0
Glare		0
Passing or Lane Usage Improperly		0
Pavement Slippery		0
Reaction to Uninvolved Vehicle	1	50
Tire Failure/Inadequate		0
Traffic Control Devices Disregarded		0
Turning Improper		0
Unsafe Lane Change		0
Unsafe Speed	1	50
View Obstructed/Limited		0
Unknown/Not Entered		0

Accident Rate Calculations

Total Volume	7050	Vehicles per Day
	7.72	Million Entering Vehicles (MEV)
	0.26	Collision Rate per MEV
	0.07	NYSDOT Average Collision Rate (Urban 3-Leg Unsignalized Intersection, > 5 lanes)

STONEFIELD

Table B14

3-Year Motor Vehicle Collision Summary Table by Location

Intersection/Location Name: Intersection of Edwards Avenue & LIE East Exit Ramp
Time Period: 2/1/2017 - 1/31-2020
Total Accidents: 33

Day of Week	Number	%
Sunday	4	12
Monday	6	18
Tuesday	5	16
Wednesday	7	21
Thursday	1	3
Friday	6	18
Saturday	4	12
Time of Day	**Number**	**%**
6 am-10 am	10	30
10 am-4 pm	14	43
4 pm-7 pm	7	21
7 pm-12 am	1	3
12 am-6 am	1	3
Weather	**Number**	**%**
Clear	24	73
Cloudy	4	12
Fog/Smog/Smoke	1	3
Rain	4	12
Sleet/Hail/Freezing Rain		0
Snow		0
Light Conditions	**Number**	**%**
Dark, Road Lighted	1	3
Dark, Road Unlighted	1	3
Dawn		0
Daylight	31	94
Dusk		0
Time of Year	**Number**	**%**
Winter (Dec-Feb)	3	10
Spring (Mar-May)	10	30
Summer (June-Aug)	9	27
Fall (Sep-Nov)	11	33
Severity	**Number**	**%**
Fatality		0
Injury	1	3
Injury and Property Damage	4	12
Property Damage	15	46
Non-Reportable	13	39

Pavement	Number	%
Dry	27	82
Snow/Ice		0
Wet	6	18
Accident Type	**Number**	**%**
Rear End	10	30
Right Angle	12	37
Overtaking	5	15
Overturned		0
Sideswipe		0
Right Turn		0
Left Turn	3	9
Head On		0
Backing		0
Animal		0
Bicyclist		0
Fixed Object	3	9
Contributing Factors	**Number**	**%**
Animal's Action		0
Backing Unsafely		0
Brakes Defective		0
Driver Inattention	10	30
Driver Inexperience	1	3
Failure to Keep Right		0
Failure to Yield ROW	11	34
Fell Asleep		0
Following Too Closely	1	3
Glare		0
Passing or Lane Usage Improperly		0
Pavement Slippery	1	3
Reaction to Uninvolved Vehicle	1	3
Tire Failure/Inadequate		0
Traffic Control Devices Disregarded	1	3
Turning Improper	3	9
Unsafe Lane Change		0
Unsafe Speed	1	3
View Obstructed/Limited	2	6
Unknown/Not Entered	1	3

Accident Rate Calculations

Total Volume	18658	Vehicles per Day
	20.43	Million Entering Vehicles (MEV)
	1.62	Collision Rate per MEV
	0.07	NYSDOT Average Collision Rate (Urban 3-Leg Unsignalized Intersection, > 5 lanes)

RAW MOTOR VEHICLE COLLISION DATA

Case Num	Case Year	County	Comp Muni	Muni Type	Comp Ref Marker	At Intersection	Comp X	Comp Y	Accd Date	Accd Time	Severity	Num Of Injuries	Num Serious Injuries	Num Of Fatalities	Num Of Vehicles	Accd Type	Collision Type	Traffic Control	Light Condition	Weather	Road Surf Cond
36621518	2017	SUFFOLK	Riverhead	3	25 07041365	N	685479.7251	4532988.5658	02/24/2017	08:13am	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT TURN (WITH OTHER CAR)	NONE	DAYLIGHT	CLEAR	DRY
36628020	2017	SUFFOLK	Riverhead	3	25 07041391	Y	689658.1276	4533060.7285	02/10/2017	01:46pm	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	SNOW/ICE
36633189	2017	SUFFOLK	Brookhaven	3		N	690346.5251	4530476.6084	03/07/2017	10:15am	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	STOP SIGN	DAYLIGHT	RAIN	WET
36634670	2017	SUFFOLK	Riverhead	3	25 07041386	N	688858.1626	4533131.2027	03/07/2017	07:38am	PROPERTY DAMAGE AND INJURY	4	0	0	3	COLLISION WITH MOTOR VEHICLE	OTHER	NONE	DAYLIGHT	CLOUDY	WET
36650702	2017	SUFFOLK	Riverhead	3	25 07041376	N	687244.9781	4533167.8282	03/19/2017	08:29pm	PROPERTY DAMAGE AND INJURY	1	0	0	1	COLL. W/LIGHT SUPPORT/UTILITY POLE	OTHER	NONE	DARK-ROAD LIGHTED	CLEAR	DRY
36657413	2017	SUFFOLK	Brookhaven	3	24 07043000	N	690269.9267	4530532.3733	03/24/2017	12:00pm	PROPERTY DAMAGE	0		0	1	COLLISION WITH CRASH CUSHION	OTHER	NONE	DAYLIGHT	CLOUDY	DRY
36671651	2017	SUFFOLK	Riverhead	3	25 07041389	N	689289.2068	4533110.5266	04/02/2017	01:49am	PROPERTY DAMAGE	0		0	1	COLL. W/LIGHT SUPPORT/UTILITY POLE	OTHER	NONE	DARK-ROAD UNLIGHTED	CLEAR	DRY
36682362	2017	SUFFOLK	Riverhead	3	25 07041380	N	687921.3485	4533125.4827	04/10/2017	05:49pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	NONE	DAYLIGHT	CLEAR	DRY
36684107	2017	SUFFOLK	Brookhaven	3		N	690340.1203	4530465.8739	04/04/2017	04:53pm	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	STOP SIGN	DAYLIGHT	CLOUDY	WET
36711131	2017	SUFFOLK	Riverhead	3	25 07041391	Y	689658.1276	4533060.7285	05/02/2017	10:47am	PROPERTY DAMAGE AND INJURY	1	0	0	3	COLLISION WITH MOTOR VEHICLE	OTHER	TRAFFIC SIGNAL	DAYLIGHT	CLOUDY	WET
36725567	2017	SUFFOLK	Brookhaven	3	24 07043000	N	690292.1200	4530508.8100	05/05/2017	03:35pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	STOP SIGN	DAYLIGHT	RAIN	WET
36729252	2017	SUFFOLK	Riverhead	3		N	689644.0000	4533200.0000	05/18/2017	08:29am	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	LEFT TURN (AGAINST OTHER CAR)	NONE	DAYLIGHT	CLEAR	DRY
36729253	2017	SUFFOLK	Riverhead	3	25 07041388	N	689078.0382	4533122.8218	05/18/2017	03:28pm	PROPERTY DAMAGE AND INJURY	2	0	0	3	COLLISION WITH MOTOR VEHICLE	OTHER	NONE	DAYLIGHT	CLEAR	DRY
36729268	2017	SUFFOLK	Riverhead	3	25 07041391	N	689634.1621	4533064.9255	05/15/2017	09:59am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
36731589	2017	SUFFOLK	Riverhead	3	25 07041391	Y	689658.1276	4533060.7285	05/20/2017	08:09pm	PROPERTY DAMAGE AND INJURY	4	0	0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	TRAFFIC SIGNAL	DAWN	CLEAR	DRY
36737059	2017	SUFFOLK	Riverhead	3	25 07041390	N	689444.7551	4533095.3045	05/23/2017	09:48am	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
36744575	2017	SUFFOLK	Riverhead	3	25 07041379	N	687730.1282	4533155.9743	05/27/2017	09:24pm	PROPERTY DAMAGE AND INJURY	2	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DARK-ROAD LIGHTED	CLEAR	DRY
36757012	2017	SUFFOLK	Riverhead	3	25 07041366	N	685638.7464	4533017.3835	06/09/2017	12:15am	PROPERTY DAMAGE	0		0	1	COLLISION WITH ANIMAL	OTHER	NONE	DARK-ROAD UNLIGHTED	CLEAR	DRY
36762508	2017	SUFFOLK	Riverhead	3	25 07041389	N	689311.0145	4533109.2476	06/09/2017	08:51am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
36777243	2017	SUFFOLK	Riverhead	3	25 07041380	N	687851.0040	4533138.5115	06/22/2017	12:16pm	PROPERTY DAMAGE AND INJURY	4	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
36785190	2017	SUFFOLK	Brookhaven	3		N	690345.9756	4530475.6874	06/27/2017	12:30pm	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	STOP SIGN	DAYLIGHT	CLEAR	DRY
36787576	2017	SUFFOLK	Riverhead	3	25 07041391	Y	689658.6900	4533060.6300	06/23/2017	08:40am	PROPERTY DAMAGE AND INJURY	2	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	DRY
36787586	2017	SUFFOLK	Riverhead	3	25 07041372	Y	686541.8800	4533151.0600	06/27/2017	04:41pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NO PASSING ZONE	DAYLIGHT	CLEAR	DRY
36833057	2017	SUFFOLK	Brookhaven	3		Y	690185.8003	4530575.3900	07/26/2017	01:45am	NON-REPORTABLE	0		0	1	COLLISION WITH SIGN POST	OTHER	STOP SIGN	DARK-ROAD UNLIGHTED	CLEAR	DRY
36834392	2017	SUFFOLK	Riverhead	3	25 07041374	N	686834.8324	4533156.2987	07/23/2017	02:51pm	PROPERTY DAMAGE AND INJURY	1	0	0	1	COLL. W/LIGHT SUPPORT/UTILITY POLE	OTHER	NONE	DAYLIGHT	CLOUDY	DRY
36834395	2017	SUFFOLK	Riverhead	3	25 07041391	N	689556.1472	4533077.9442	07/28/2017	01:16pm	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	DRY
36834418	2017	SUFFOLK	Riverhead	3	25 07041391	Y	689658.1276	4533060.7285	08/02/2017	07:22pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	DRY
36836093	2017	SUFFOLK	Riverhead	3	25 07041388	N	689179.6927	4533117.0748	08/04/2017	08:43am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLOUDY	WET
36856298	2017	SUFFOLK	Riverhead	3	25 07041384	N	688437.9570	4533153.4329	08/14/2017	09:23pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	SIDESWIPE	NONE	DARK-ROAD LIGHTED	CLEAR	DRY
36861105	2017	SUFFOLK	Riverhead	3		Y	690055.4569	4530824.1692	08/23/2017	12:17pm	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	STOP SIGN	DAYLIGHT	CLEAR	DRY
36866025	2017	SUFFOLK	Brookhaven	3	24 07043000	N	690265.5900	4530521.1200	08/27/2017	04:00pm	PROPERTY DAMAGE AND INJURY	2	0	0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	STOP SIGN	DAYLIGHT	CLEAR	DRY
36873931	2017	SUFFOLK	Riverhead	3	25 07041368	N	685972.2326	4533073.9017	08/26/2017	01:56pm	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	NONE	DAYLIGHT	CLEAR	DRY
36880094	2017	SUFFOLK	Riverhead	3		N	689680.5132	4532849.0597	09/01/2017	04:10pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	NONE	DAYLIGHT	CLEAR	DRY
36881305	2017	SUFFOLK	Riverhead	3	25 07041369	Y	686108.2900	4533097.9800	09/07/2017	10:20pm	PROPERTY DAMAGE	0		0	1	COLLISION WITH SIGN POST	OTHER	OTHER	DARK-ROAD LIGHTED	CLEAR	DRY
36889620	2017	SUFFOLK	Riverhead	3	25 07041375	N	687019.9916	4533161.3086	09/09/2017	11:59am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	OVERTAKING	NONE	DAYLIGHT	CLEAR	DRY
36900124	2017	SUFFOLK	Riverhead	3		N	689669.6986	4532942.0812	09/20/2017	03:22pm	INJURY	2	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
36913477	2017	SUFFOLK	Riverhead	3		N	689693.0750	4532741.0087	08/30/2017	04:46pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
36915092	2017	SUFFOLK	Riverhead	3	25 07041391	N	689616.1880	4533068.0732	09/27/2017	12:15pm	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	TRAFFIC SIGNAL	DAYLIGHT	CLOUDY	DRY
36926000	2017	SUFFOLK	Riverhead	3	25 07041385	N	688700.1326	4533141.9491	10/02/2017	11:21am	PROPERTY DAMAGE	0		0	1	COLLISION WITH ANIMAL	OTHER	NO PASSING ZONE	DAYLIGHT	CLEAR	DRY
36940813	2017	SUFFOLK	Riverhead	3		Y	690054.4778	4530826.2268	10/15/2017	01:42pm	PROPERTY DAMAGE AND INJURY	1	1	0	1	COLLISION WITH BICYCLIST	OTHER	NONE	DAYLIGHT	CLEAR	DRY
36944475	2017	SUFFOLK	Riverhead	3	25 07041363	Y	685184.9302	4532909.2481	10/22/2017	01:59am	PROPERTY DAMAGE	0		0	1	COLLISION WITH DEER	OTHER	TRAFFIC SIGNAL	DARK-ROAD UNLIGHTED	CLEAR	DRY
36947562	2017	SUFFOLK	Riverhead	3	25 07041375	N	686985.0984	4533160.3645	10/18/2017	01:04pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
36955322	2017	SUFFOLK	Riverhead	3		Y	690055.9922	4530823.0445	10/29/2017	10:06am	PROPERTY DAMAGE AND INJURY	2	0	0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	NONE	DAYLIGHT	RAIN	WET
36963074	2017	SUFFOLK	Riverhead	3	25 07041379	N	687632.1142	4533168.8682	11/02/2017	05:49am	PROPERTY DAMAGE	0		0	1	COLLISION WITH DEER	OTHER	NONE	DARK-ROAD LIGHTED	CLEAR	DRY
36973650	2017	SUFFOLK	Riverhead	3	25 07041369	Y	686032.4738	4533085.6958	11/03/2017	06:16am	PROPERTY DAMAGE AND INJURY	2	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	TRAFFIC SIGNAL	DARK-ROAD UNLIGHTED	CLEAR	DRY
36980332	2017	SUFFOLK	Riverhead	3		N	689726.2809	4532454.0246	11/13/2017	01:11am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DARK-ROAD UNLIGHTED	CLEAR	DRY
36989922	2017	SUFFOLK	Riverhead	3	25 07041391	N	689675.9367	4533057.6353	11/19/2017	11:11am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	TRAFFIC SIGNAL	DAYLIGHT	CLOUDY	DRY
36990235	2017	SUFFOLK	Brookhaven	3	24 07043000	N	690342.8935	4530503.9254	10/16/2017	08:11pm	PROPERTY DAMAGE	0		0	1	COLLISION WITH GUIDE RAIL	OTHER	NONE	DARK-ROAD LIGHTED	CLEAR	DRY
36991958	2017	SUFFOLK	Brookhaven	3		N	690165.8930	4530594.9106	11/10/2017	02:13pm	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	NONE	DAYLIGHT	CLEAR	DRY
37015189	2017	SUFFOLK	Riverhead	3	25 07041375	N	687032.9821	4533161.6601	12/01/2017	07:51am	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
37016656	2017	SUFFOLK	Riverhead	3	25 07041391	Y	689658.1276	4533060.7285	12/03/2017	10:27pm	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	OVERTAKING	TRAFFIC SIGNAL	DARK-ROAD UNLIGHTED	CLOUDY	DRY
37032375	2017	SUFFOLK	Riverhead	3	25 07041370	N	686309.0007	4533132.9912	12/14/2017	07:47am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	SNOW	SNOW/ICE
37043648	2017	SUFFOLK	Riverhead	3	25 07041369	N	686065.8131	4533091.1647	12/17/2017	10:33am	PROPERTY DAMAGE AND INJURY	2	0	0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	NONE	DAYLIGHT	CLOUDY	DRY
37053195	2017	SUFFOLK	Riverhead	3		Y	689658.6817	4533059.9911	12/26/2017	01:04pm	PROPERTY DAMAGE AND INJURY	3	0	0	2	COLLISION WITH MOTOR VEHICLE	LEFT TURN (WITH OTHER CAR)	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	DRY
37057975	2017	SUFFOLK	Riverhead	3	25 07041375	N	686976.9961	4533160.1453	12/28/2017	08:41am	PROPERTY DAMAGE	0		0	1	COLLISION WITH DEER	OTHER	NONE	DAYLIGHT	CLEAR	DRY
37073459	2018	SUFFOLK	Riverhead	3	25 07041369	N	686090.7728	4533095.1694	01/01/2018	06:38pm	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	TRAFFIC SIGNAL	DARK-ROAD LIGHTED	CLEAR	DRY
37077629	2018	SUFFOLK	Riverhead	3	25 07041391	Y	689658.6900	4533060.6300	01/09/2018	08:24am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	OVERTAKING	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	SNOW/ICE
37101377	2018	SUFFOLK	Riverhead	3		Y	690054.4778	4530826.2268	01/19/2018	01:35pm	PROPERTY DAMAGE AND INJURY	4	0	0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	STOP SIGN	DAYLIGHT	CLEAR	DRY
37110980	2018	SUFFOLK	Brookhaven	3		Y	690185.5871	4530575.5987	01/17/2018	03:30pm	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	OVERTAKING	NONE	DAYLIGHT	RAIN	WET
37120778	2018	SUFFOLK	Riverhead	3	25 07041364	N	685268.9703	4532933.1047	01/30/2018	05:16am	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DARK-ROAD UNLIGHTED	SNOW	SNOW/ICE
37121452	2018	SUFFOLK	Riverhead	3		N	689852.0988	4531360.0126	01/30/2018	12:30am	PROPERTY DAMAGE	0		0	1	COLLISION WITH FENCE	OTHER	NONE	DARK-ROAD LIGHTED	SNOW	SNOW/ICE
37178240	2018	SUFFOLK	Riverhead	3	25 07041369	Y	686107.8540	4533097.9100	03/10/2018	04:52pm	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	SIDESWIPE	NONE	DAYLIGHT	CLOUDY	DRY
37205797	2018	SUFFOLK	Riverhead	3	25 07041369	Y	686034.9575	4533086.2066	03/21/2018	03:47pm	PROPERTY DAMAGE	0		0	1	COLLISION WITH TREE	OTHER	TRAFFIC SIGNAL	DAYLIGHT	SLEET/HAIL/FREEZING RAIN	SNOW/ICE
37219616	2018	SUFFOLK	Riverhead	3	25 07041369	Y	686107.8540	4533097.9100	03/16/2018	04:48pm	NON-REPORTABLE	0		0	3	COLLISION WITH MOTOR VEHICLE	OTHER	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	DRY
37220770	2018	SUFFOLK	Riverhead	3	25 07041390	N	689506.1156	4533085.7416	04/02/2018	07:54am	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	TRAFFIC SIGNAL	DAYLIGHT	SNOW	SNOW/ICE
37222968	2018	SUFFOLK	Riverhead	3	25 07041392	N	689691.1719	4533054.9898	04/05/2018	05:42pm	PROPERTY DAMAGE AND INJURY	3	0	0	2	COLLISION WITH MOTOR VEHICLE	LEFT TURN (WITH OTHER CAR)	NONE	DAYLIGHT	CLEAR	DRY
37226366	2018	SUFFOLK	Riverhead	3	25 07041390	N	689521.0642	4533083.4119	03/24/2018	08:30pm	PROPERTY DAMAGE	0		0	1	COLLISION WITH TREE	OTHER	NONE	DARK-ROAD LIGHTED	CLEAR	DRY
37226371	2018	SUFFOLK	Riverhead	3	25 07041377	Y	687370.0016	4533171.9647	03/25/2018	06:04pm	PROPERTY DAMAGE AND INJURY	3	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DUSK	CLEAR	DRY
37233521	2018	SUFFOLK	Riverhead	3	25 07041386	N	688767.0152	4533134.4306	04/07/2018	06:50am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	LEFT TURN (AGAINST OTHER CAR)	NONE	DAYLIGHT	CLEAR	DRY
37242574	2018	SUFFOLK	Riverhead	3		N	689680.6279	4532848.0730	04/14/2018	11:01am	PROPERTY DAMAGE AND INJURY	1	0	0	1	COLLISION WITH DEER	OTHER	NONE	DAYLIGHT	CLEAR	DRY
37249023	2018	SUFFOLK	Riverhead	3	25 07041378	N	687528.6969	4533175.9404	04/07/2018	03:40pm	PROPERTY DAMAGE	0		0	1	COLLISION WITH DEER	OTHER	NO PASSING ZONE	DAYLIGHT	CLEAR	DRY
37255274	2018	SUFFOLK	Brookhaven	3	24 07043000	N	690364.9310	4530497.7217	04/13/2018	06:24pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
37264227	2018	SUFFOLK	Riverhead	3	25 07041381	N	688023.9968	4533114.1569	05/02/2018	08:53am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	NONE	DAYLIGHT	CLEAR	DRY
37269134	2018	SUFFOLK	Riverhead	3		N	689919.1331	4531201.1007	04/21/2018	09:19pm	NON-REPORTABLE	0		0	1	COLLISION WITH FENCE	OTHER	NONE	DARK-ROAD UNLIGHTED	CLEAR	DRY
37271399	2018	SUFFOLK	Riverhead	3	25 07041391	Y	689658.6900	4533060.6300	05/01/2018	03:03pm	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	SIDESWIPE	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	DRY
37290732	2018	SUFFOLK	Riverhead	3		Y	690054.5000	4530826.1800	05/09/2018	10:13am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
37300859	2018	SUFFOLK	Riverhead	3	25 07041371	N	686443.9483	4533143.6545	05/22/2018	07:42pm	PROPERTY DAMAGE	0		0	1	OVERTURNED	OTHER	NONE	DAYLIGHT	RAIN	WET
37329539	2018	SUFFOLK	Riverhead	3	25 07041370	N	686193.0167	4533114.9164	06/06/2018	04:19pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	NONE	DAYLIGHT	CLEAR	DRY
37335009	2018	SUFFOLK	Riverhead	3	25 07041391	N	689528.0504	4533082.3231	06/17/2018	11:04am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	DRY
37376759	2018	SUFFOLK	Riverhead	3	25A07031449	N	685936.7476	4533175.5181	06/12/2018	05:18pm	PROPERTY DAMAGE	0		0	1	COLLISION WITH TREE	OTHER	NONE	DAYLIGHT	CLEAR	DRY
37394968	2018	SUFFOLK	Brookhaven	3	24 07043000	N	690271.1300	4530531.7100	07/11/2018	04:00pm	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	UNKNOWN	NONE	DAYLIGHT	CLEAR	DRY
37397608	2018	SUFFOLK	Riverhead	3	25 07041390	N	689423.0600	4533098.4192	07/13/2018	08:58am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
37403531	2018	SUFFOLK	Riverhead	3	25 07041374	N	686834.9918	4533156.3030	07/20/2018	04:58am	PROPERTY DAMAGE	0		0	1	COLL. W/LIGHT SUPPORT/UTILITY POLE	OTHER	NONE	DAWN	CLEAR	DRY
37411618	2018	SUFFOLK	Riverhead	3		Y	689658.6817	4533059.9911	07/30/2018	11:19am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	TRAFFIC SIGNAL	DAYLIGHT	CLOUDY	DRY
37412110	2018	SUFFOLK	Brookhaven	3	24 07043000	Y	690350.9599	4530486.5355	07/21/2018	08:15am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	LEFT TURN (AGAINST OTHER CAR)	STOP SIGN	DAYLIGHT	CLEAR	DRY
37415700	2018	SUFFOLK	Riverhead	3		N	689675.9728	4532888.1131	08/01/2018	10:14pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DARK-ROAD LIGHTED	CLEAR	DRY
37425726	2018	SUFFOLK	Riverhead	3	25 07041371	N	686372.9962	4533138.0480	08/04/2018	06:31pm	PROPERTY DAMAGE AND INJURY	4	0	0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	NONE	DAYLIGHT	CLEAR	DRY
37441823	2018	SUFFOLK	Riverhead	3		Y	690054.4778	4530826.2268	08/20/2018	09:39am	INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	LEFT TURN (AGAINST OTHER CAR)	NONE	DAYLIGHT	CLOUDY	DRY
37450039	2018	SUFFOLK	Riverhead	3	25 07041390	N	689454.1314	4533093.8432	08/26/2018	03:31pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
37466605	2018	SUFFOLK	Brookhaven	3	24 07043000	N	690292.2832	4530508.7482	08/25/2018	11:25am	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	STOP SIGN	DAYLIGHT	CLEAR	DRY
37483972	2018	SUFFOLK	Riverhead	3	25 07041370	N	686230.9071	4533122.4663	09/07/2018	08:37am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
37487298	2018	SUFFOLK	Brookhaven	3	24 07043000	Y	690351.1723	4530486.4551	08/29/2018	04:00pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	OVERTAKING	STOP SIGN	DAYLIGHT	CLEAR	DRY
37488085	2018	SUFFOLK	Riverhead	3		Y	690054.4778	4530826.2268	09/19/2018	11:50pm	PROPERTY DAMAGE	0		0	1	COLL. W/LIGHT SUPPORT/UTILITY POLE	OTHER	NONE	DARK-ROAD LIGHTED	RAIN	WET
37500985	2018	SUFFOLK	Riverhead	3		N	689668.5382	4532952.0626	09/23/2018	12:18pm	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	OVERTAKING	TRAFFIC SIGNAL	DAYLIGHT	CLOUDY	DRY
37506671	2018	SUFFOLK	Brookhaven	3		Y	690351.2590	4530485.8920	09/24/2018	10:40am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	STOP SIGN	DAYLIGHT	CLOUDY	DRY
37521210	2018	SUFFOLK	Riverhead	3		Y	689658.6817	4533059.9911	10/09/2018	05:38pm	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	DRY
37526040	2018	SUFFOLK	Riverhead	3	25 07041368	N	685958.0821	4533071.5136	10/01/2018	09:47am	INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	DRY
37529410	2018	SUFFOLK	Riverhead	3		N	689804.2144	4531781.6398	10/01/2018	05:00am	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	UNKNOWN	NONE	DARK-ROAD UNLIGHTED	CLEAR	DRY
37621568	2018	SUFFOLK	Brookhaven	3	24 07043000	N	690265.5900	4530521.1200	11/07/2018	06:45am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	LEFT TURN (AGAINST OTHER CAR)	NONE	DAYLIGHT	CLEAR	DRY
37636522	2018	SUFFOLK	Riverhead	3	25 07041373	N	686706.0061	4533154.7555	12/11/2018	07:59pm	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NO PASSING ZONE	DARK-ROAD LIGHTED	CLEAR	DRY
37639933	2018	SUFFOLK	Riverhead	3	25 07041388	N	689140.9787	4533119.6834	12/13/2018	11:40am	PROPERTY DAMAGE	0		0	1	COLLISION WITH ANIMAL	OTHER	NONE	DAYLIGHT	SNOW	WET
37645346	2018	SUFFOLK	Riverhead	3		N	689725.1049	4532467.4599	12/12/2018	04:17pm	PROPERTY DAMAGE	0		0	1	COLL. W/LIGHT SUPPORT/UTILITY POLE	OTHER	NONE	DAYLIGHT	CLEAR	DRY
37645417

Case Num	Ped Loc	Ped Action	Veh Type Veh 1	Veh Type Veh 2	Dir Of Travel Veh 1	Dir Of Travel Veh 2	Apparent Factor Veh 1	Apparent Factor Veh 2	Driver Age Veh 1	Driver Age Veh 2	PRE_ACCD_ACTN_VEH1	PRE_ACCD_ACTN_VEH2	Day_Of_Week	On Street	Closest Cross Street	Parking Lot Ind
36621518	NOT APPLICABLE	NOT APPLICABLE	TRUCK	CAR/VAN/PICKUP	NORTH-WEST	NORTH-WEST	VIEW OBSTRUCTED/LIMITED	FAILURE TO YIELD RIGHT OF WAY	42	53	MAKING RIGHT TURN	MAKING RIGHT TURN	Fri	MIDDLE COUNTRY RD	[Route] 25	N
36628020	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	WEST	FAILURE TO YIELD RIGHT OF WAY	NOT APPLICABLE	32	35	MAKING LEFT TURN	GOING STRAIGHT AHEAD	Fri	MIDDLE COUNTRY RD	Edwards Ave	N
36633189	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	NOT APPLICABLE	DRIVER INATTENTION	53	34	STOPPED IN TRAFFIC	SLOWED OR STOPPING	Tue	RAMP	Edwards Ave	N
36634670	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	WEST	DRIVER INATTENTION	NOT APPLICABLE	33	34	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Tue	MIDDLE COUNTRY RD	Driveway	N
36650702	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		TURNING IMPROPER		75		MAKING LEFT TURN		Sun	MIDDLE COUNTRY RD	Fresh Pond Ave	N
36657413	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		NORTH		DRIVER INATTENTION		22		GOING STRAIGHT AHEAD		Fri	EDWARDS AVE	Ramp	N
36671651	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		FELL ASLEEP		19		GOING STRAIGHT AHEAD		Sun	MIDDLE COUNTRY RD	Driveway	N
36682362	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH-WEST	WEST	TURNING IMPROPER	NOT APPLICABLE	77	20	MAKING LEFT TURN	GOING STRAIGHT AHEAD	Mon	MIDDLE COUNTRY RD	Fresh Pond Ave	N
36684107	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	NOT APPLICABLE	PAVEMENT SLIPPERY	30	49	STOPPED IN TRAFFIC	SLOWED OR STOPPING	Tue	RAMP	Edwards Ave	N
36711131	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	DRIVER INATTENTION	NOT APPLICABLE	25	72	GOING STRAIGHT AHEAD	STOPPED IN TRAFFIC	Tue	MIDDLE COUNTRY RD	Edwards Ave	N
36725567	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH-WEST	NORTH-EAST	NOT APPLICABLE	DRIVER INATTENTION	29	55	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Fri	EDWARDS AVE		N
36729252	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH-EAST	WEST	FAILURE TO YIELD RIGHT OF WAY	NOT APPLICABLE	58	55	MAKING LEFT TURN	GOING STRAIGHT AHEAD	Thu	MIDDLE COUNTRY RD	Unnamed Street	N
36729253	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	DRIVER INATTENTION	NOT APPLICABLE	21	28	GOING STRAIGHT AHEAD	STOPPED IN TRAFFIC	Thu	MIDDLE COUNTRY RD	Driveway	N
36729268	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	NOT APPLICABLE	FOLLOWING TOO CLOSELY	53	20	SLOWED OR STOPPING	SLOWED OR STOPPING	Mon	MIDDLE COUNTRY RD	Edwards Ave	N
36731589	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	SOUTH	TRAFFIC CONTROL DEVICES DISREGARDED	TRAFFIC CONTROL DEVICES DISREGARDED	39	33	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Sat	MIDDLE COUNTRY RD	Edwards Ave	N
36737059	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	DRIVER INATTENTION	NOT APPLICABLE	63	79	GOING STRAIGHT AHEAD	STOPPED IN TRAFFIC	Tue	MIDDLE COUNTRY RD	Edwards Ave	N
36744575	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	OTHER	EAST	EAST	FOLLOWING TOO CLOSELY	UNKNOWN	22		GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Sat	MIDDLE COUNTRY RD	Fresh Pond Ave	N
36757012	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		ANIMAL'S ACTION		27		GOING STRAIGHT AHEAD		Fri	[Route] 25	Ramp	N
36762598	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	FOLLOWING TOO CLOSELY	NOT APPLICABLE	18	42	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Fri	MIDDLE COUNTRY RD	Driveway	N
36777243	NOT APPLICABLE	NOT APPLICABLE	BUS	TRUCK	WEST	WEST	DRIVER INATTENTION	NOT APPLICABLE	47	44	SLOWED OR STOPPING	STOPPED IN TRAFFIC	Thu	MIDDLE COUNTRY RD	FRESH POND AVE	N
36785190	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH-EAST	NORTH-EAST	VIEW OBSTRUCTED/LIMITED	VIEW OBSTRUCTED/LIMITED	25	53	MAKING RIGHT TURN	MAKING RIGHT TURN	Tue	RAMP	Edwards Ave	N
36787576	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH	SOUTH	DRIVER INATTENTION	NOT APPLICABLE	18	69	STARTING IN TRAFFIC	STOPPED IN TRAFFIC	Fri	EDWARDS AVE	MIDDLE COUNTRY RD	N
36787586	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	FOLLOWING TOO CLOSELY	NOT APPLICABLE	18	53	GOING STRAIGHT AHEAD	SLOWED OR STOPPING	Tue	MIDDLE COUNTRY RD	TIMBER DR	N
36833057	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		SOUTH-EAST		TRAFFIC CONTROL DEVICES DISREGARDED		21		MAKING RIGHT TURN		Wed	EDWARDS AVE	Ramp	N
36834392	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		FELL ASLEEP		26		GOING STRAIGHT AHEAD		Sun	MIDDLE COUNTRY RD	Unnamed Street	N
36834395	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	FOLLOWING TOO CLOSELY	NOT APPLICABLE	17	36	GOING STRAIGHT AHEAD	SLOWED OR STOPPING	Fri	MIDDLE COUNTRY RD	Edwards Ave	N
36834418	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	WEST	FAILURE TO YIELD RIGHT OF WAY	PASSING OR LANE USAGE IMPROPERLY	76	60	MAKING LEFT TURN	GOING STRAIGHT AHEAD	Wed	MIDDLE COUNTRY RD	Edwards Ave	N
36836093	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	DRIVER INATTENTION	NOT APPLICABLE	18	19	GOING STRAIGHT AHEAD	SLOWED OR STOPPING	Fri	MIDDLE COUNTRY RD	Driveway	N
36856298	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	EAST	TIRE FAILURE/INADEQUATE	NOT APPLICABLE	20	46	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Mon	MIDDLE COUNTRY RD	Fresh Pond Ave	N
36861105	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	SOUTH	FAILURE TO YIELD RIGHT OF WAY	NOT APPLICABLE	50	31	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Wed	EDWARDS AVE	River Rd	N
36866025	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH	NORTH-EAST	NOT APPLICABLE	FAILURE TO YIELD RIGHT OF WAY	60	79	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Sun	EDWARDS AVE	Ramp	N
36873931	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	NORTH	NOT APPLICABLE	UNSAFE SPEED	21	19	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Sat	MIDDLE COUNTRY RD	Ramp	N
36880094	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH	SOUTH	VIEW OBSTRUCTED/LIMITED	NOT APPLICABLE	30	31	MAKING LEFT TURN	GOING STRAIGHT AHEAD	Fri	EDWARDS AVE	Middle Country Rd	N
36881305	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		NORTH-WEST		REACTION TO OTHER UNINVOLVED VEHICL		81		AVOIDING OBJECT IN ROADWAY		Thu	RAMP	MIDDLE COUNTRY RD	N
36889620	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	PASSING OR LANE USAGE IMPROPERLY	PASSING OR LANE USAGE IMPROPERLY	78	55	SLOWED OR STOPPING	GOING STRAIGHT AHEAD	Sat	MIDDLE COUNTRY RD	Unnamed Street	N
36900124	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	NORTH	FOLLOWING TOO CLOSELY	NOT APPLICABLE	79	26	GOING STRAIGHT AHEAD	STOPPED IN TRAFFIC	Wed	EDWARDS AVE	Middle Country Rd	N
36913477	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH	SOUTH	FOLLOWING TOO CLOSELY	NOT APPLICABLE	36	62	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Wed	EDWARDS AVE	Middle Country Rd	N
36915092	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	TRUCK	EAST	EAST	FOLLOWING TOO CLOSELY	NOT APPLICABLE	30	41	SLOWED OR STOPPING	SLOWED OR STOPPING	Wed	MIDDLE COUNTRY RD	Edwards Ave	N
36926000	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		WEST		ANIMAL'S ACTION		27		GOING STRAIGHT AHEAD		Mon	MIDDLE COUNTRY RD	Driveway	N
36940813	PED/BICYCLIST AT INTERSECTION	ALONG HIGHWAY WITH TRAFFIC	CAR/VAN/PICKUP	BICYCLE	NORTH	NORTH-WEST	DRIVER INEXPERIENCE	NOT APPLICABLE	51	58	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Sun	EDWARDS AVE	River Rd	N
36944475	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		WEST		ANIMAL'S ACTION		27		GOING STRAIGHT AHEAD		Sun	STATE HWY 25	Middle Country Rd	N
36947562	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	DRIVER INATTENTION	NOT APPLICABLE	26	45	SLOWED OR STOPPING	STOPPED IN TRAFFIC	Wed	MIDDLE COUNTRY RD	Unnamed Street	N
36955322	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	NORTH-WEST	DRIVER INATTENTION	NOT APPLICABLE	23	49	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Sun	EDWARDS AVE	River Rd	N
36963074	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		ANIMAL'S ACTION		54		GOING STRAIGHT AHEAD		Thu	MIDDLE COUNTRY RD	Fresh Pond Ave	N
36973650	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	TRUCK	EAST	EAST	DRIVER INATTENTION	NOT APPLICABLE	59	64	GOING STRAIGHT AHEAD	STARTING IN TRAFFIC	Fri	MIDDLE COUNTRY RD	Ramp	N
36980332	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	NORTH	ANIMAL'S ACTION	NOT APPLICABLE	26		GOING STRAIGHT AHEAD	PARKED	Mon	EDWARDS AVE	Grumman Blvd	N
36989922	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	WEST	DRIVER INATTENTION	NOT APPLICABLE	67	57	SLOWED OR STOPPING	STOPPED IN TRAFFIC	Sun	MIDDLE COUNTRY RD	Edwards Ave	N
36990235	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		NORTH		DRIVER INATTENTION		19		GOING STRAIGHT AHEAD		Mon	EDWARDS AVE	Ramp	N
36991958	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	OTHER	SOUTH	SOUTH	NOT APPLICABLE	UNKNOWN	23		GOING STRAIGHT AHEAD	MAKING LEFT TURN	Fri	EDWARDS AVE	Ramp	N
37015189	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	DRIVER INATTENTION	NOT APPLICABLE	30	29	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Fri	MIDDLE COUNTRY RD	Unnamed Street	N
37016656	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH-EAST	NORTH-EAST	FOLLOWING TOO CLOSELY	NOT APPLICABLE	55	23	MAKING LEFT TURN	MAKING LEFT TURN	Sun	MIDDLE COUNTRY RD	Edwards Ave	N
37032375	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	PAVEMENT SLIPPERY	NOT APPLICABLE	19	33	SLOWED OR STOPPING	GOING STRAIGHT AHEAD	Thu	MIDDLE COUNTRY RD		N
37043648	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH	WEST	FAILURE TO YIELD RIGHT OF WAY	NOT APPLICABLE	23	44	MAKING LEFT TURN	GOING STRAIGHT AHEAD	Sun	MIDDLE COUNTRY RD	Ramp	N
37053195	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	SOUTH	FAILURE TO YIELD RIGHT OF WAY	NOT APPLICABLE	22	47	MAKING LEFT TURN	GOING STRAIGHT AHEAD	Tue	EDWARDS AVE	Middle Country Rd	N
37057975	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		ANIMAL'S ACTION		60		GOING STRAIGHT AHEAD		Thu	MIDDLE COUNTRY RD	Unnamed Street	N
37073459	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	WEST	FOLLOWING TOO CLOSELY	NOT APPLICABLE	77	44	GOING STRAIGHT AHEAD	STOPPED IN TRAFFIC	Mon	MIDDLE COUNTRY RD	Ramp	N
37077629	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	WEST	PASSING OR LANE USAGE IMPROPERLY	NOT APPLICABLE	42	30	GOING STRAIGHT AHEAD	STOPPED IN TRAFFIC	Tue	MIDDLE COUNTRY RD	EDWARDS AVE	N
37101377	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	NORTH	TRAFFIC CONTROL DEVICES DISREGARDED	NOT APPLICABLE	84	40	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Fri	EDWARDS AVE	River Rd	N
37110980	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	OTHER	SOUTH	SOUTH	NOT APPLICABLE	UNSAFE SPEED	26		GOING STRAIGHT AHEAD	MAKING RIGHT TURN	Wed	EDWARDS AVE	Ramp	N
37120778	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	PAVEMENT SLIPPERY	FOLLOWING TOO CLOSELY	31	44	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Tue	MIDDLE COUNTRY RD	State Hwy 25	N
37121452	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		SOUTH		PAVEMENT SLIPPERY		46		GOING STRAIGHT AHEAD		Tue	EDWARDS AVE	Grumman Blvd	N
37178240	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	WEST	DRIVER INATTENTION	NOT APPLICABLE	58	43	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Sat	MIDDLE COUNTRY RD	Ramp	N
37205797	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		WEST		PAVEMENT SLIPPERY		31		MAKING RIGHT TURN		Wed	MIDDLE COUNTRY RD	Ramp	N
37219616	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	WEST	NOT APPLICABLE	FAILURE TO YIELD RIGHT OF WAY	47	48	MAKING RIGHT TURN	MAKING RIGHT TURN	Fri	MIDDLE COUNTRY RD	Ramp	N
37220770	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	TRUCK	EAST	EAST	FOLLOWING TOO CLOSELY	NOT APPLICABLE	42	62	GOING STRAIGHT AHEAD	STOPPED IN TRAFFIC	Mon	MIDDLE COUNTRY RD	Edwards Ave	N
37222968	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	EAST	FAILURE TO YIELD RIGHT OF WAY	NOT APPLICABLE	40	57	MAKING LEFT TURN	GOING STRAIGHT AHEAD	Thu	MIDDLE COUNTRY RD	Edwards Ave	N
37226366	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		DRIVER INATTENTION				GOING STRAIGHT AHEAD		Sat	MIDDLE COUNTRY RD	Edwards Ave	N
37226371	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	GLARE	NOT APPLICABLE	39	79	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Sun	MIDDLE COUNTRY RD	Fresh Pond Ave	N
37233521	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	EAST	TURNING IMPROPER	NOT APPLICABLE	54	74	MAKING LEFT TURN	GOING STRAIGHT AHEAD	Sat	MIDDLE COUNTRY RD	Driveway	N
37242574	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		NORTH		ANIMAL'S ACTION		54		GOING STRAIGHT AHEAD		Sat	EDWARDS AVE	Middle Country Rd	N
37249023	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		WEST		ANIMAL'S ACTION		26		GOING STRAIGHT AHEAD		Sat	MIDDLE COUNTRY RD	Fresh Pond Ave	N
37255274	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	NORTH	REACTION TO OTHER UNINVOLVED VEHICL	REACTION TO OTHER UNINVOLVED VEHICL	31	17	STOPPED IN TRAFFIC	GOING STRAIGHT AHEAD	Fri	EDWARDS AVE	Ramp	N
37264227	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	NORTH	BACKING UNSAFELY	NOT APPLICABLE	35	59	BACKING	GOING STRAIGHT AHEAD	Wed	MIDDLE COUNTRY RD	Fresh Pond Ave	N
37269134	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		SOUTH		DRIVER INATTENTION		19		GOING STRAIGHT AHEAD		Sat	EDWARDS AVE	Unnamed Street	N
37271399	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	OTHER	EAST	WEST	NOT APPLICABLE	PASSING OR LANE USAGE IMPROPERLY	54		GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Tue	MIDDLE COUNTRY RD	EDWARDS AVE	N
37290732	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	NORTH	NOT APPLICABLE	BRAKES DEFECTIVE	28	65	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Wed	EDWARDS AVE	RIVER RD	N
37300859	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		WEST		REACTION TO OTHER UNINVOLVED VEHICL		46		GOING STRAIGHT AHEAD		Tue	MIDDLE COUNTRY RD		N
37329539	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	WEST	FAILURE TO YIELD RIGHT OF WAY	NOT APPLICABLE		18	UNKNOWN	GOING STRAIGHT AHEAD	Wed	MIDDLE COUNTRY RD		N
37335009	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	NOT APPLICABLE	FOLLOWING TOO CLOSELY	49	26	STOPPED IN TRAFFIC	GOING STRAIGHT AHEAD	Sun	MIDDLE COUNTRY RD	Edwards Ave	N
37376759	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		WEST		ANIMAL'S ACTION		37		GOING STRAIGHT AHEAD		Tue	ROUTE 25A	Ramp	N
37394968	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH	NORTH-WEST	NOT APPLICABLE	TURNING IMPROPER	69	17	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Wed	EDWARDS AVE		N
37397608	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	NOT APPLICABLE	FOLLOWING TOO CLOSELY	60	21	STOPPED IN TRAFFIC	GOING STRAIGHT AHEAD	Fri	MIDDLE COUNTRY RD	Driveway	N
37403531	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		ANIMAL'S ACTION		22		GOING STRAIGHT AHEAD		Fri	MIDDLE COUNTRY RD	Unnamed Street	N
37411618	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH	NORTH	BACKING UNSAFELY	NOT APPLICABLE	58	43	BACKING	STOPPED IN TRAFFIC	Mon	EDWARDS AVE	Middle Country Rd	N
37412110	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH-EAST	NORTH-EAST	NOT APPLICABLE	FAILURE TO YIELD RIGHT OF WAY	62	60	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Sat	EDWARDS AVE	Ramp	N
37415700	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	OTHER	NORTH	NORTH	NOT APPLICABLE	FOLLOWING TOO CLOSELY	64		GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Wed	EDWARDS AVE	Middle Country Rd	N
37425726	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH-EAST	EAST	FAILURE TO YIELD RIGHT OF WAY	NOT APPLICABLE	56	27	MAKING U TURN	GOING STRAIGHT AHEAD	Sat	MIDDLE COUNTRY RD		N
37441823	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	TRUCK	SOUTH	SOUTH-EAST	PASSING OR LANE USAGE IMPROPERLY	NOT APPLICABLE	50	43	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Mon	EDWARDS AVE	River Rd	N
37450039	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	FOLLOWING TOO CLOSELY	NOT APPLICABLE	52	29	GOING STRAIGHT AHEAD	SLOWED OR STOPPING	Sun	MIDDLE COUNTRY RD	Edwards Ave	N
37466605	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH	NORTH	NOT APPLICABLE	DRIVER INATTENTION	34	62	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Sat	EDWARDS AVE	Ramp	N
37483972	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	DRIVER INATTENTION	NOT APPLICABLE	37	35	OTHER	STOPPED IN TRAFFIC	Fri	MIDDLE COUNTRY RD		N
37487298	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	NORTH	NOT APPLICABLE	DRIVER INATTENTION	62	26	MAKING RIGHT TURN	MAKING RIGHT TURN	Wed	EDWARDS AVE	Ramp	N
37488085	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		NORTH		PAVEMENT SLIPPERY		37		GOING STRAIGHT AHEAD		Wed	EDWARDS AVE	River Rd	N
37500985	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	NORTH	FOLLOWING TOO CLOSELY	NOT APPLICABLE	56	44	GOING STRAIGHT AHEAD	STOPPED IN TRAFFIC	Sun	EDWARDS AVE	Middle Country Rd	N
37506671	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	NOT APPLICABLE	DRIVER INATTENTION	61	22	STOPPED IN TRAFFIC	SLOWED OR STOPPING	Mon	RAMP	Edwards Ave	N
37521210	NOT APPLICABLE	NOT APPLICABLE	TRUCK	CAR/VAN/PICKUP	NORTH	SOUTH	TURNING IMPROPER	NOT APPLICABLE	48	48	MAKING LEFT TURN	STOPPED IN TRAFFIC	Tue	EDWARDS AVE	Middle Country Rd	N
37526040	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	FOLLOWING TOO CLOSELY	NOT APPLICABLE	25	47	GOING STRAIGHT AHEAD	SLOWED OR STOPPING	Mon	MIDDLE COUNTRY RD	Ramp	N
37529410	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH	NORTH	NOT ENTERED	NOT ENTERED	55	53	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Mon	EDWARDS AVE	Grumman Blvd	N
37621568	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	TRUCK	NORTH	NORTH-EAST	NOT APPLICABLE	FAILURE TO YIELD RIGHT OF WAY	50	42	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Wed	EDWARDS AVE		N
37636522	NOT APPLICABLE	NOT APPLICABLE	OTHER	CAR/VAN/PICKUP	EAST	EAST	UNKNOWN	NOT APPLICABLE		50	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Tue	MIDDLE COUNTRY RD	Timber Dr	N
37639933	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		ANIMAL'S ACTION		46		GOING STRAIGHT AHEAD		Thu	MIDDLE COUNTRY RD	Driveway	N
37645346	NOT APPLICABLE	NOT APPLICABLE	TRUCK		NORTH		FELL ASLEEP		53		GOING STRAIGHT AHEAD		Wed	EDWARDS AVE	Grumman Blvd	N
37645417	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	DRIVER INATTENTION	NOT APPLICABLE	76	56	STARTING IN TRAFFIC	STARTING IN TRAFFIC	Mon	MIDDLE COUNTRY RD	Edwards Ave	N
37659860	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		ANIMAL'S ACTION		63		GOING STRAIGHT AHEAD		Wed	MIDDLE COUNTRY RD	Unnamed Street	N
37661940	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	SOUTH-WEST	NOT APPLICABLE	FAILURE TO YIELD RIGHT OF WAY	58	19	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Fri	MIDDLE COUNTRY RD	EDWARDS AVE	N
37683593	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	REACTION TO OTHER UNINVOLVED VEHICL	NOT APPLICABLE	35	24	SLOWED OR STOPPING	SLOWED OR STOPPING	Thu	ROUTE 25A	Ramp	N
37694788	NOT APPLICABLE	NOT APPLICABLE	MOTORCYCLE	CAR/VAN/PICKUP	EAST	EAST	NOT APPLICABLE	DRIVER INATTENTION	52	24	STOPPED IN TRAFFIC	GOING STRAIGHT AHEAD	Mon	RAMP	Edwards Ave	N

Case Num	Case Year	County	Comp Muni	Muni Type	Comp Ref Marker	At Intersection	Comp X	Comp Y	Accd Date	Accd Time	Severity	Num Of Injuries	Num Serious Injuries	Num Of Fatalities	Num Of Vehicles	Accd Type	Collision Type	Traffic Control	Light Condition	Weather	Road Surf Cond
37702922	2019	SUFFOLK	Riverhead	3	25 07041388	Y	689194.0074	4533116.1102	01/07/2019	08:24am	PROPERTY DAMAGE	0		0	1	COLL. W/LIGHT SUPPORT/UTILITY POLE	OTHER	NONE	DAYLIGHT	CLEAR	DRY
37706586	2019	SUFFOLK	Riverhead	3		N	689663.3096	4532997.0360	01/23/2019	06:46am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	TRAFFIC SIGNAL	DAWN	CLEAR	DRY
37718180	2019	SUFFOLK	Riverhead	3	25 07041390	N	689468.1037	4533091.6657	01/31/2019	07:39pm	PROPERTY DAMAGE	0		0	1	COLLISION WITH DEER	OTHER	NONE	DARK-ROAD LIGHTED	CLEAR	DRY
37777501	2019	SUFFOLK	Riverhead	3		N	686076.9929	4533097.3569	03/02/2019	07:17am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	SIDESWIPE	TRAFFIC SIGNAL	DAWN	SNOW	SNOW/ICE
37779126	2019	SUFFOLK	Brookhaven	3		Y	690351.2590	4530485.8920	02/05/2019	07:48am	NON-REPORTABLE	0		0	4	COLLISION WITH MOTOR VEHICLE	REAR END	STOP SIGN	DAYLIGHT	FOG/SMOG/SMOKE	DRY
37780097	2019	SUFFOLK	Riverhead	3	25 07041364	N	685207.4610	4532915.6430	02/28/2019	08:19pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT TURN (AGAINST OTHER CAR)	NONE	DARK-ROAD LIGHTED	CLOUDY	DRY
37782769	2019	SUFFOLK	Riverhead	3		Y	689658.6817	4533059.9911	03/05/2019	01:58pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	DRY
37788039	2019	SUFFOLK	Brookhaven	3	24 07043000	Y	690351.1723	4530486.4551	02/26/2019	09:20am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	STOP SIGN	DAYLIGHT	CLEAR	DRY
37789772	2019	SUFFOLK	Riverhead	3	25 07041391	Y	689658.1276	4533060.7285	03/08/2019	06:14pm	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	TRAFFIC SIGNAL	DUSK	CLEAR	DRY
37822793	2019	SUFFOLK	Riverhead	3	25 07041391	Y	689658.1276	4533060.7285	03/30/2019	02:34pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	DRY
37828047	2019	SUFFOLK	Brookhaven	3	24 07043000	N	690298.4180	4530519.0101	04/07/2019	03:40pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	OVERTAKING	NONE	DAYLIGHT	CLEAR	DRY
37835701	2019	SUFFOLK	Riverhead	3	25 07041391	N	689568.5557	4533076.0104	04/10/2019	07:11am	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	LEFT TURN (AGAINST OTHER CAR)	NONE	DAYLIGHT	CLEAR	DRY
37835708	2019	SUFFOLK	Riverhead	3	25 07041377	Y	687370.7600	4533172.0000	04/10/2019	02:22pm	PROPERTY DAMAGE AND INJURY	3	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
37844762	2019	SUFFOLK	Riverhead	3		Y	690054.1685	4530825.8371	04/03/2019	09:06am	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	OVERTAKING	STOP SIGN	DAYLIGHT	CLEAR	DRY
37855427	2019	SUFFOLK	Riverhead	3	25 07041392	N	689699.1063	4533053.6120	04/04/2019	09:34am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
37856117	2019	SUFFOLK	Riverhead	3		N	690048.5023	4530838.8143	04/24/2019	01:10pm	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	STOP SIGN	DAYLIGHT	CLEAR	DRY
37875053	2019	SUFFOLK	Riverhead	3		N	689713.0594	4532579.7916	05/08/2019	03:11pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
37885241	2019	SUFFOLK	Riverhead	3	25 07041391	N	689562.1570	4533077.0076	05/13/2019	03:39pm	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	RAIN	WET
37885333	2019	SUFFOLK	Riverhead	3	25 07041391	Y	689658.1276	4533060.7285	05/18/2019	06:51pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT TURN (WITH OTHER CAR)	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	DRY
37886192	2019	SUFFOLK	Brookhaven	3	24 07043000	N	690297.2391	4530519.5119	05/13/2019	08:50am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	STOP SIGN	DAYLIGHT	CLOUDY	WET
37887786	2019	SUFFOLK	Brookhaven	3	24 07043000	N	690271.1300	4530531.7100	05/15/2019	06:00am	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	STOP SIGN	DAYLIGHT	RAIN	WET
37893423	2019	SUFFOLK	Riverhead	3	25 07041373	N	686648.9906	4533154.9855	05/15/2019	03:47pm	PROPERTY DAMAGE AND INJURY	1	0	0	4	COLLISION WITH MOTOR VEHICLE	OTHER	NONE	DAYLIGHT	CLEAR	DRY
37901529	2019	SUFFOLK	Riverhead	3	25 07041390	N	689479.1472	4533089.9446	05/27/2019	10:22am	PROPERTY DAMAGE AND INJURY	3	0	0	4	COLLISION WITH OTHER PEDESTRIAN	OTHER	NONE	DAYLIGHT	CLEAR	DRY
37901955	2019	SUFFOLK	Brookhaven	3	24 07043000	N	690321.2904	4530497.7672	05/27/2019	02:30pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	OVERTAKING	NONE	DAYLIGHT	CLEAR	DRY
37916848	2019	SUFFOLK	Riverhead	3	25 07041392	N	689736.0866	4533047.7116	06/07/2019	06:15pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLOUDY	DRY
37931949	2019	SUFFOLK	Riverhead	3		N	689937.5880	4531167.6224	02/19/2019	04:00am	PROPERTY DAMAGE	0		0	1	COLLISION WITH FENCE	OTHER	NONE	DARK-ROAD UNLIGHTED	CLEAR	DRY
37939154	2019	SUFFOLK	Riverhead	3	25 07041391	N	689594.1629	4533071.9304	06/14/2019	08:26pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	HEAD ON	TRAFFIC SIGNAL	DUSK	CLEAR	DRY
37952036	2019	SUFFOLK	Brookhaven	3		Y	690144.5056	4530641.3736	06/11/2019	06:29pm	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	OVERTAKING	NONE	DAYLIGHT	CLEAR	DRY
37970118	2019	SUFFOLK	Riverhead	3		N	689670.4002	4532936.0465	06/22/2019	11:53am	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	DRY
37970138	2019	SUFFOLK	Riverhead	3		Y	690054.4778	4530826.2268	07/07/2019	03:57pm	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	STOP SIGN	DAYLIGHT	CLEAR	DRY
37978698	2019	SUFFOLK	Riverhead	3	25 07041382	N	688134.9646	4533123.4018	07/11/2019	12:45pm	PROPERTY DAMAGE AND INJURY	2	0	0	1	COLL. W/LIGHT SUPPORT/UTILITY POLE	OTHER	NONE	DAYLIGHT	CLEAR	DRY
37993279	2019	SUFFOLK	Brookhaven	3		N	690143.0102	4530622.6684	07/03/2019	08:13pm	PROPERTY DAMAGE AND INJURY	2	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	STOP SIGN	DUSK	CLEAR	DRY
38006745	2019	SUFFOLK	Brookhaven	3	24 07043000	Y	690350.2808	4530486.7926	07/21/2019	10:00am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	NONE	DAYLIGHT	CLEAR	DRY
38007251	2019	SUFFOLK	Riverhead	3		Y	686032.1536	4533100.4828	07/29/2019	10:48am	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	DRY
38013416	2019	SUFFOLK	Riverhead	3	25 07041364	N	685368.8681	4532961.4645	07/31/2019	07:41am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
38024812	2019	SUFFOLK	Riverhead	3	25 07041389	N	689277.0142	4533111.2417	08/09/2019	07:26pm	NON-REPORTABLE	0		0	1	COLLISION WITH DEER	OTHER	NONE	DAYLIGHT	CLEAR	DRY
38049070	2019	SUFFOLK	Riverhead	3		N	689655.4788	4533108.0588	08/22/2019	08:34am	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	DRY
38050852	2019	SUFFOLK	Riverhead	3		N	689824.9153	4531591.0990	08/19/2019	04:24pm	PROPERTY DAMAGE AND INJURY	2	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
38053016	2019	SUFFOLK	Riverhead	3		N	689681.5189	4532840.4091	08/20/2019	03:49pm	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	LEFT TURN (AGAINST OTHER CAR)	NONE	DAYLIGHT	CLEAR	DRY
38063537	2019	SUFFOLK	Riverhead	3		Y	689658.6817	4533059.9911	08/30/2019	05:42pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	OTHER	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	DRY
38092818	2019	SUFFOLK	Riverhead	3		Y	689658.6817	4533059.9911	09/21/2019	09:43pm	PROPERTY DAMAGE AND INJURY	2	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	TRAFFIC SIGNAL	DARK-ROAD LIGHTED	CLOUDY	DRY
38094854	2019	SUFFOLK	Brookhaven	3	24 07043000	Y	690352.6049	4530485.9164	09/22/2019	06:35pm	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	STOP SIGN	DAYLIGHT	CLEAR	DRY
38099120	2019	SUFFOLK	Riverhead	3	25 07041367	N	685808.9296	4533046.3425	09/21/2019	11:52pm	PROPERTY DAMAGE	0		0	1	COLLISION WITH DEER	OTHER	NONE	DARK-ROAD UNLIGHTED	CLEAR	DRY
38105644	2019	SUFFOLK	Brookhaven	3		N	690345.5945	4530475.0487	10/05/2019	03:30pm	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
38106523	2019	SUFFOLK	Brookhaven	3		Y	690208.7310	4530571.8377	09/19/2019	07:25am	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	NONE	DAYLIGHT	CLEAR	DRY
38110869	2019	SUFFOLK	Riverhead	3	25 07041387	N	688972.9399	4533127.7067	10/07/2019	07:15pm	NON-REPORTABLE	0		0	1	COLLISION WITH ANIMAL	OTHER	NONE	DARK-ROAD LIGHTED	CLEAR	DRY
38118807	2019	SUFFOLK	Riverhead	3	25 07041376	N	687185.9658	4533166.1282	10/07/2019	01:50am	NON-REPORTABLE	0		0	1	COLL. W/LIGHT SUPPORT/UTILITY POLE	OTHER	NONE	DARK-ROAD LIGHTED	CLEAR	DRY
38126150	2019	SUFFOLK	Riverhead	3	25 07041368	N	685947.7026	4533069.7620	10/13/2019	02:43pm	PROPERTY DAMAGE	0		0	3	COLLISION WITH MOTOR VEHICLE	OTHER	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	DRY
38136838	2019	SUFFOLK	Riverhead	3	25 07041367	N	685742.9645	4533035.2102	10/24/2019	05:52am	NON-REPORTABLE	0		0	1	COLLISION WITH DEER	OTHER	NONE	DARK-ROAD UNLIGHTED	CLEAR	DRY
38139030	2019	SUFFOLK	Brookhaven	3		Y	690208.7310	4530571.8377	10/26/2019	04:53pm	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	OVERTAKING	STOP SIGN	DAYLIGHT	CLEAR	DRY
38140674	2019	SUFFOLK	Brookhaven	3	24 07043000	Y	690204.5185	4530559.9105	09/27/2019	07:11am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	LEFT TURN (AGAINST OTHER CAR)	YIELD SIGN	DAYLIGHT	CLEAR	DRY
38146724	2019	SUFFOLK	Riverhead	3	25 07041366	N	685579.9581	4533007.2427	10/31/2019	04:31pm	PROPERTY DAMAGE AND INJURY	2	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
38155420	2019	SUFFOLK	Riverhead	3	25 07041369	N	686121.8595	4533100.7008	11/03/2019	04:48pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	RIGHT TURN (AGAINST OTHER CAR)	NONE	DARK-ROAD LIGHTED	CLEAR	DRY
38159896	2019	SUFFOLK	Riverhead	3	25 07041390	N	689450.0741	4533094.4756	11/05/2019	11:22pm	PROPERTY DAMAGE	0		0	1	COLLISION WITH ANIMAL	OTHER	NONE	DARK-ROAD UNLIGHTED	CLOUDY	DRY
38159930	2019	SUFFOLK	Riverhead	3	25 07041368	N	685872.0022	4533056.9867	11/04/2019	05:17pm	NON-REPORTABLE	0		0	1	COLLISION WITH DEER	OTHER	NONE	DARK-ROAD UNLIGHTED	CLEAR	DRY
38159933	2019	SUFFOLK	Riverhead	3	25 07041377	Y	687370.0016	4533171.9647	11/06/2019	04:12pm	PROPERTY DAMAGE AND INJURY	2	0	0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	STOP SIGN	DAYLIGHT	CLEAR	DRY
38159983	2019	SUFFOLK	Brookhaven	3		Y	690112.2900	4530690.0300	10/07/2019	04:40pm	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	SIDESWIPE	NO PASSING ZONE	DAYLIGHT	CLEAR	DRY
38169523	2019	SUFFOLK	Riverhead	3	25 07041371	N	686391.9568	4533139.5463	10/31/2019	02:48pm	PROPERTY DAMAGE	0		0	1	COLLISION WITH DEER	OTHER	NONE	DAYLIGHT	CLOUDY	DRY
38171555	2019	SUFFOLK	Riverhead	3	25 07041380	N	687835.0602	4533141.3827	11/06/2019	07:15pm	PROPERTY DAMAGE	0		0	1	COLLISION WITH ANIMAL	OTHER	NONE	DARK-ROAD LIGHTED	CLEAR	DRY
38185572	2019	SUFFOLK	Riverhead	3	25 07041389	N	689313.0077	4533109.1307	11/17/2019	01:50pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLOUDY	DRY
38197633	2019	SUFFOLK	Riverhead	3		N	685999.4492	4533104.3407	11/28/2019	03:02pm	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	TRAFFIC SIGNAL	DAYLIGHT	CLEAR	DRY
38198446	2019	SUFFOLK	Riverhead	3		Y	689914.5989	4531209.3278	11/29/2019	12:03pm	INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	RIGHT ANGLE	NONE	DAYLIGHT	CLEAR	DRY
38209224	2019	SUFFOLK	Riverhead	3	25 07041363	Y	685131.9073	4532894.3259	11/25/2019	05:18pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	TRAFFIC SIGNAL	DARK-ROAD UNLIGHTED	CLEAR	DRY
38210631	2019	SUFFOLK	Riverhead	3		N	689687.7184	4532787.0835	11/29/2019	08:38pm	PROPERTY DAMAGE	0		0	1	COLLISION WITH DEER	OTHER	NO PASSING ZONE	DARK-ROAD UNLIGHTED	CLEAR	DRY
38216774	2019	SUFFOLK	Riverhead	3	25 07041364	N	685247.1276	4532926.9039	10/24/2019	05:45am	PROPERTY DAMAGE	0		0	1	COLLISION WITH DEER	OTHER	NONE	DARK-ROAD UNLIGHTED	CLEAR	DRY
38223517	2019	SUFFOLK	Riverhead	3	25 07041370	N	686286.9802	4533131.2512	12/05/2019	07:50pm	NON-REPORTABLE	0		0	1	COLLISION WITH ANIMAL	OTHER	NONE	DARK-ROAD UNLIGHTED	CLEAR	DRY
38225894	2019	SUFFOLK	Riverhead	3	25 07041371	N	686452.9734	4533144.3524	12/03/2019	03:47pm	PROPERTY DAMAGE AND INJURY	1	0	0	3	COLLISION WITH MOTOR VEHICLE	OTHER	NONE	DUSK	CLEAR	DRY
38230747	2019	SUFFOLK	Brookhaven	3		Y	690349.6008	4530481.9155	11/13/2019	07:39am	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	STOP SIGN	DAYLIGHT	CLEAR	DRY
38239566	2019	SUFFOLK	Riverhead	3	25 07041363	Y	685131.9073	4532894.3259	12/14/2019	01:54pm	NON-REPORTABLE	0		0	2	COLLISION WITH MOTOR VEHICLE	REAR END	TRAFFIC SIGNAL	DAYLIGHT	RAIN	WET
38253630	2019	SUFFOLK	Riverhead	3	25 07041379	N	687737.1384	4533155.0521	12/23/2019	07:11pm	PROPERTY DAMAGE	0		0	1	COLLISION WITH ANIMAL	OTHER	NONE	DARK-ROAD LIGHTED	CLEAR	DRY
38264062	2020	SUFFOLK	Riverhead	3	25 07041389	N	689327.0293	4533108.3072	01/01/2020	04:24am	PROPERTY DAMAGE	0		0	1	COLL. W/LIGHT SUPPORT/UTILITY POLE	OTHER	NO PASSING ZONE	DARK-ROAD UNLIGHTED	CLOUDY	DRY
38291853	2020	SUFFOLK	Riverhead	3	25 07041391	N	689537.1412	4533080.9063	01/23/2020	08:47am	PROPERTY DAMAGE AND INJURY	1	0	0	2	COLLISION WITH MOTOR VEHICLE	REAR END	NONE	DAYLIGHT	CLEAR	DRY
38293886	2019	SUFFOLK	Riverhead	3		N	689685.8352	4532803.2817	12/26/2019	03:15am	PROPERTY DAMAGE	0		0	1	COLLISION WITH DEER	OTHER	UNKNOWN	DARK-ROAD UNLIGHTED	CLEAR	DRY
38307780	2020	SUFFOLK	Riverhead	3		N	689670.8590	4532932.0999	01/24/2020	04:49pm	PROPERTY DAMAGE	0		0	2	COLLISION WITH MOTOR VEHICLE	LEFT TURN (WITH OTHER CAR)	NONE	DUSK	CLEAR	DRY

Case Num	Ped Loc	Ped Action	Veh Type Veh 1	Veh Type Veh 2	Dir Of Travel Veh 1	Dir Of Travel Veh 2	Apparent Factor Veh 1	Apparent Factor Veh 2	Driver Age Veh 1	Driver Age Veh 2	PRE_ACCD_ACTN_VEH1	PRE_ACCD_ACTN_VEH2	Day_Of_Week	On Street	Closest Cross Street	Parking Lot Ind
37702922	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		REACTION TO OTHER UNINVOLVED VEHICL		27		SLOWED OR STOPPING		Mon	MIDDLE COUNTRY RD	Driveway	N
37706586	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	NORTH	FOLLOWING TOO CLOSELY	NOT APPLICABLE	38	30	GOING STRAIGHT AHEAD	STOPPED IN TRAFFIC	Wed	EDWARDS AVE	Middle Country Rd	N
37718180	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		WEST		ANIMAL'S ACTION		29		GOING STRAIGHT AHEAD		Thu	MIDDLE COUNTRY RD	Edwards Ave	N
37777501	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH-WEST	SOUTH-EAST	DRIVER INEXPERIENCE	NOT APPLICABLE	20	25	MERGING	STOPPED IN TRAFFIC	Sat	RAMP	Middle Country Rd	N
37779126	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	NOT APPLICABLE	VIEW OBSTRUCTED/LIMITED	43	35	STOPPED IN TRAFFIC	GOING STRAIGHT AHEAD	Tue	RAMP	Edwards Ave	N
37780097	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH	WEST	NOT APPLICABLE	DRIVER INATTENTION	76	79	STOPPED IN TRAFFIC	MAKING RIGHT TURN	Thu	MIDDLE COUNTRY RD	[Route] 25	N
37782769	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH-EAST	NORTH	TURNING IMPROPER	NOT APPLICABLE	19	64	MAKING RIGHT TURN	STOPPED IN TRAFFIC	Tue	EDWARDS AVE	Middle Country Rd	N
37788039	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH-EAST	NORTH-EAST	NOT APPLICABLE	FAILURE TO YIELD RIGHT OF WAY	25	56	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Tue	EDWARDS AVE	Ramp	N
37789772	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	EAST	FAILURE TO YIELD RIGHT OF WAY	NOT APPLICABLE	44	72	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Fri	MIDDLE COUNTRY RD	Edwards Ave	N
37822793	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH-WEST	EAST	FAILURE TO YIELD RIGHT OF WAY	NOT APPLICABLE	67	60	MAKING LEFT TURN	GOING STRAIGHT AHEAD	Sat	MIDDLE COUNTRY RD	Edwards Ave	N
37828047	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH-WEST	NORTH-WEST	FAILURE TO YIELD RIGHT OF WAY	NOT APPLICABLE	81	52	MAKING LEFT TURN	MAKING LEFT TURN	Sun	EDWARDS AVE	Ramp	N
37835701	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	SOUTH	NOT APPLICABLE	FAILURE TO YIELD RIGHT OF WAY	76	31	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Wed	MIDDLE COUNTRY RD	EDWARDS AVE	N
37835708	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	NOT APPLICABLE	FOLLOWING TOO CLOSELY	58	24	STOPPED IN TRAFFIC	GOING STRAIGHT AHEAD	Wed	MIDDLE COUNTRY RD	FRESH POND AVE	N
37844762	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	GLARE	NOT APPLICABLE	54	53	GOING STRAIGHT AHEAD	STOPPED IN TRAFFIC	Wed	RIVER RD	Edwards Ave	N
37855427	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	FOLLOWING TOO CLOSELY	NOT APPLICABLE	43	35	GOING STRAIGHT AHEAD	SLOWED OR STOPPING	Thu	MIDDLE COUNTRY RD	Edwards Ave	N
37856117	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	SOUTH	FAILURE TO YIELD RIGHT OF WAY	NOT APPLICABLE	63	22	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Wed	EDWARDS AVE	River Rd	N
37875053	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	NORTH	FOLLOWING TOO CLOSELY	NOT APPLICABLE	27	24	SLOWED OR STOPPING	SLOWED OR STOPPING	Wed	EDWARDS AVE	Grumman Blvd	N
37885241	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	NOT APPLICABLE	FOLLOWING TOO CLOSELY	18	39	SLOWED OR STOPPING	GOING STRAIGHT AHEAD	Mon	MIDDLE COUNTRY RD	Edwards Ave	N
37885333	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	WEST	TURNING IMPROPER	PASSING OR LANE USAGE IMPROPERLY	19	67	MAKING LEFT TURN	OVERTAKING	Thu	MIDDLE COUNTRY RD	Edwards Ave	N
37886192	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH-WEST	NORTH-WEST	FAILURE TO YIELD RIGHT OF WAY	DRIVER INATTENTION	51	28	MAKING LEFT TURN	GOING STRAIGHT AHEAD	Mon	EDWARDS AVE		N
37887786	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	TRUCK	SOUTH	NORTH-EAST	NOT APPLICABLE	FAILURE TO YIELD RIGHT OF WAY	26	25	MAKING LEFT TURN	MAKING LEFT TURN	Wed	EDWARDS AVE		N
37893423	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	WEST	FOLLOWING TOO CLOSELY	FOLLOWING TOO CLOSELY	26	20	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Wed	MIDDLE COUNTRY RD	Timber Dr	N
37901529	UNKNOWN	UNKNOWN	OTHER	CAR/VAN/PICKUP	NOT APPLICABLE	EAST	NOT APPLICABLE	PASSING OR LANE USAGE IMPROPERLY	30	30	NOT APPLICABLE	GOING STRAIGHT AHEAD	Mon	MIDDLE COUNTRY RD	Edwards Ave	N
37901955	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH-EAST	SOUTH-EAST	NOT APPLICABLE	DRIVER INATTENTION	33	27	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Mon	EDWARDS AVE	Ramp	N
37916848	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	WEST	DRIVER INATTENTION	NOT APPLICABLE	54	30	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Fri	MIDDLE COUNTRY RD	Edwards Ave	N
37931949	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		SOUTH		FELL ASLEEP		28		GOING STRAIGHT AHEAD		Tue	EDWARDS AVE	Unnamed Street	N
37939154	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	EAST	UNSAFE LANE CHANGE	NOT APPLICABLE	28	68	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Fri	MIDDLE COUNTRY RD	Edwards Ave	N
37952036	NOT APPLICABLE	NOT APPLICABLE	TRUCK	BUS	NORTH	NORTH	NOT APPLICABLE	REACTION TO OTHER UNINVOLVED VEHICL	20	64	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Tue	EDWARDS AVE	Mill Rd	N
37970118	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	NORTH	FOLLOWING TOO CLOSELY	NOT APPLICABLE	25	57	GOING STRAIGHT AHEAD	STOPPED IN TRAFFIC	Sat	EDWARDS AVE	Middle Country Rd	N
37970138	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	BUS	WEST	SOUTH	FAILURE TO YIELD RIGHT OF WAY	NOT APPLICABLE	26	58	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Sun	EDWARDS AVE	River Rd	N
37978698	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		DRIVER INATTENTION		19		GOING STRAIGHT AHEAD		Thu	MIDDLE COUNTRY RD	Fresh Pond Ave	N
37993279	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	NORTH	UNSAFE SPEED	FAILURE TO YIELD RIGHT OF WAY	25	51	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Wed	EDWARDS AVE	MILL RD	N
38006745	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH	EAST	NOT APPLICABLE	FAILURE TO YIELD RIGHT OF WAY	28	16	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Sun	EDWARDS AVE	Ramp	N
38007251	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH-WEST	WEST	NOT APPLICABLE	FAILURE TO YIELD RIGHT OF WAY	54	57	MAKING RIGHT TURN	MAKING RIGHT TURN	Mon	RAMP		N
38013416	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	DRIVER INATTENTION	NOT APPLICABLE	32	27	GOING STRAIGHT AHEAD	SLOWED OR STOPPING	Wed	MIDDLE COUNTRY RD	State Hwy 25	N
38024812	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		WEST		ANIMAL'S ACTION		54		GOING STRAIGHT AHEAD		Fri	MIDDLE COUNTRY RD	Driveway	N
38049070	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH	SOUTH	FOLLOWING TOO CLOSELY	NOT APPLICABLE	22	62	STARTING IN TRAFFIC	STOPPED IN TRAFFIC	Thu	EDWARDS AVE	Middle Country Rd	N
38050852	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	NORTH	DRIVER INATTENTION	NOT APPLICABLE	27	32	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Mon	EDWARDS AVE	Grumman Blvd	N
38053016	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	SOUTH	FAILURE TO YIELD RIGHT OF WAY	NOT APPLICABLE	22	53	MAKING LEFT TURN	GOING STRAIGHT AHEAD	Tue	EDWARDS AVE	Middle Country Rd	N
38063537	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	NORTH	REACTION TO OTHER UNINVOLVED VEHICL	NOT APPLICABLE	54	61	BACKING	STOPPED IN TRAFFIC	Fri	EDWARDS AVE	Middle Country Rd	N
38092818	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	NORTH	DRIVER INATTENTION	NOT APPLICABLE	60	62	GOING STRAIGHT AHEAD	STOPPED IN TRAFFIC	Sat	EDWARDS AVE	Middle Country Rd	N
38094854	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH-EAST	NORTH-EAST	NOT APPLICABLE	FAILURE TO YIELD RIGHT OF WAY	36	79	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Sun	EDWARDS AVE	Ramp	N
38099120	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		ANIMAL'S ACTION		22		GOING STRAIGHT AHEAD		Sat	MIDDLE COUNTRY RD	Ramp	N
38105644	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	FOLLOWING TOO CLOSELY	NOT APPLICABLE	19	65	SLOWED OR STOPPING	SLOWED OR STOPPING	Sat	RAMP	Edwards Ave	N
38106523	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	NORTH-WEST	NOT APPLICABLE	TURNING IMPROPER	31		GOING STRAIGHT AHEAD	MAKING LEFT TURN	Thu	EDWARDS AVE	Ramp	N
38110869	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		ANIMAL'S ACTION		73		GOING STRAIGHT AHEAD		Mon	MIDDLE COUNTRY RD	Driveway	N
38118807	NOT APPLICABLE	NOT APPLICABLE	OTHER		NORTH-WEST		PASSING OR LANE USAGE IMPROPERLY				UNKNOWN		Mon	MIDDLE COUNTRY RD	Unnamed Street	N
38126150	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	DRIVER INATTENTION	NOT APPLICABLE	57	27	GOING STRAIGHT AHEAD	STOPPED IN TRAFFIC	Sun	MIDDLE COUNTRY RD	Ramp	N
38136838	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		ANIMAL'S ACTION		48		GOING STRAIGHT AHEAD		Thu	MIDDLE COUNTRY RD	Ramp	N
38139030	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	NORTH	TURNING IMPROPER	UNSAFE LANE CHANGE	59	18	MAKING LEFT TURN	GOING STRAIGHT AHEAD	Sat	EDWARDS AVE	Ramp	N
38140674	NOT APPLICABLE	NOT APPLICABLE	BUS	CAR/VAN/PICKUP	SOUTH	NORTH	NOT APPLICABLE	DRIVER INEXPERIENCE	60	28	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Fri	EDWARDS AVE	Ramp	N
38146724	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	WEST	DRIVER INATTENTION	NOT APPLICABLE	41	41	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Thu	MIDDLE COUNTRY RD	State Hwy 25	N
38155420	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	NORTH	FOLLOWING TOO CLOSELY	NOT APPLICABLE	30	63	GOING STRAIGHT AHEAD	MAKING RIGHT TURN	Sun	MIDDLE COUNTRY RD	Ramp	N
38159896	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		WEST		ANIMAL'S ACTION		68		GOING STRAIGHT AHEAD		Tue	MIDDLE COUNTRY RD	Edwards Ave	N
38159930	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		ANIMAL'S ACTION		34		GOING STRAIGHT AHEAD		Mon	MIDDLE COUNTRY RD	Ramp	N
38159933	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	SOUTH-EAST	NOT APPLICABLE	FAILURE TO YIELD RIGHT OF WAY	54	64	GOING STRAIGHT AHEAD	MAKING LEFT TURN	Wed	MIDDLE COUNTRY RD	Fresh Pond Ave	N
38159983	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	SOUTH	DRIVER INATTENTION	DRIVER INATTENTION	37	22	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Mon	EDWARDS AVE		N
38169523	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		ANIMAL'S ACTION		64		GOING STRAIGHT AHEAD		Thu	MIDDLE COUNTRY RD		N
38171555	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		ANIMAL'S ACTION		45		GOING STRAIGHT AHEAD		Wed	MIDDLE COUNTRY RD	Fresh Pond Ave	N
38185572	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	WEST	NOT APPLICABLE	FAILURE TO KEEP RIGHT	24	25	STOPPED IN TRAFFIC	GOING STRAIGHT AHEAD	Sun	MIDDLE COUNTRY RD	Driveway	N
38197633	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	DRIVER INATTENTION	NOT APPLICABLE	33	41	GOING STRAIGHT AHEAD	SLOWED OR STOPPING	Thu	RAMP	Route 25A	N
38198446	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH-WEST	SOUTH	FAILURE TO YIELD RIGHT OF WAY	NOT APPLICABLE	19	44	MAKING LEFT TURN	GOING STRAIGHT AHEAD	Fri	EDWARDS AVE	Unnamed Street	N
38209224	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	FOLLOWING TOO CLOSELY	NOT APPLICABLE	36	65	GOING STRAIGHT AHEAD	STOPPED IN TRAFFIC	Mon	STATE HWY 25	Unnamed Street	N
38210631	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		NORTH		ANIMAL'S ACTION		20		GOING STRAIGHT AHEAD		Fri	EDWARDS AVE	Middle Country Rd	N
38216774	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		NOT ENTERED		48		GOING STRAIGHT AHEAD		Thu	[Route] 25	[Route] 25A	N
38223517	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		WEST		ANIMAL'S ACTION		32		GOING STRAIGHT AHEAD		Thu	MIDDLE COUNTRY RD		N
38225894	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	WEST	FOLLOWING TOO CLOSELY	FOLLOWING TOO CLOSELY	72	67	GOING STRAIGHT AHEAD	GOING STRAIGHT AHEAD	Tue	MIDDLE COUNTRY RD	Timber Dr	N
38230747	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	SOUTH-EAST	SOUTH-EAST	NOT APPLICABLE	DRIVER INATTENTION	21	58	MAKING RIGHT TURN	MAKING RIGHT TURN	Wed	RAMP	Edwards Ave	N
38239566	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	WEST	WEST	FOLLOWING TOO CLOSELY	NOT APPLICABLE	22	28	GOING STRAIGHT AHEAD	SLOWED OR STOPPING	Sat	STATE HWY 25	Unnamed Street	N
38253630	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		WEST		ANIMAL'S ACTION		42		GOING STRAIGHT AHEAD		Mon	MIDDLE COUNTRY RD	Fresh Pond Ave	N
38264062	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		EAST		FELL ASLEEP		33		GOING STRAIGHT AHEAD		Wed	MIDDLE COUNTRY RD	Driveway	N
38291853	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	EAST	EAST	DRIVER INATTENTION	NOT APPLICABLE	33	43	SLOWED OR STOPPING	STOPPED IN TRAFFIC	Thu	MIDDLE COUNTRY RD	Edwards Ave	N
38293886	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP		NORTH		NOT APPLICABLE		39		GOING STRAIGHT AHEAD		Thu	EDWARDS AVE	Middle Country Rd	N
38307780	NOT APPLICABLE	NOT APPLICABLE	CAR/VAN/PICKUP	CAR/VAN/PICKUP	NORTH	SOUTH	FAILURE TO YIELD RIGHT OF WAY	NOT APPLICABLE	33	47	MAKING LEFT TURN	GOING STRAIGHT AHEAD	Fri	EDWARDS AVE	Middle Country Rd	N

DECEMBER 16, 2020 VIDEO TELECONFERENCE
MEETING MINUTES

December 17, 2020

New York State Department of Transportation
Traffic Engineering & Safety (Permits)
NYS Office Building
250 Veterans Memorial Highway
Hauppauge, New York 11788-5518
Attn: Mohammad Islam

Planning Department
Town of Riverhead
200 Howell Avenue
Riverhead, NY 11901
Attn: Jefferson Murphree

RE: HK Ventures, LLC – NYS Route 25 Access Plan Video Tele-conference
4285 Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead
Suffolk County, New York 11961
NYSDOT Case # 84382
SE&D Job No. NYC-200069

Dear Mr. Islam & Mr. Murphree:

Please see below the meeting minutes from the December 16, 2020 video tele-conference with the New York State Department of Transportation (NYSDOT), the Town of Riverhead Planning Department, and the applicant regarding the above referenced application:

Attendees:

- NYSDOT
  - Mohammad Islam
  - Alexander Mirsakov
- Town of Riverhead Planning Department
  - Jefferson Murphree
  - Greg Bergman
  - Ray DiBiase (LKMA)
- HK Ventures (applicant)
  - Scott Johns
- Key Civil Engineering
  - Jaclyn Peranteau
- Stonefield Engineering & Design
  - Andrew Villari
  - Amanda LaRosa
  - Victoria Epstein

Meeting Minutes:

1. Stonefield provided background information regarding the proposed development program and introduced conversation regarding access plan options along NYS Route 25. Stonefield noted

SEQR Positive Declaration received from the Town and stated that the Traffic Impact Study is being updated to address comments received from and on behalf of the Town.

2. NYSDOT confirmed that a Traffic Signal Warrant Analysis (TSWA) was conducted in 2015 at the intersection of NYS Route 25 and Fresh Pond Avenue for which a signal was denied based on accident and delay analyses at the subject location.
3. After discussion of some potential access configurations, the NYSDOT stated that the ideal resolution would be the construction of a signalized intersection with left-turn lanes at the intersection of NYS Route 25 and Fresh Pond Avenue and an unsignalized driveway with right-in/right-out access configuration along NYS Route 25 at the HK Ventures property. It was understood that this assumes the neighboring property owner is agreeable to such improvements.
4. NYSDOT stated that a signal located at the HK Ventures driveway may be considered if cross-access is not feasible.
5. NYSDOT may consider a Two-Way Left-Turn Lane (TWLTL) along HK Ventures frontage that turns into an exclusive westbound left-turn at the intersection with Fresh Pond Avenue.
6. NYSDOT noted that shoulders cannot be removed due to presence of a bicycle lane along NYS Route 25.
7. NYSDOT noted preference to the addition of a left-turn lane unless there is major need for a signal – based on 2015 TSWA this is not likely, however, given the new development plans along the corridor a signal may be warranted for the future.
8. Stonefield acknowledged that a TSWA at the HK Ventures driveway along NYS Route 25 may result in the conclusion that the signal will not be warranted on volumes, but other warrants may be applicable.
    a. NYSDOT confirmed they do not wish to wait the typical 5-year study period to determine if the location will meet the crash warrant.
9. Stonefield presented conceptual roundabout design at the intersection of NYS Route 25 and Fresh Pond Avenue.
    a. The roundabout design would result in approximately 20,000 SF of taking from five (5) separate properties by NYSDOT.
10. NYSDOT stated preference to a traffic signal over a roundabout at the subject intersection based on corridor characteristics and intersection geometry.
    a. Ray DiBiase of LKMA on behalf of the Town requested that an assessment of a roundabout at the subject intersection as well as the associated advantages and disadvantages of a roundabout be provided.
    b. NYSDOT was open to assessment but informed that the roundabout will likely not be considered as an alternative.
11. Town of Riverhead Planning Department inquired as to what point NYSDOT typically becomes involved in change-of-use programs and that discussion of potential signal installation may be considered.
    a. NYSDOT responded that NYSDOT involvement is dependent on phasing, and whether multiple developments are proposed – NYSDOT will ask developers to look at joint impact and will assess if alternate access plans are warranted.
12. Stonefield inquired as to whether there are any additional planned projects within the site vicinity on the horizon which would impact the subject corridor.
    a. NYSDOT was not aware of additional developments, besides already known development and improvement plans at Edwards Avenue under NYSDOT Project Pin 081001, which would impact the subject corridor.
    b. HK Ventures is currently the only application that has been submitted to the Town which is anticipated to impact traffic along the subject corridor. Other property owners have inquired about what types of developments are permitted on their properties.

13. DOT inquired as to whether a TSWA is anticipated in connection with the HK Ventures permit application.
    a. Stonefield confirmed that an updated analysis is anticipated to be submitted dependent on agreement between the applicant and the neighboring property owner.
    b. NYSDOT does not wish to conduct an independent analysis if analysis is anticipated to be conducted under the permit application.
14. NYSDOT to provide the 2015 TSWA for Fresh Pond Avenue and any other documents which may assist in updated analyses to be conducted under the HK Ventures permit application.

Best regards,

Andrew J. Villari, PE
Stonefield Engineering & Design

CALVERTON INDUSTRIES, LLC. LETTER OF DENIAL OF CROSS-ACCESS

Calverton Industries LLC

Mailing Address: PO Box 9
Speonk, NY 11972
Phone (631) 325-1492
Fax (631) 325-1580

March 9, 2021

HK Ventures, LLC
100 Crossways Park West
Woodbury, NY 11797
Attn: David Zere

Good afternoon David,

As per our prior conversation, we at Calverton Industries, feel that allowing access thru our property to yours, would be detrimental to our future plans. Unfortunately we cannot accommodate your request.

Sincerely,

John Montecalvo
Managing Member

Calverton Industries, LLC

TRAFFIC SIGNAL WARRANT ANALYSIS

STONEFIELD

TRAFFIC SIGNAL WARRANT ANALYSIS

NYS ROUTE 25 & SITE DRIVEWAY
HAMLET OF CALVERTON, TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK

PREPARED FOR:

HK VENTURES, LLC

PREPARED BY:

STONEFIELD ENGINEERING & DESIGN, LLC
APRIL 19, 2021
NYC-200069

ANDREW J. VILLARI, PE
PROJECT MANAGER
NY P.E. LICENSE #100729

MATTHEW J. SECKLER, PE, PP, PTOE
PRINCIPAL
NY P.E. LICENSE #092725

TECHNICAL APPENDIX

TRAFFIC SIGNAL WARRANT ANALYSIS

Table 1A – Traffic Signal Warrant Analysis Summary – 2025 Build

HCS+: MUTCD SIGNAL WARRANT OUTPUTS

NYSDOT TRAFFIC DATA

NYSDOT Traffic Count Hourly Report

Growth Rates provided by NYSDOT Office of Technical Services Traffic Monitoring Section

SITE-GENERATED TRAFFIC VOLUMES

Table 2A – Projected Site-Generated Daily Traffic Volumes

TRAFFIC SIGNAL WARRANT ANALYSIS

Stonefield Engineering & Design, LLC ("Stonefield") prepared a Traffic Signal Warrant Analysis to assist in determining whether a traffic signal should be installed at the proposed intersection of NYS Route 25 and the HK Ventures Site Driveway in the Hamlet of Calverton, Town of Riverhead, Suffolk County, New York. This report serves to supplement Stonefield's Traffic Impact Study, dated April 19, 2021, and analyzes the full build-out of the proposed industrial park. Site access would be provided via one (1) full-movement driveway along NYS Route 25.

The Manual on Uniform Traffic Control Devices (MUTCD), published by the Federal Highway Administration (FHWA), states that "The investigation of the need for a traffic control signal shall include an analysis of factors related to the existing operation…at the study location…and the applicable factors contained in the traffic signal warrants." Specifically, these Warrants are as follows:

Warrant 1, Eight-Hour Vehicular Volume
Warrant 2, Four-Hour Vehicular Volume
Warrant 3, Peak Hour
Warrant 4, Pedestrian Volume
Warrant 5, School Crossing
Warrant 6, Coordinated Signal System
Warrant 7, Crash Experience
Warrant 8, Roadway Network
Warrant 9, Intersection Near a Grade Crossing

Further, the MUTCD states that "a traffic control signal should not be installed unless one or more of the factors described in [Chapter 4C] are met." As part of the study, New York State Department of Transportation (NYSDOT) 24-hour count data along NYS Route 25 was utilized for the Traffic Signal Warrant Analysis and is appended to this report.

Future traffic volumes were projected based on industry standards and guidance contained within the MUTCD. Specifically, an annual background traffic growth rate of 1.0% was applied to the NYSDOT traffic volumes along NYS Route 25 for eleven (11) years in accordance with data provided by the NYSDOT Office of Technical Services' Traffic Monitoring Section. For the proposed HK Ventures site driveway, daily traffic volumes were projected utilizing data provided by the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition* and subsequently distributed based on ITE's Hourly Distribution of Entering and Exiting Vehicle Trips. A summary of the volume data is appended at the end of this report.

The succeeding sections of this study describe Stonefield's evaluation of the MUTCD Warrants, and documents provided in the Technical Appendix provide a summary of the overall analysis for the 2025 Build Condition.

TRAFFIC SIGNAL WARRANTS

WARRANT 1 – EIGHT-HOUR VEHICULAR VOLUME *2025 BUILD: MET*

This Warrant is intended for application at "locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal" or "where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay." Warrant 1 is satisfied when one of the following conditions exists for any eight (8) hours of an average day on roadways:

A. The vehicles per hour given in both of the 100 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; or

B. The vehicles per hour given in both of the 100 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

As indicated on the appended Table 1A, volume thresholds for Condition B are met for nine (9) hours; therefore, this Warrant is satisfied for the 2025 Build Condition.

WARRANT 2 – FOUR-HOUR VEHICULAR VOLUME *2025 BUILD: MET*

This Warrant is intended for application "where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal." This Warrant is satisfied if traffic volumes exceed the applicable curve in Figure 4C-1 within the MUTCD for any four (4) hours of an average day. As indicated on the appended Table 1A, this threshold is exceeded for nine (9) hours in the Build Condition; therefore, this Warrant is satisfied for the 2025 Build Condition.

WARRANT 3 – PEAK HOUR *2025 BUILD: MET*

This Warrant is intended for application "only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time." The proposed development qualifies as a "high-occupancy vehicle facility." Warrant 3 is satisfied when one of the following conditions exists for an average day on roadways:

A. If all three (3) of the following conditions exist for the same one (1) hour of an average day:
    1. The total stopped time delay experienced by traffic on one minor-street approach controlled by a stop sign equals or exceeds four (4) vehicle-hours for a one-lane approach;
    2. The volume on the same minor-street approach equals or exceeds 100 vehicles per hour for one moving lane of traffic; and

3. The total entering traffic volume at the intersection exceeds 800 vehicles per hour for intersections with four (4) approaches; or,

B. Traffic volumes exceed the applicable curve in Figure 4C-3 within the MUTCD for any one (1) hour of an average day.

Calculations pertaining to total stopped time delay have not been performed; however, as indicated on the appended Table 1A, the threshold specified in Condition B is exceeded during seven (7) one (1)-hour periods in the 2025 Build Condition; therefore, this Warrant is satisfied.

WARRANT 4 – PEDESTRIAN VOLUME *2025 BUILD: NOT MET*

This Warrant is intended for application "where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street." Warrant 4 is satisfied when one of the following conditions exists for an average day on roadways:

A. Traffic and pedestrian volumes exceed the applicable curve in Figure 4C-5 within the MUTCD for any four (4) hours of an average day; or
B. Traffic and pedestrian volumes exceed the applicable curve in Figure 4C-7 within the MUTCD for any one (1) hour of an average day.

Pedestrian volumes at the subject intersection are not sufficient to warrant signalization during the 2025 Build Condition. Therefore, this Warrant is not satisfied.

WARRANT 5 – SCHOOL CROSSING *N/A*

This Warrant is intended for application "where the fact that schoolchildren cross the major street is the principal reason to consider installing a traffic control signal." Therefore, this Warrant is not applicable.

WARRANT 6 – COORDINATED SIGNAL SYSTEM *N/A*

This Warrant is intended for application if progressive movement in a coordinated signal system would necessitate installing a traffic signal in order to maintain proper platooning of vehicles. The principal reason for installing a traffic signal is not to maintain proper platooning of vehicles; therefore, this Warrant is not applicable.

WARRANT 7 – CRASH EXPERIENCE *NOT MET*

This Warrant is intended for application "where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal." Warrant 7 is satisfied when all of the following criteria are met:

A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and

B. Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and

C. For each of any 8 hours of an average day, the vehicles per hour (vph) given in both the 80 percent columns of Condition A in Table 4C-1, or the vph in both of the 80 percent columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80 percent of the requirements specified in the Pedestrian Volume warrant. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

As the intersection does not yet exist, crash history at the intersection has not been evaluated, therefore, this Warrant is not applicable.

WARRANT 8 – ROADWAY NETWORK *N/A*

This Warrant is intended "to encourage concentration and organization of traffic flow on a roadway network." This Warrant is satisfied if the common intersection of two or more major routes meets one or both of the following criteria:

A. The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of Warrants 1, 2, and 3 during an average weekday; or

B. The intersection has a total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday).

The volumes at the subject intersection do not exceed the thresholds required to satisfy this Warrant, therefore this Warrant is not applicable.

WARRANT 9 – INTERSECTION NEAR A GRADE CROSSING *N/A*

This Warrant is intended for application at locations proximate to grade crossings. As this intersection is not near an at-grade railroad crossing, this Warrant is not applicable.

CONCLUSIONS

This report was prepared to assist in determining whether a traffic signal should be installed at the intersection of NYS Route 25 and the HK Ventures Site Driveway in the Hamlet of Calverton, Town of Riverhead, Suffolk County, New York. Based on the analysis documented herein, MUCTD Warrant 1B (Eight-Hour Vehicular Volume), MUCTD Warrant 2 (Four-Hour Vehicular Volume), and MUTCD Warrant 3 (Peak-Hour Vehicular Volume) are met in the 2025 Build Condition. Based on the analyses contained within this report, a signal is warranted at the intersection of NYS Route 25 and the HK Ventures site driveway as a result of the proposed development. Therefore, Access Condition B as analyzed in the Traffic Impact Study, dated April 19, 2021 is recommended to be implemented.

TECHNICAL APPENDIX

WARRANT SUMMARY TABLE

STONEFIELD

stonefieldeng.com
584 Broadway, Suite 310, New York, NY 10012
718.606.8305 t. 201.340.4472 f.

Table 1A - Traffic Signal Warrant Analysis Summary
Traffic Signal Warrant Analysis - Average Weekday Volumes
Middle Country Road (NYS Route 25) and Site Driveway
Hamlet of Calverton, Town of Riverhead, Suffolk County, New York

	2025 Traffic Volumes		Project Traffic Volumes	FHWA MUTCD Traffic Signal Warrants X = Hourly Requirement Satisfied N/A = Warrant is Not Applicable									
	Middle Country Road Vehicles Per Hour Major Street (One Way EB)	Middle Country Road Vehicles Per Hour Major Street (One Way WB)	Site-Generated Traffic Vehicles Per Hour Minor Street (One Way NB)	1A (70%)	1B (70%)	2 (70%)	3B (70%)	4	5	6	7	8	9
12-1 AM	38	57	0										
1-2 AM	22	29	2										
2-3 AM	22	19	2										
3-4 AM	23	18	0										
4-5 AM	77	20	0										
5-6 AM	226	91	5										
6-7 AM	483	180	16										
7-8 AM	703	340	36										
8-9 AM	821	375	57										
9-10 AM	765	406	92		X	X							
10-11 AM	747	459	108		X	X	X						
11-12 N	672	553	114		X	X	X						
12-1 PM	669	655	145	X	X	X	X	N/A	N/A	N/A	N/A	N/A	N/A
1-2 PM	687	625	89		X	X							
2-3 PM	630	656	127		X	X	X						
3-4 PM	636	753	175	X	X	X	X						
4-5 PM	624	857	137		X	X	X						
5-6 PM	565	835	208	X	X	X	X						
6-7 PM	462	616	36										
7-8 PM	334	518	2										
8-9 PM	235	467	0										
9-10 PM	180	377	13										
10-11 PM	137	234	0										
11-12 AM	67	146	0										
			Warrant Met?	**NO**	**YES**	**YES**	**YES**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

HCS+: MUTCD SIGNAL WARRANT OUTPUTS

HCS+: MUTCD Signal Warrants Release 5.5

Analyst: AJL
Agency: SED
Date: 4/19/2021
Project ID: NYC-200069
EW Street: Middle Country Road
Intersection: NYS Route 25 & Site Driveway
Jurisdiction: NYSDOT
Units: U.S. Customary
Analysis Year: 2024
NS Street: Site Driveway

General Information

Major St. Speed (mph): 50
Nearest Signal (ft): 4800
Crashes per Yr: 0
Population: Not less than 10000
Coordinated Signal System: N

School Crossing

Students in Highest Hour: 0
Adequate Gaps in Period: 0
Minutes in Period: 0

Roadway Network

Two Major Routes: 0
Weekend Count: 0
5-yr Growth Factor: 0

Geometry and Traffic

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	1	1	0	1	0	1	0	0	0
LaneUsage		TR	R	L	T		L		R			

Results

Warrant 1: Eight-Hour Vehicular Volume	[X]
1 A. Minimum Vehicular Volumes	[ ]
1 B. Interruption of Continuous Traffic	[X]
1 80% Vehicular --and-- Interruption Volumes	[ ]
Warrant 2: Four-Hour Vehicular Volume	
2 A. Four-Hour Vehicular Volumes	[X]
Warrant 3: Peak Hour	[X]
3 A. Peak-Hour Conditions	[ ]
3 B. Peak-Hour Vehicular Volume Hours Met	[X]
Warrant 4: Pedestrian Volume	[ ]
4 A. Pedestrian Volumes	[ ]
4 B. Gaps Same Period	[ ]
Warrant 5: School Crossing	[ ]
5 A. Student Volumes	[ ]
5 B. Gaps Same Period	[ ]
Warrant 6: Coordinated Signal System	
6 Degree of Platooning	[ ]
Warrant 7: Crash Experience	[ ]
7 A. Adequate trials of alternatives	[ ]

7 B. Reported crashes [ ]
7 80% Volumes for Warrants 1A, 1B --or-- 4 [X]

Warrant 8: Roadway Network [ ]
8 A. Weekday Volume [ ]
8 B. Weekend Volume [ ]

Summary

Hours	Major Volume	Minor Volume	Total Volume	Delay (Veh-hr)	1A 70%	1A 56%	1B 70%	1B 56%	2 70%	3A 70%	3B 70%
07-08	1043	36	1079	0.0	No	No	No	No	No	No	No
08-09	1196	57	1253	0.0	No	No	No	Yes	No	No	No
09-10	1171	92	1263	0.0	No	No	Yes	Yes	Yes	No	No
10-11	1206	108	1314	0.0	No	No	Yes	Yes	Yes	No	Yes
11-12	1225	114	1339	0.0	No	Yes	Yes	Yes	Yes	No	Yes
12-13	1324	145	1469	0.0	Yes	Yes	Yes	Yes	Yes	No	Yes
13-14	1312	89	1401	0.0	No	No	Yes	Yes	Yes	No	No
14-15	1286	127	1413	0.0	No	Yes	Yes	Yes	Yes	No	Yes
15-16	1389	175	1564	0.0	Yes	Yes	Yes	Yes	Yes	No	Yes
16-17	1481	137	1618	0.0	No	Yes	Yes	Yes	Yes	No	Yes
17-18	1400	208	1608	0.0	Yes	Yes	Yes	Yes	Yes	No	Yes
18-19	1078	36	1114	0.0	No	No	No	No	No	No	No
Total	15111	1324	16435		3	6	9	10	9	0	7

Traffic Volumes (vph)

Eastbound			Westbound			Northbound			Southbound		
L	T	R	L	T	R	L	T	R	L	T	R
0	703	0	0	340	0	18	0	18	0	0	0
0	821	0	0	375	0	28	0	29	0	0	0
0	765	0	0	406	0	46	0	46	0	0	0
0	747	0	0	459	0	54	0	54	0	0	0
0	672	0	0	553	0	57	0	57	0	0	0
0	669	0	0	655	0	72	0	73	0	0	0
0	687	0	0	625	0	44	0	45	0	0	0
0	630	0	0	656	0	63	0	64	0	0	0
0	636	0	0	753	0	87	0	88	0	0	0
0	624	0	0	857	0	68	0	69	0	0	0
0	565	0	0	835	0	104	0	104	0	0	0
0	462	0	0	616	0	18	0	18	0	0	0

Pedestrian Volumes and Gaps (Per Hour)

Volume	Gap	Volume	Gap	Volume	Gap	Volume	Gap
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

!

Delay	sec/veh	veh-hrs	sec/veh	veh-hrs	sec/veh	veh-hrs	sec/veh	veh-hrs
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Warrants Volume

Information

Analyst	AJL	Intersection	NYS Route 25 & Site Driveway
Agency/Co	SED	Jurisdiction	NYSDOT
Date Performed	4/19/2021	Units	U.S. Customary
Project ID	NYC-200069	Time Period Analyzed	
East/West Street	Middle Country Road	North/South Street	Site Driveway
File Name	2021-04 Warrants	Major Street	East-West

Project Description *NYC-200069*

Warrant 1

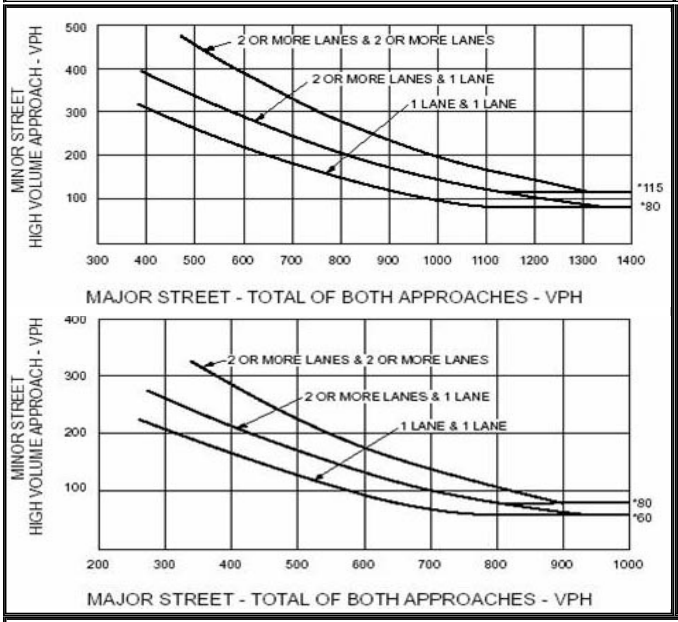
Condition A - Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)			Vehicles per hour on higher-volume minor-street approach (one direction only)		
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	100%[a]	80%[b]	70%[c]
1	1	500	400	350	150	120	105
2 or more	1	600	480	420	150	120	105
2 or more	2 or more	600	480	420	200	160	140
1	2 or more	500	400	350	200	160	140

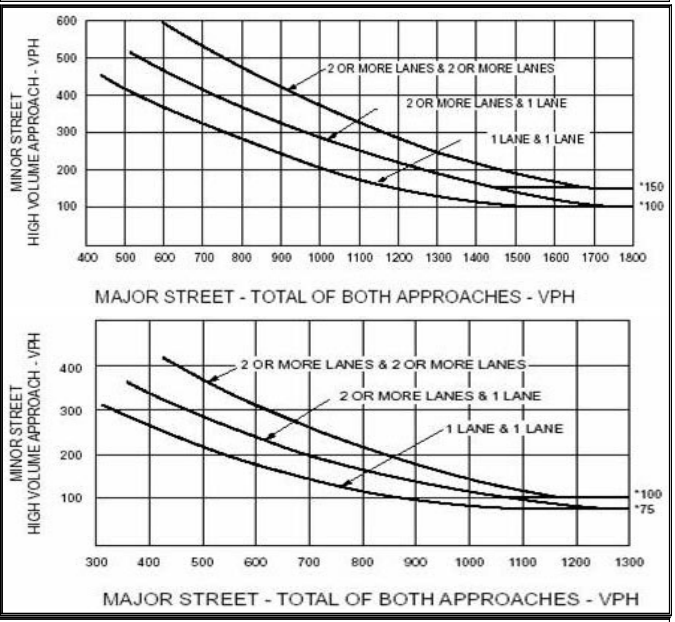
Condition B - Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)			Vehicles per hour on higher-volume minor-street approach (one direction only)		
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	100%[a]	80%[b]	70%[c]
1	1	750	600	525	75	60	53
2 or more	1	900	720	630	75	60	53
2 or more	2 or more	900	720	630	100	80	70
1	2 or more	750	600	525	100	80	70

Warrant 2



Warrant 3



Volume Summary

Major Street Lanes 2+ **Minor Street Lanes** 2+ **Speed** 50 **Population** 10000+

Hours	Major Volume	Minor Volume	Total Volume	1A (70%)	1A (56%)	1B (70%)	1B (56%)	2 (70%)	3A (70%)	3B (70%)
07-08	1043	36	1079	No	No	No	No	No	No	No
08-09	1196	57	1253	No	No	No	Yes	No	No	No
09-10	1171	92	1263	No	No	Yes	Yes	Yes	No	No
10-11	1206	108	1314	No	No	Yes	Yes	Yes	No	Yes
11-12	1225	114	1339	No	Yes	Yes	Yes	Yes	No	Yes
12-13	1324	145	1469	Yes	Yes	Yes	Yes	Yes	No	Yes
13-14	1312	89	1401	No	No	Yes	Yes	Yes	No	No
14-15	1286	127	1413	No	Yes	Yes	Yes	Yes	No	Yes
15-16	1389	175	1564	Yes	Yes	Yes	Yes	Yes	No	Yes
16-17	1481	137	1618	No	Yes	Yes	Yes	Yes	No	Yes
17-18	1400	208	1608	Yes	Yes	Yes	Yes	Yes	No	Yes
18-19	1078	36	1114	No	No	No	No	No	No	No
Totals	15111	1324	16435	3	6	9	10	9	0	7

Copyright © 2010 University of Florida, All Rights Reserved

HCS+™ Version 5.5 Generated: 4/27/2021 5:40 PM

NYSDOT TRAFFIC DATA

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **NY 25** ROAD NAME:
DIRECTION: Eastbound FACTOR GROUP: 30
STATE DIR CODE: 6 WK OF YR: 32
DATE OF COUNT: 08/07/2014
NOTES LANE 1:

FROM: **RT 25A**
REC. SERIAL #: 8003
PLACEMENT: 0.31mi W of Fresh Pond Ave
@ REF MARKER:
ADDL DATA:
COUNT TYPE: AXLE PAIRS

TO: **EDWARDS AVE**
FUNC. CLASS: 14
NHS: no
JURIS: City
CC Stn:
BATCH ID: DOT-R10R10 WW32A VRMS

COUNTY: **Suffolk**
TOWN:
LION#:
BIN:
RR CROSSING:
SAMPLE:

COUNT TAKEN BY: ORG CODE: VEC INITIALS: OO
PROCESSED BY: ORG CODE: DOT INITIALS: JLB

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	F																											
2	S																											
3	S																											
4	M																											
5	T																											
6	W																											
7	T						240	467	659	760	659	649	761	778	644	562	601	563	533	461	313	239	175	121	73				
8	F	36	14	22	28	89	204	466	669	690	699	676	636	739	690	584	659	634	581	470	377	249	175	231	93	9711	739	12
9	S	58	37	17	22	48	117	235	413	494	601	678	704	687	659	620	537	550	491	375	311	248	195	166	117	8380	704	11
10	S	76	43	34	23	35	69	142	272	352	561	680	729	786	748	725	540	436	362	309	289	223	161	123	64	7782	786	12
11	M	28	20	15	30	73	206	432	655	759	698	644	624	640	612	562	549	589	528	385	280	211	157	101	60	8858	759	8
12	T	31	20	22	24	73	216	438	672	734	659	600	597	623	652	573	574	585	519	402	268	202	178	118	55	8835	734	8
13	W	37	20	14	19	58	153	380	577	825	785	665	571	586	636	622	575	565	489	408	353	209	152	150	63	8912	825	8
14	T	36	25	22	17	64	228	480	645	756	716	879	513	446	610	578	622	565	519	462	318	221	165	139	56	9082	879	10
15	F																											
16	S																											
17	S																											
18	M																											
19	T																											
20	W																											
21	T																											
22	F																											
23	S																											
24	S																											
25	M																											
26	T																											
27	W																											
28	T																											
29	F																											
30	S																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	ADT
34	20	20	21	69	203	433	630	736	686	670	602	600	616	565	570	559	506	414	299	211	161	123	60	8808

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
8	187	5	121	736	8%	0.976	1.090

ESTIMATED

AADT

8081

New York State Department of Transportation

Traffic Count Hourly Report

ROUTE #: **NY 25** ROAD NAME:
DIRECTION: Westbound FACTOR GROUP: 30
STATE DIR CODE: 7 WK OF YR: 32
DATE OF COUNT: 08/07/2014
NOTES LANE 1:

FROM: **RT 25A**
REC. SERIAL #: 8003
PLACEMENT: 0.31mi W of Fresh Pond Ave
@ REF MARKER:
ADDL DATA:
COUNT TYPE: AXLE PAIRS

TO: **EDWARDS AVE**
FUNC. CLASS: 14
NHS: no
JURIS: City
CC Stn:
BATCH ID: DOT-R10R10 WW32A VRMS

COUNTY: **Suffolk**
TOWN:
LION#:
BIN:
RR CROSSING:
SAMPLE:

COUNT TAKEN BY: ORG CODE: VEC INITIALS: OO

PROCESSED BY: ORG CODE: DOT INITIALS: JLB

DATE	DAY	12 TO 1 AM	1 TO 2 AM	2 TO 3 AM	3 TO 4 AM	4 TO 5 AM	5 TO 6 AM	6 TO 7 AM	7 TO 8 AM	8 TO 9 AM	9 TO 10 AM	10 TO 11 AM	11 TO 12 AM	12 TO 1 PM	1 TO 2 PM	2 TO 3 PM	3 TO 4 PM	4 TO 5 PM	5 TO 6 PM	6 TO 7 PM	7 TO 8 PM	8 TO 9 PM	9 TO 10 PM	10 TO 11 PM	11 TO 12 PM	DAILY TOTAL	DAILY HIGH COUNT	DAILY HIGH HOUR
1	F																											
2	S																											
3	S																											
4	M																											
5	T																											
6	W																											
7	T						**84**	**178**	**321**	**338**	**361**	**401**	**495**	**564**	**530**	**580**	**732**	**800**	**806**	**596**	**504**	**478**	**381**	**219**	**160**			
8	F	**50**	**29**	**21**	**14**	**19**	**75**	**148**	**307**	**351**	**391**	**414**	**500**	**528**	**630**	**628**	**712**	**827**	**777**	**636**	**532**	**497**	**420**	**271**	**185**	8962	827	16
9	S	**89**	**51**	**24**	**22**	**16**	**33**	**74**	**215**	**263**	**346**	**392**	**472**	**526**	**578**	**573**	**603**	**608**	**595**	**564**	**448**	**448**	**403**	**340**	**210**	7893	608	16
10	S	**115**	**50**	**25**	**22**	**16**	**24**	**59**	**128**	**219**	**289**	**379**	**468**	**526**	**609**	**563**	**609**	**619**	**623**	**535**	**519**	**492**	**311**	**178**	**128**	7506	623	17
11	M	**35**	**22**	**15**	**13**	**11**	**74**	**152**	**296**	**353**	**367**	**330**	**438**	**457**	**606**	**602**	**663**	**815**	**862**	**613**	**482**	**405**	**302**	**205**	**130**	8248	862	17
12	T	**50**	**28**	**16**	**17**	**22**	**89**	**154**	**323**	**335**	**359**	**394**	**476**	**532**	**594**	**671**	**710**	**822**	**821**	**561**	**450**	**380**	**319**	**217**	**126**	8466	822	16
13	W	**52**	**24**	**14**	**15**	**14**	**93**	**175**	**348**	**410**	**411**	**445**	**391**	**494**	**466**	**577**	**655**	**754**	**725**	**554**	**435**	**431**	**336**	**192**	**119**	8130	754	16
14	T	**55**	**27**	**16**	**20**	**17**	**78**	**182**	**274**	**280**	**351**	**542**	**750**	**956**	**675**	**578**	**701**	**746**	**618**	**507**	**502**	**452**	**393**	**240**	**135**	9095	956	12
15	F																											
16	S																											
17	S																											
18	M																											
19	T																											
20	W																											
21	T																											
22	F																											
23	S																											
24	S																											
25	M																											
26	T																											
27	W																											
28	T																											
29	F																											
30	S																											
31	S																											

AVERAGE WEEKDAY HOURS (Axle Factored, Mon 6AM to Fri Noon)

																									ADT
51	**26**	**17**	**16**	**18**	**82**	**161**	**305**	**336**	**364**	**411**	**496**	**587**	**560**	**588**	**675**	**768**	**748**	**552**	**464**	**419**	**338**	**210**	**131**	**8323**

DAYS Counted	HOURS Counted	WEEKDAYS Counted	WEEKDAY Hours	AVERAGE WEEKDAY High Hour	AVERAGE WEEKDAY % of day	Axle Adj. Factor	Seasonal/Weekday Adjustment Factor
8	187	5	121	768	9%	0.976	1.090

ESTIMATED

AADT

7636

From: dot.sm.mo.traffic.data.viewer <MO-TrafficDataViewer@dot.ny.gov>
Sent: Monday, January 11, 2021 10:17 AM
To: Villari, Andrew
Subject: RE: Inquiry from Highway Data Services Bureau page @DOT.NY.GOV

CAUTION: External Email

Good morning Andrew,

Below are the available growth rates for the locations you requested:

1. Middle Country Rd – Station 070042: FC 14, +1.00%
   Fresh Pond Ave – Station 071486: FC 16, -1.44%
2. Calverton CDP: we do not have growth rates available for CDPs
3. Town of Riverhead: +0.52%
4. Suffolk County – For FC 14 roads, +0.31% . For FC 16 roads, +0.34%

Please ask if you have further questions.

Traffic Data Viewer

NYSDOT Office of Technical Services
Traffic Monitoring Section
50 Wolf Road, POD 4-2, Albany, NY 12232
518-457-1965 | MO-TrafficDataViewer@dot.ny.gov

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

SITE-GENERATED TRAFFIC VOLUMES

STONEFIELD

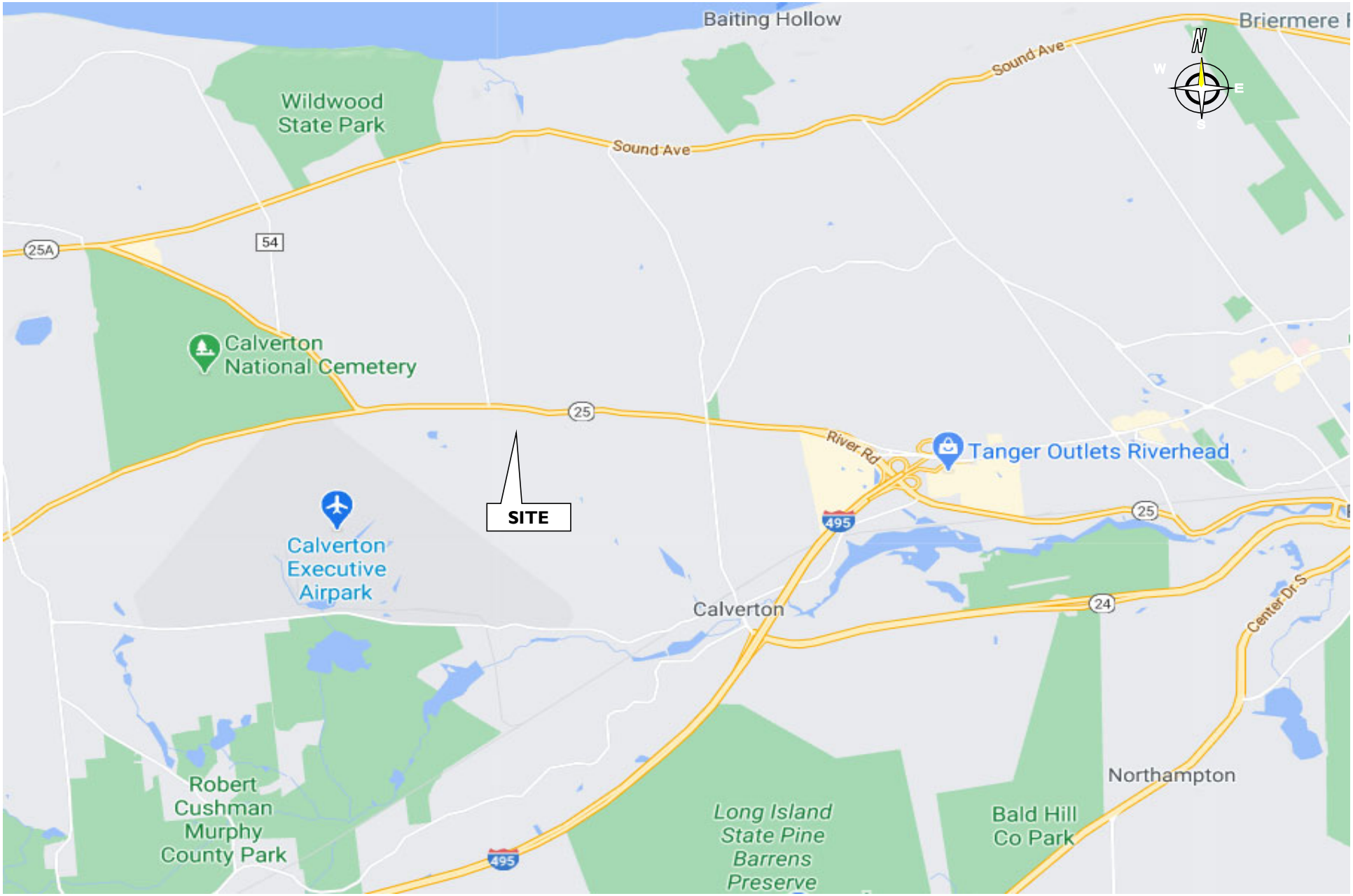
Table 2A - Projected Site-Generated Daily Traffic Volumes
Middle Country Road and Site Driveway
Hamlet of Calverton, Town of Riverhead, Suffolk County, New York

	Phase I	Phase II
Enter	**715**	**649**
Exit	**716**	**648**
TOTAL	**1431**	**1297**

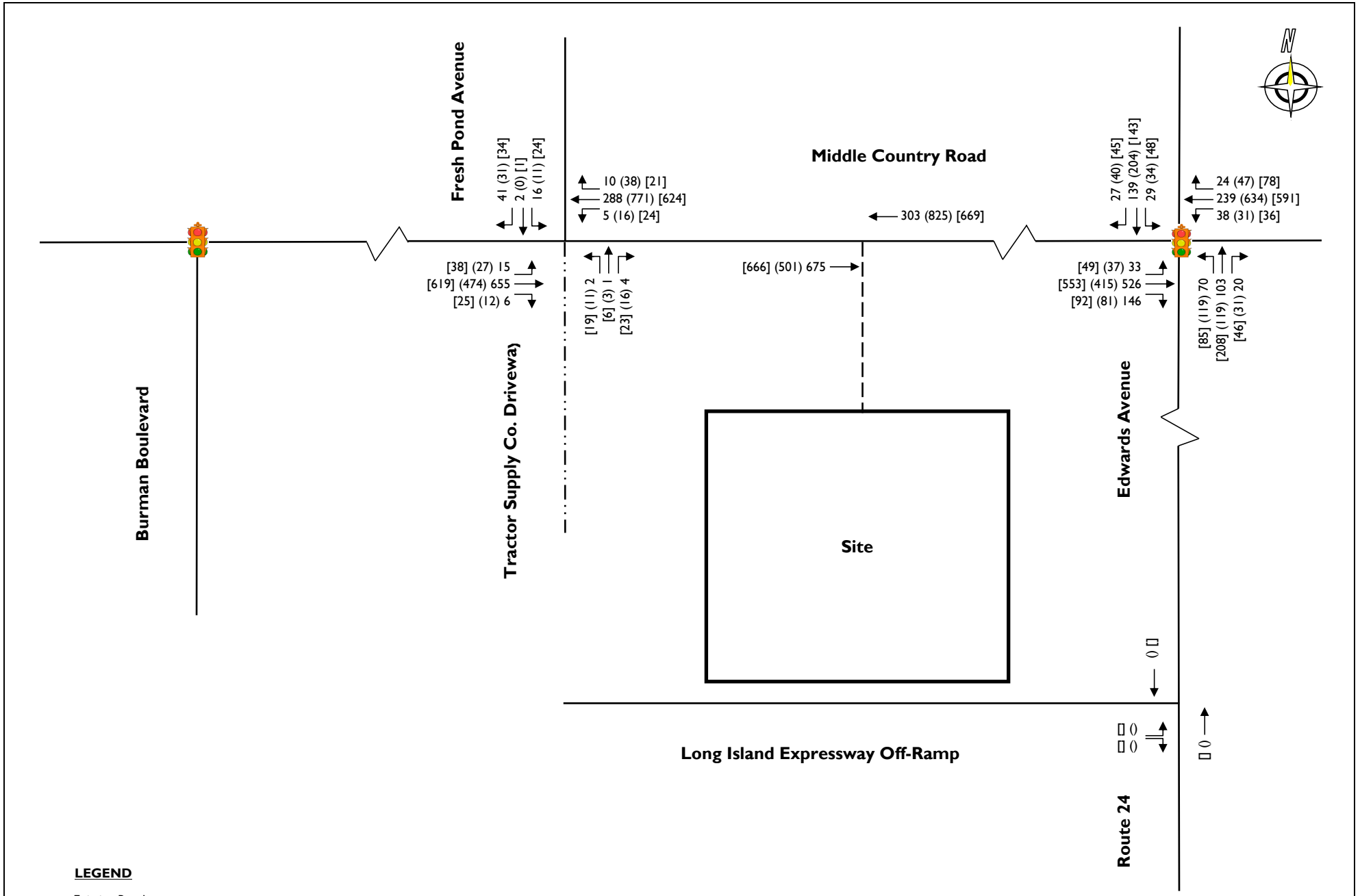
	Distribution of Exiting Vehicle Trips[1]	Project Site-Generated Daily Traffic Volumes		
		Phase I Vehicles Per Hour Major Street (One Way NB)	Phase II Vehicles Per Hour Major Street (One Way NB)	TOTAL Vehicles Per Hour Major Street (One Way NB)
	% OUT	716	648	1364
12-1 AM	0	0	0	**0**
1-2 AM	0.1	1	1	**2**
2-3 AM	0.1	1	1	**2**
3-4 AM	0	0	0	**0**
4-5 AM	0	0	0	**0**
5-6 AM	0.4	2	3	**5**
6-7 AM	1.2	8	8	**16**
7-8 AM	2.7	19	17	**36**
8-9 AM	4.2	30	27	**57**
9-10 AM	6.8	48	44	**92**
10-11 AM	7.9	57	51	**108**
11-12 N	8.4	60	54	**114**
12-1 PM	10.6	76	69	**145**
1-2 PM	6.5	47	42	**89**
2-3 PM	9.3	67	60	**127**
3-4 PM	12.8	92	83	**175**
4-5 PM	10.1	72	65	**137**
5-6 PM	15.2	109	99	**208**
6-7 PM	2.6	19	17	**36**
7-8 PM	0.1	1	1	**2**
8-9 PM	0	0	0	**0**
9-10 PM	1	7	6	**13**
10-11 PM	0	0	0	**0**
11-12 AM	0	0	0	**0**

[1] Institute of Transportation Engineers Trip Generation Manual, 10th Edition - LU 110 Hourly Variation of Total Traffic

FIGURES



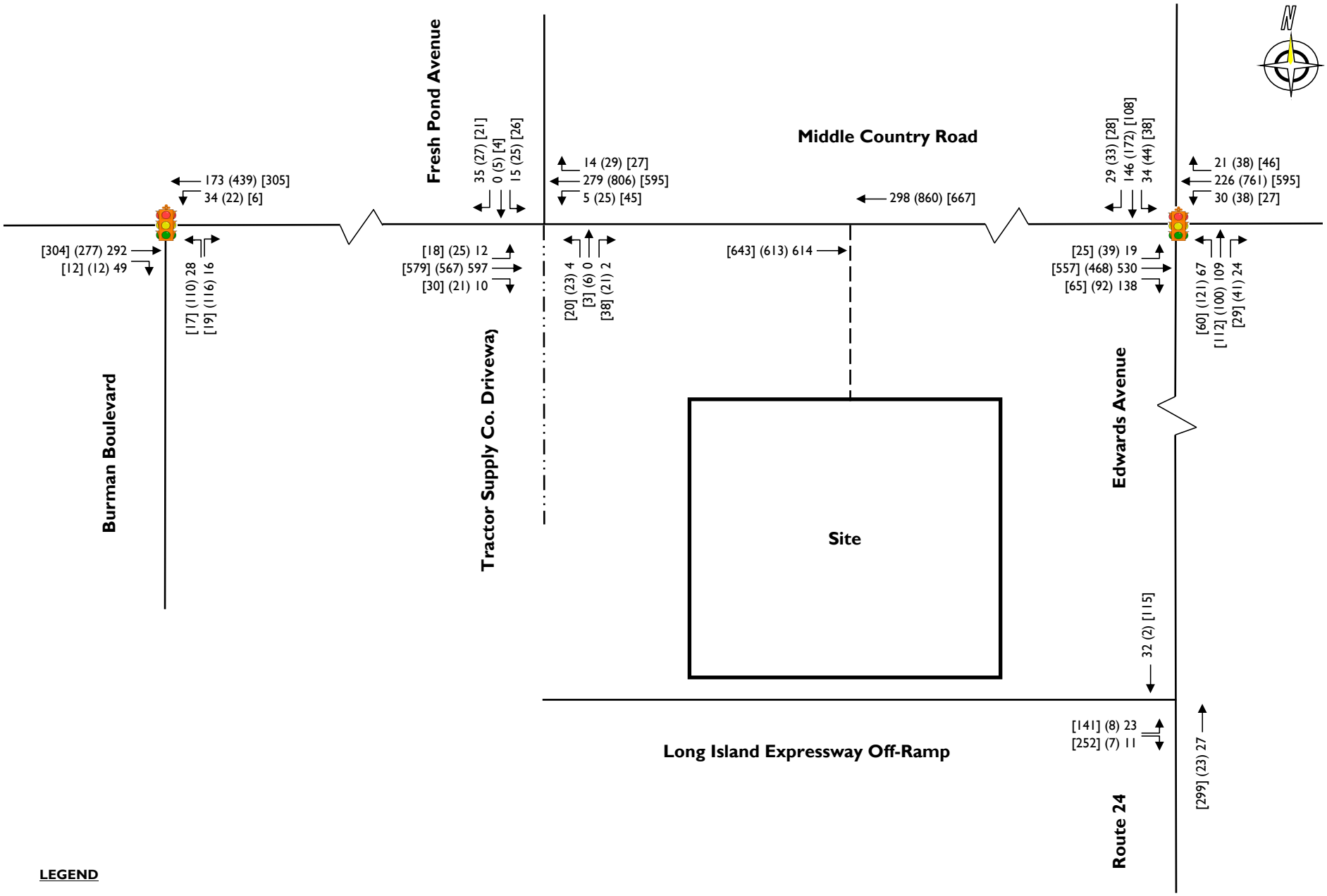
STONEFIELD	**Proposed Industrial Park** **Middle Country Road (NYS Route 25)** **Hamlet of Calverton, Town of Riverhead, New York** **Traffic Impact Study**	**FIGURE 1** **Site Location Map**



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

FIGURE 2
October 2020 Existing As-Counted Traffic Volumes



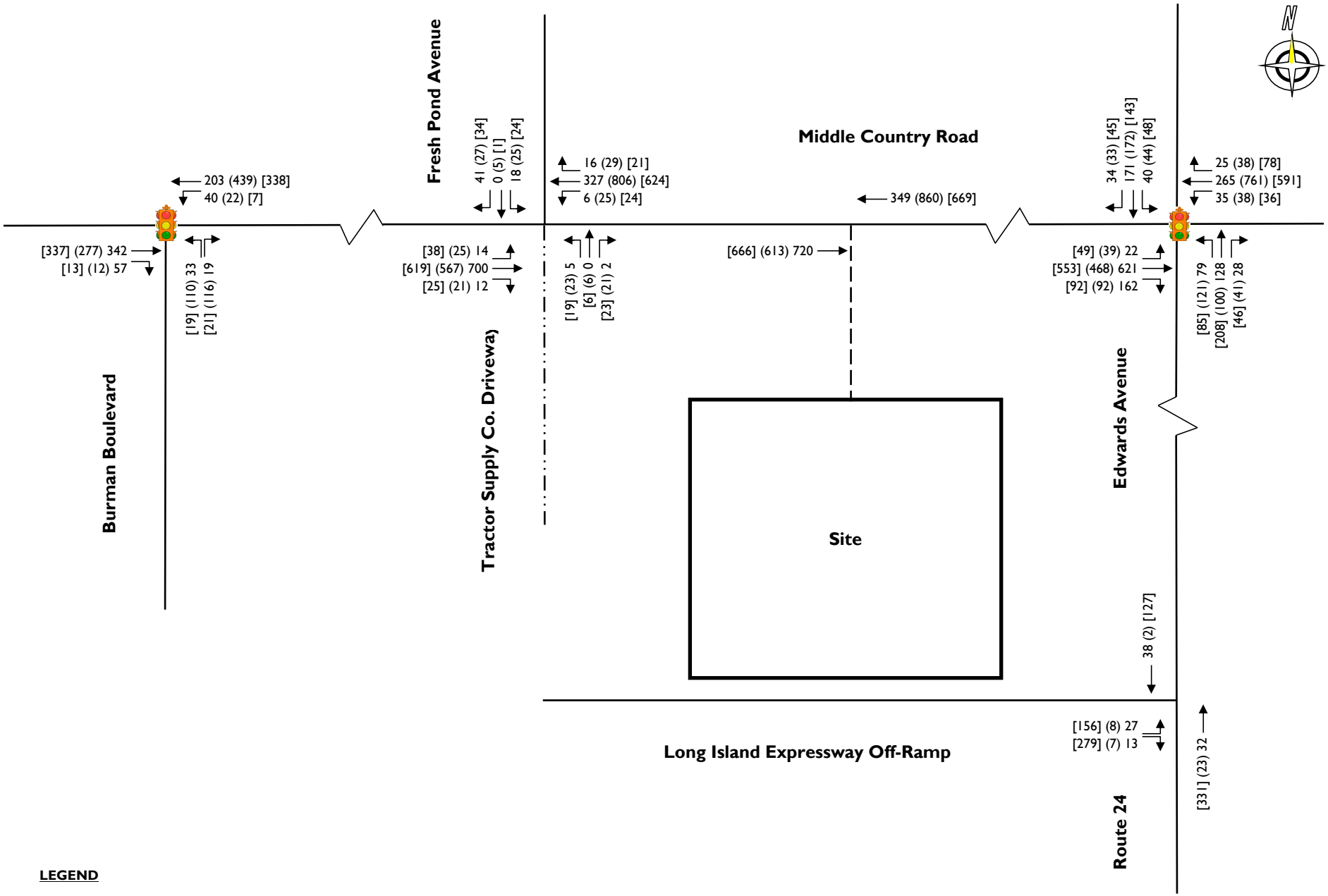
LEGEND

- Existing Roadway
- Proposed Driveway
- Existing Private Driveway
- AM (PM) [SAT] Peak Hour Volumes
- Signalized Intersection

STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

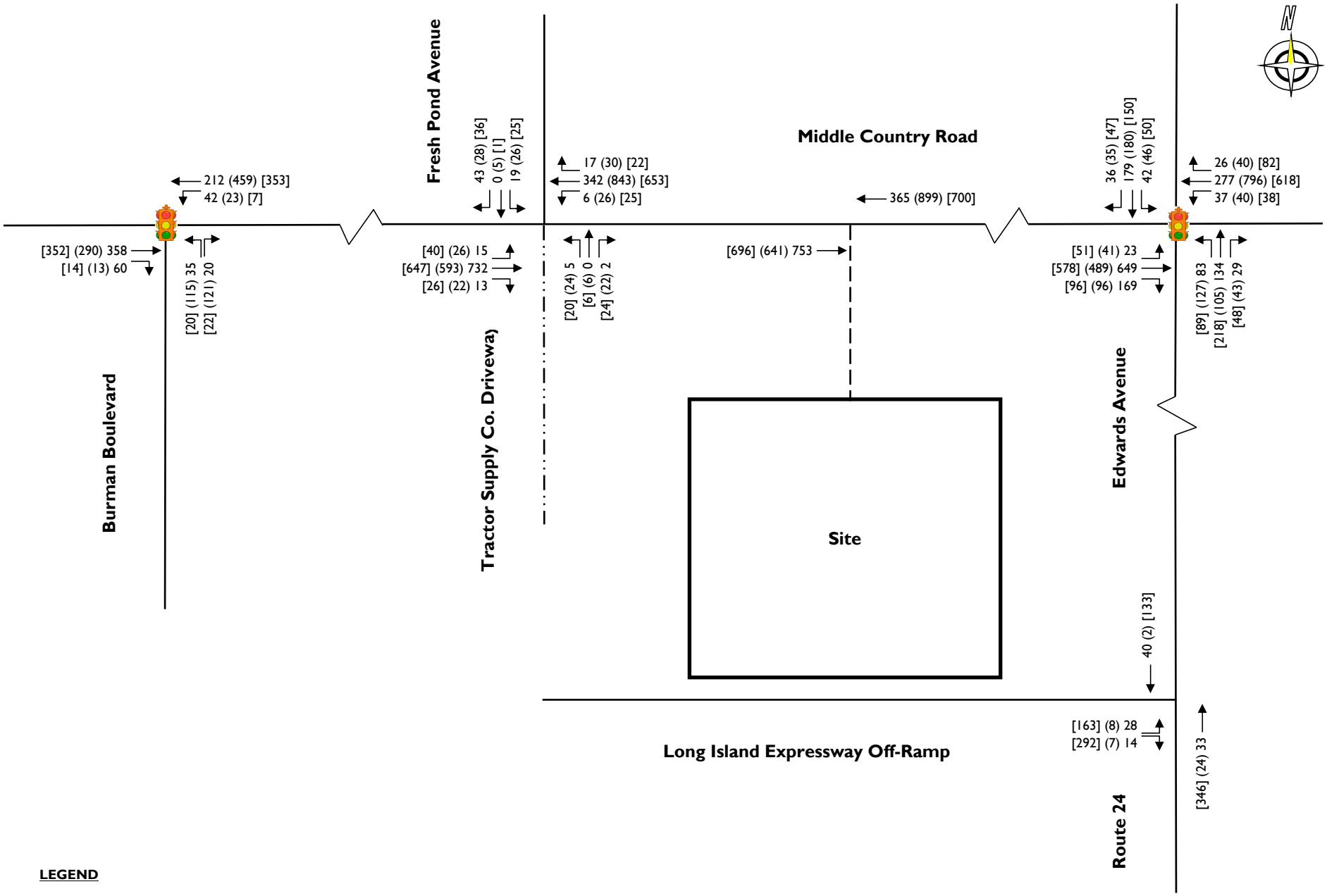
FIGURE 3
December 2020 Existing As-Counted Traffic Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

FIGURE 4
2020 Existing Adjusted Traffic Volumes



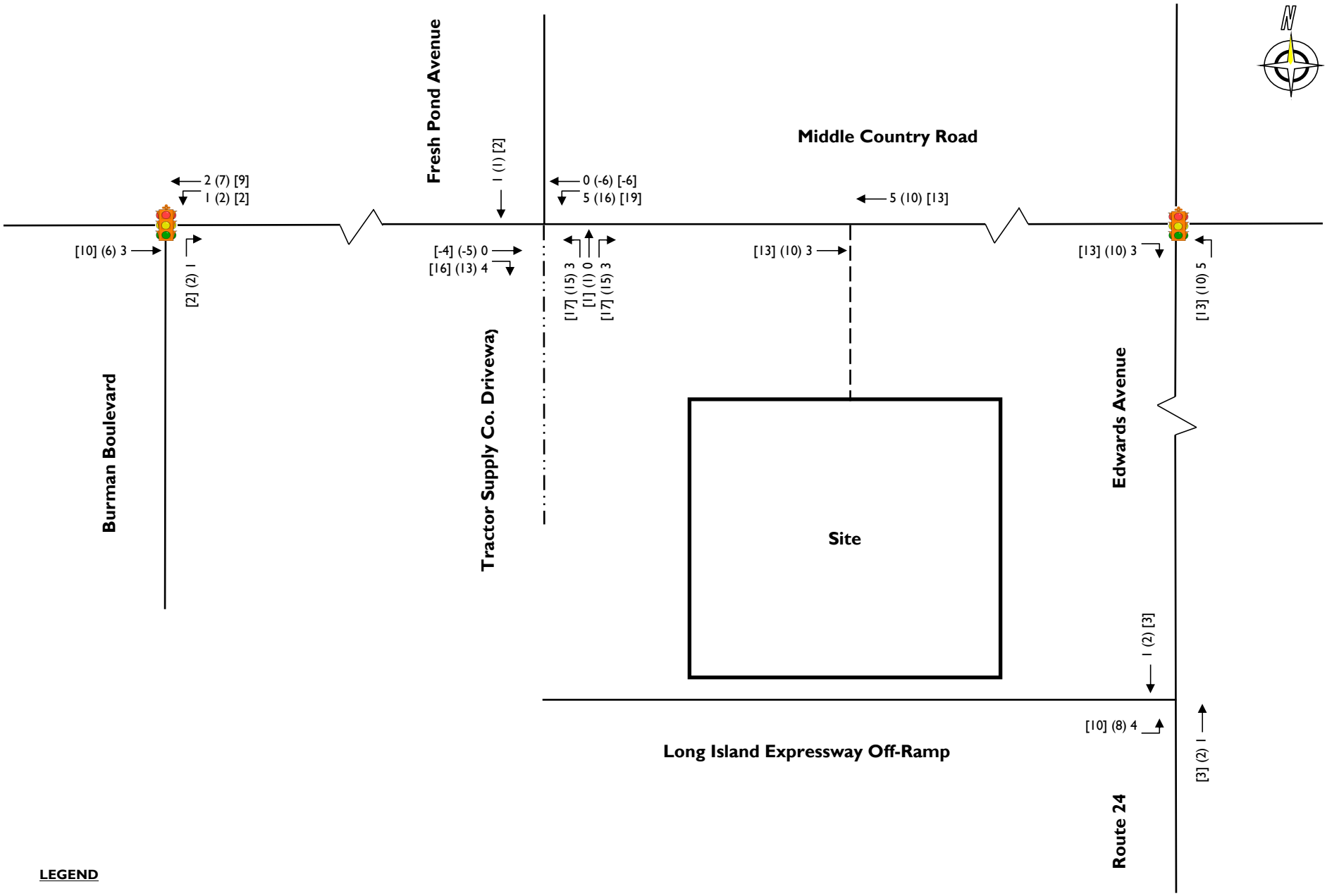
LEGEND

- Existing Roadway
- Proposed Driveway
- Existing Private Driveway
- AM (PM) [SAT] Peak Hour Volumes
- Signalized Intersection

STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

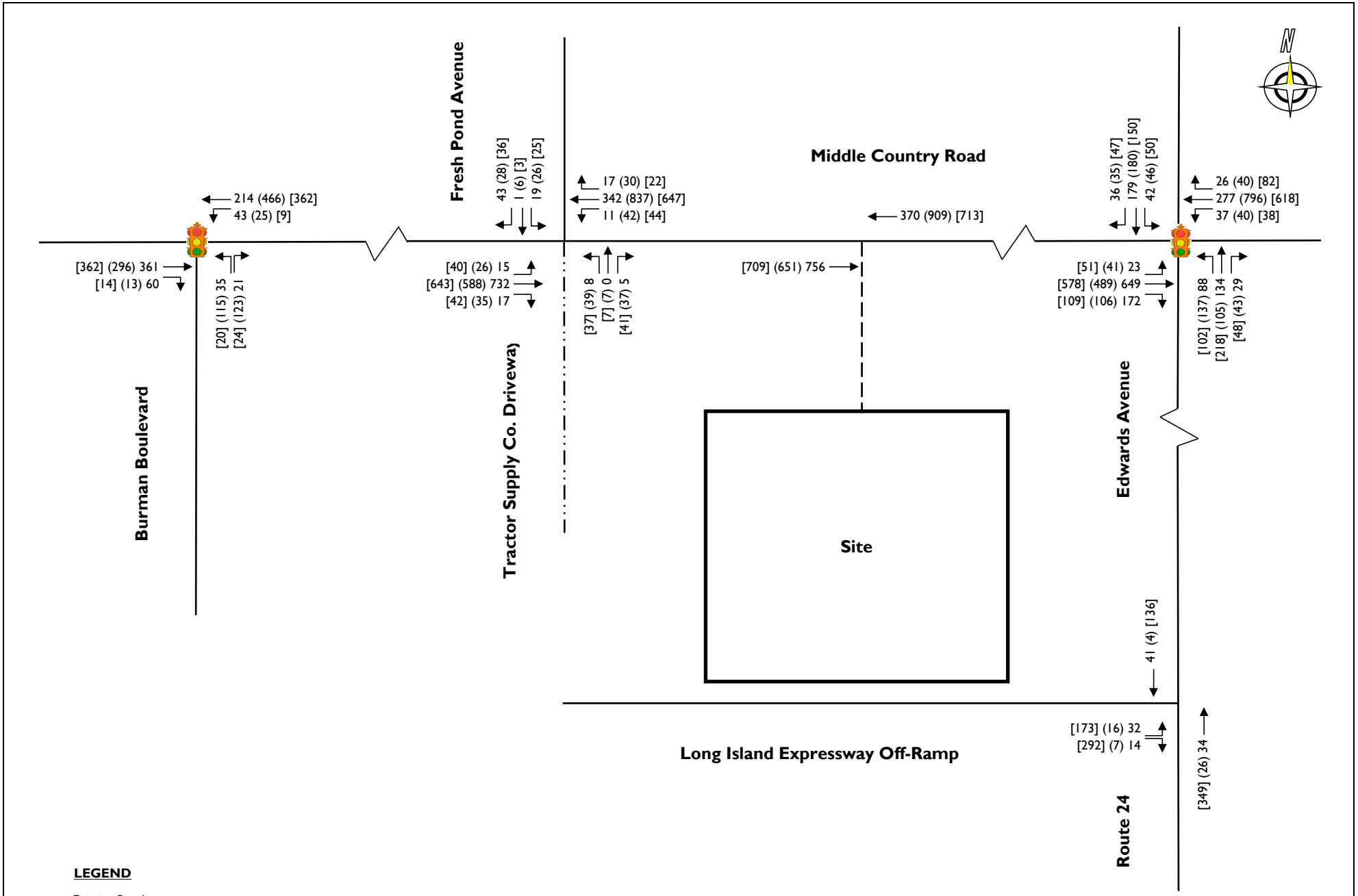
FIGURE 5
2023 Base Traffic Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

FIGURE 6
Other Planned Projects
Future Traffic Volumes



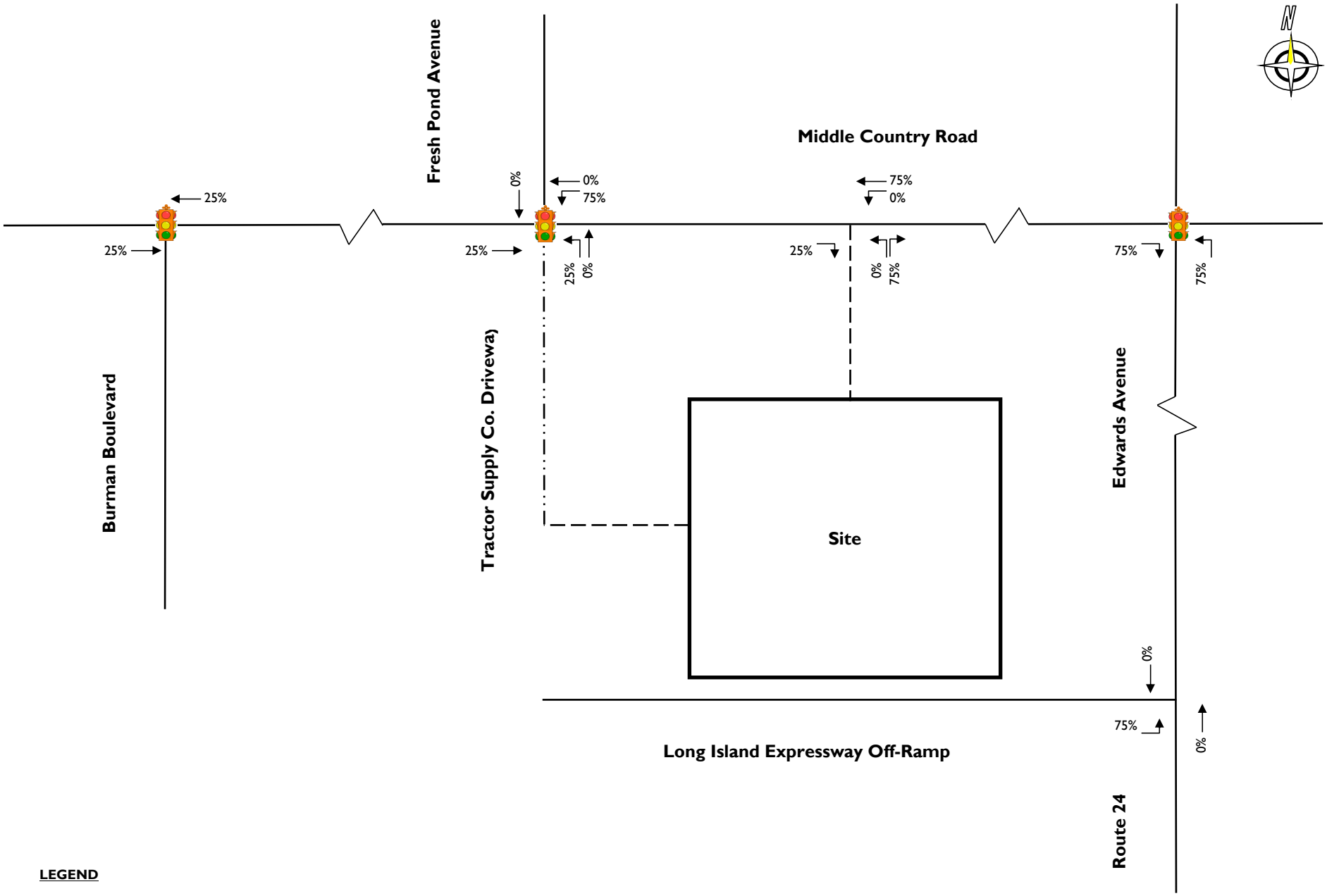
LEGEND

- Existing Roadway
- Proposed Driveway
- Existing Private Driveway
- AM (PM) [SAT] Peak Hour Volumes
- Signalized Intersection

STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

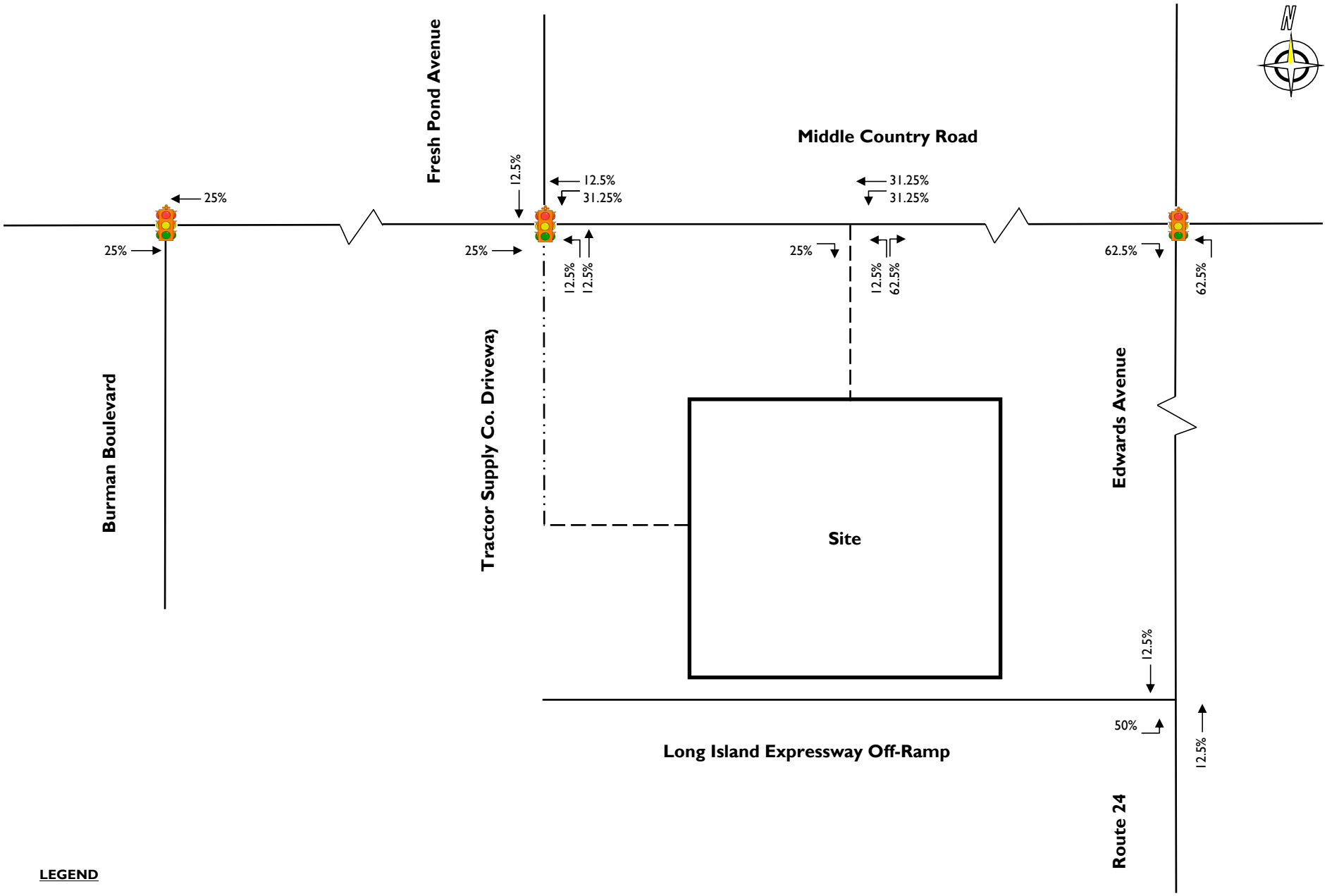
FIGURE 7
2023 Phase I No-Build
Traffic Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

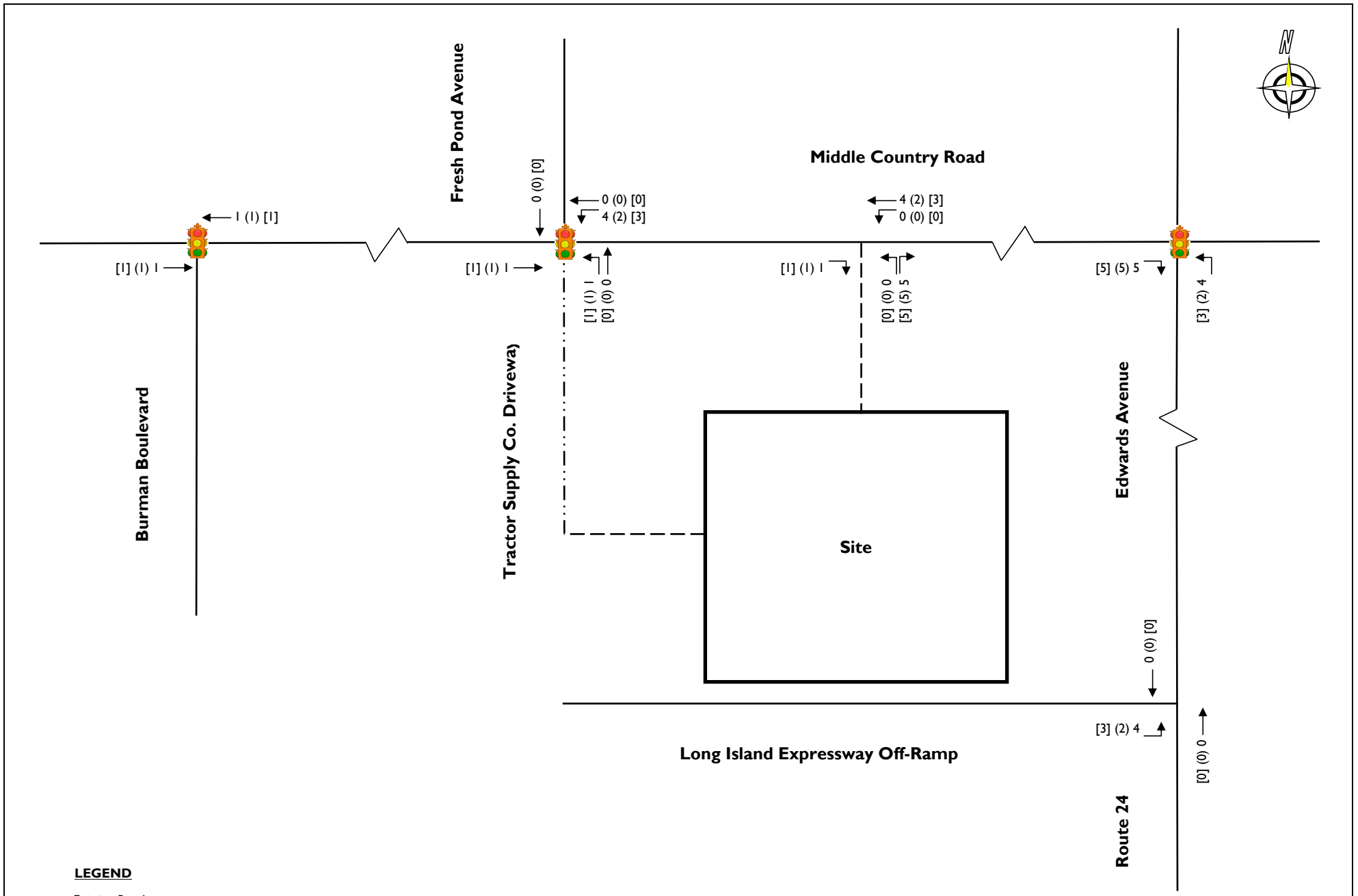
FIGURE 8
Truck Routing for Condition A



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

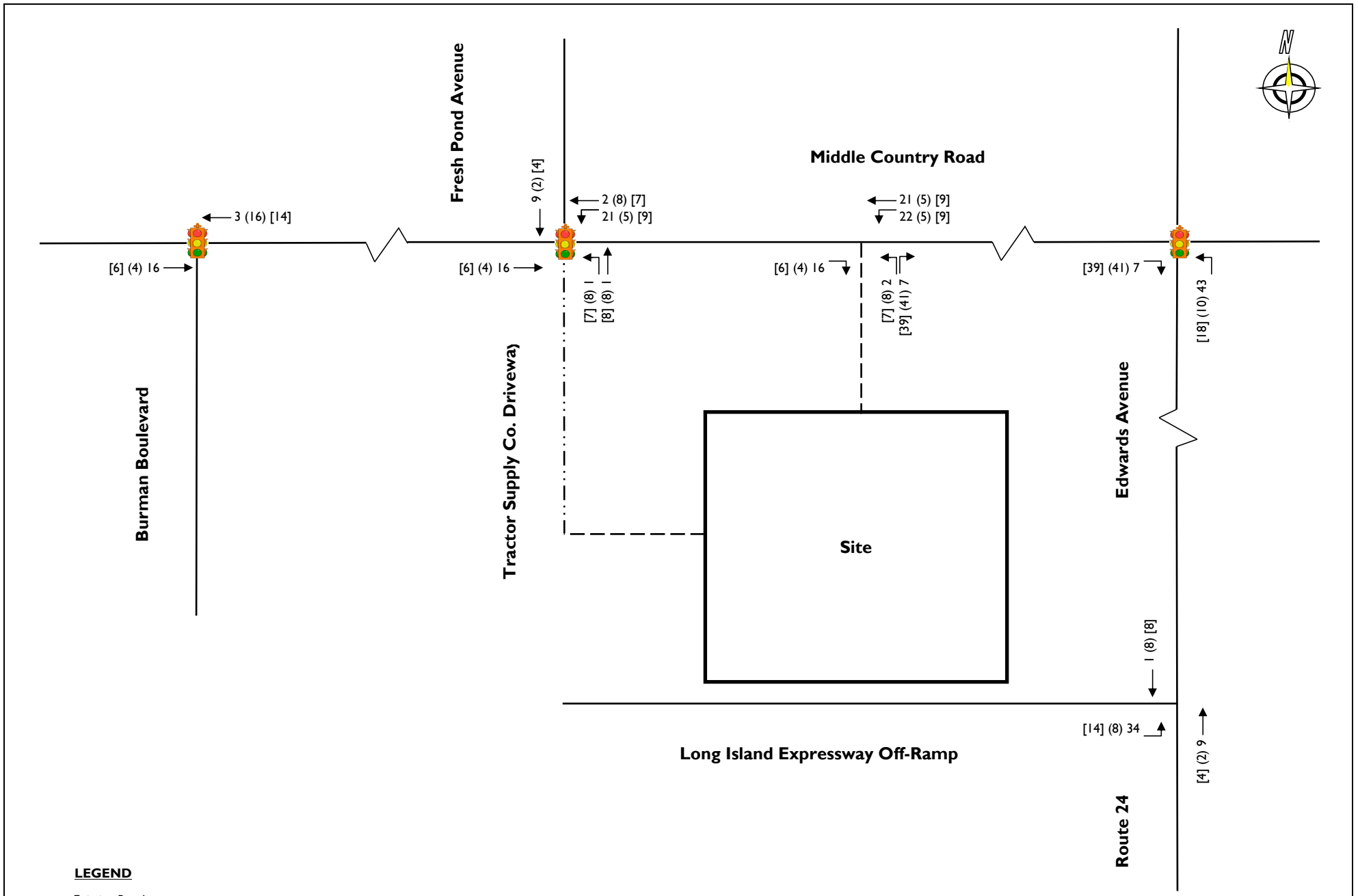
FIGURE 9
Passenger Vehicle Routing for Condition A



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

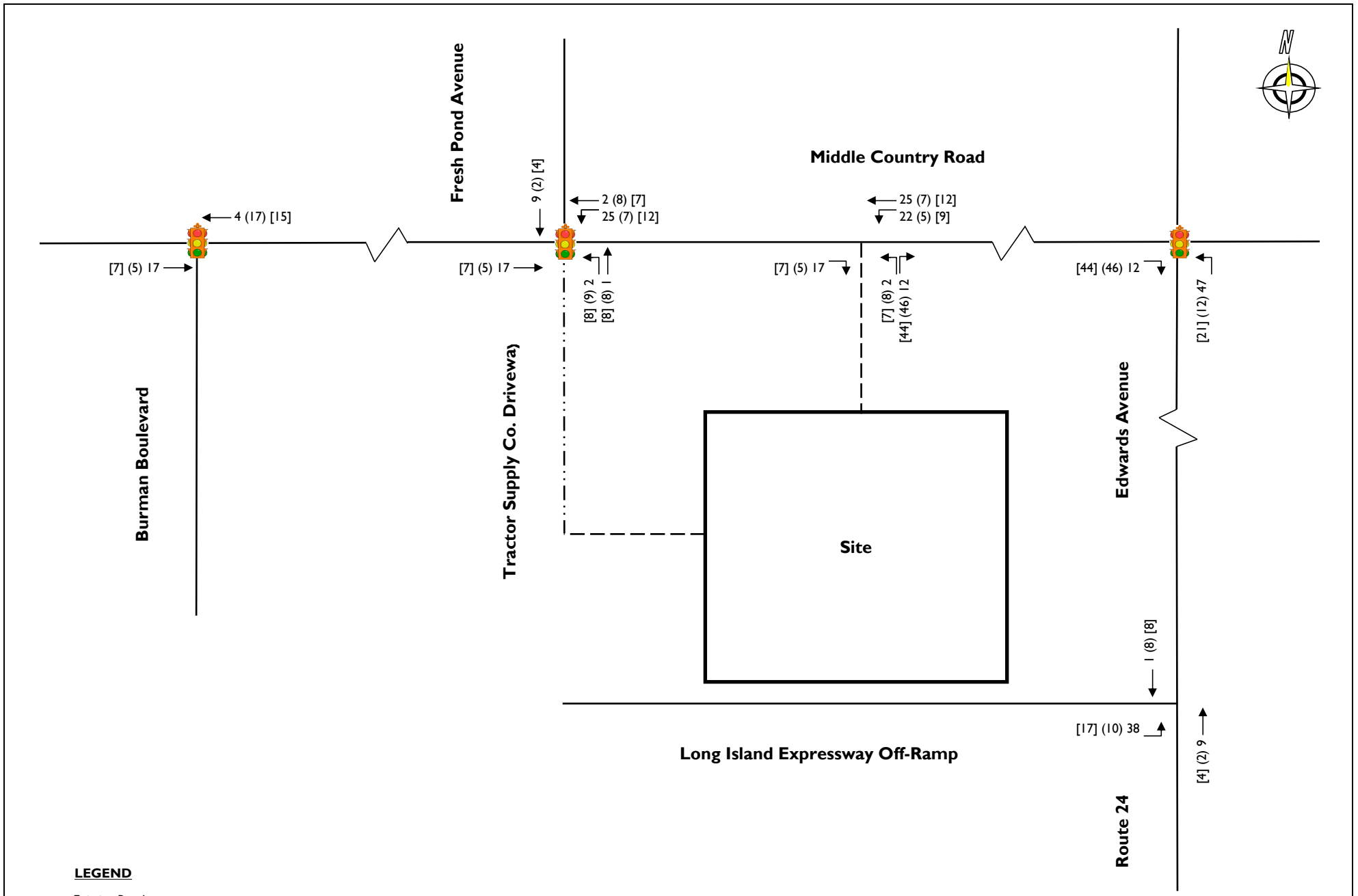
FIGURE 10
Phase 1A Site-Generated Truck Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

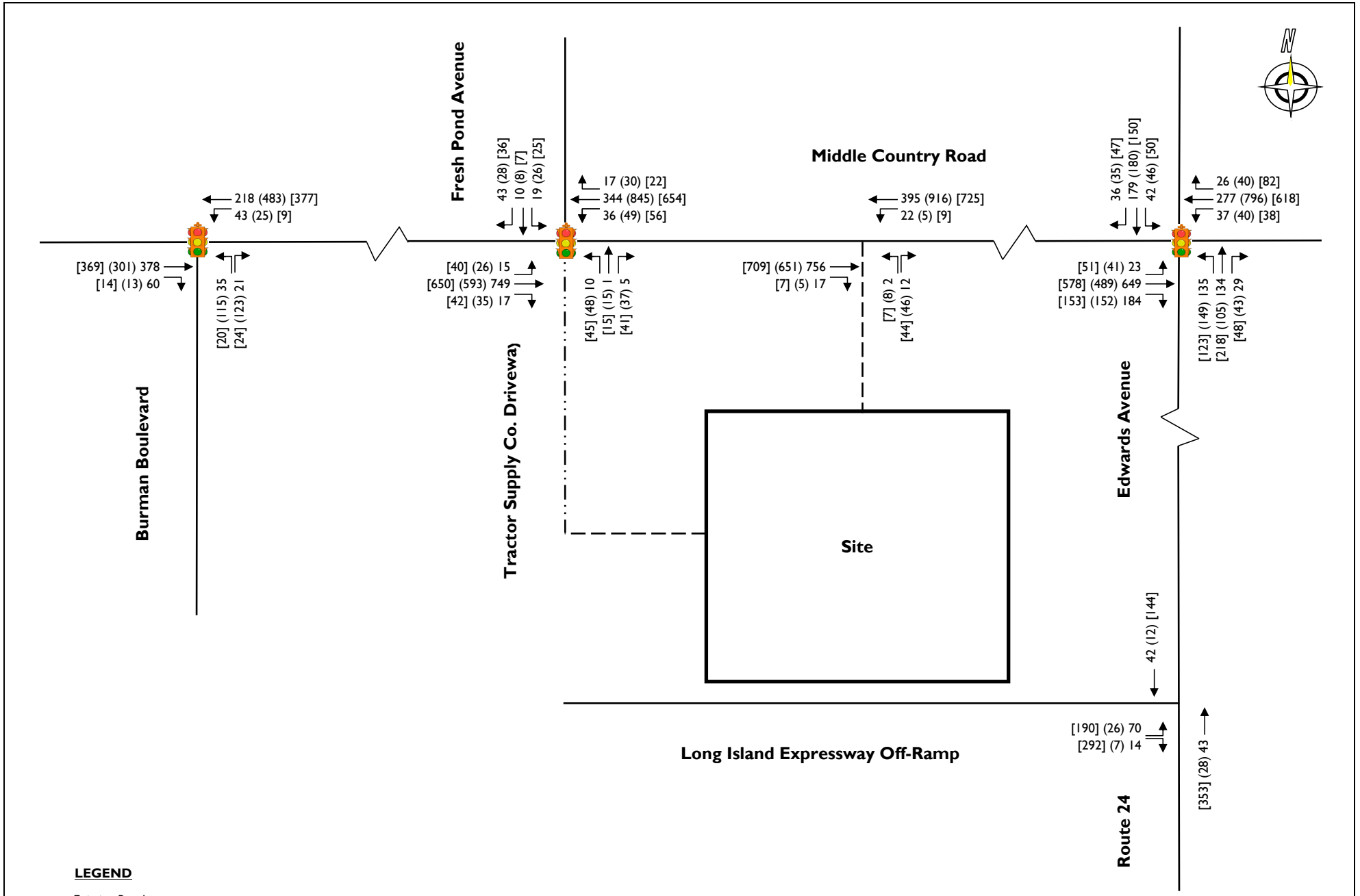
FIGURE 11
Phase 1A Site-Generated Passenger Vehicle Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

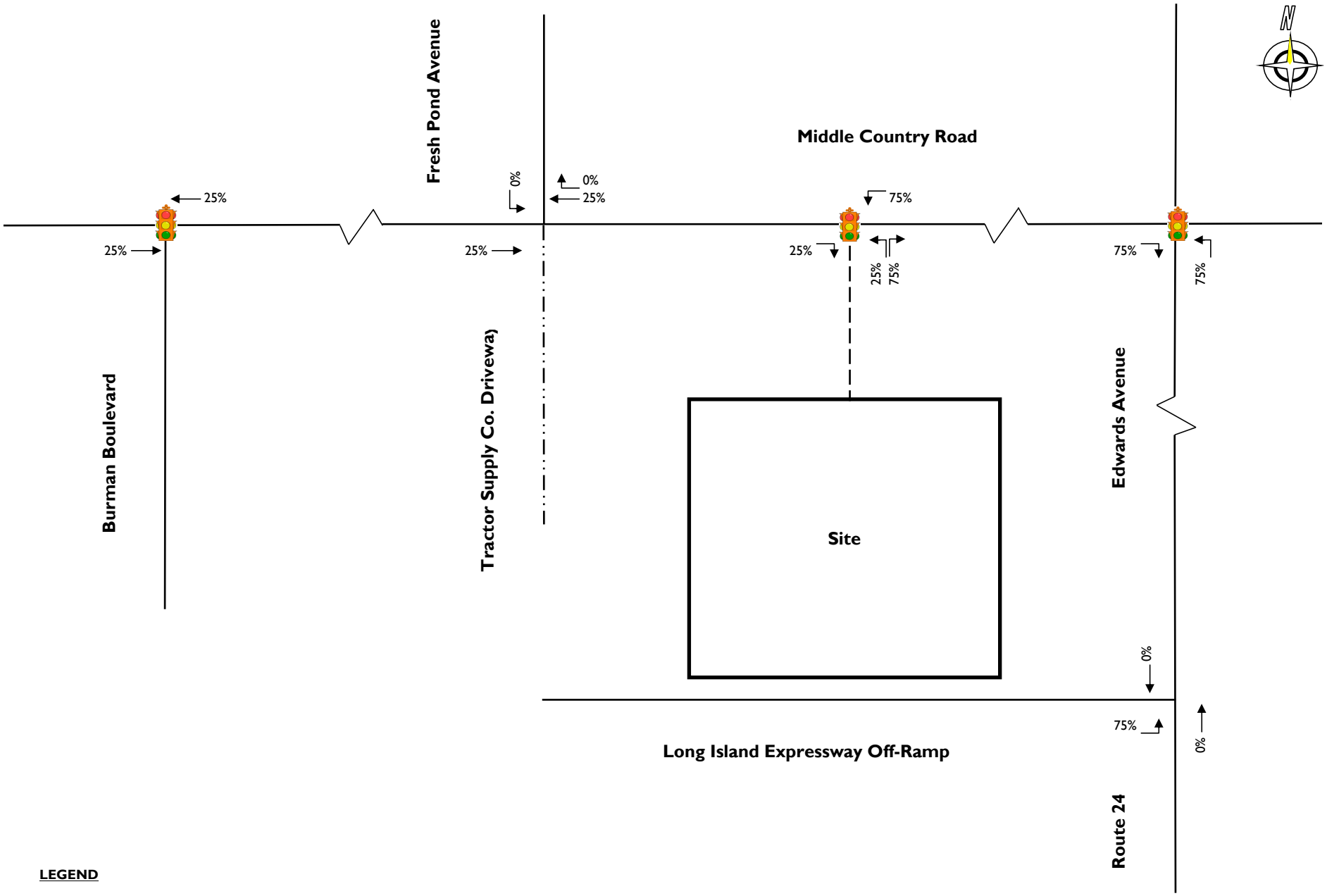
FIGURE 12
Phase 1A Total Site-Generated Traffic Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

FIGURE 13
2023 Phase 1A Build
Traffic Volumes



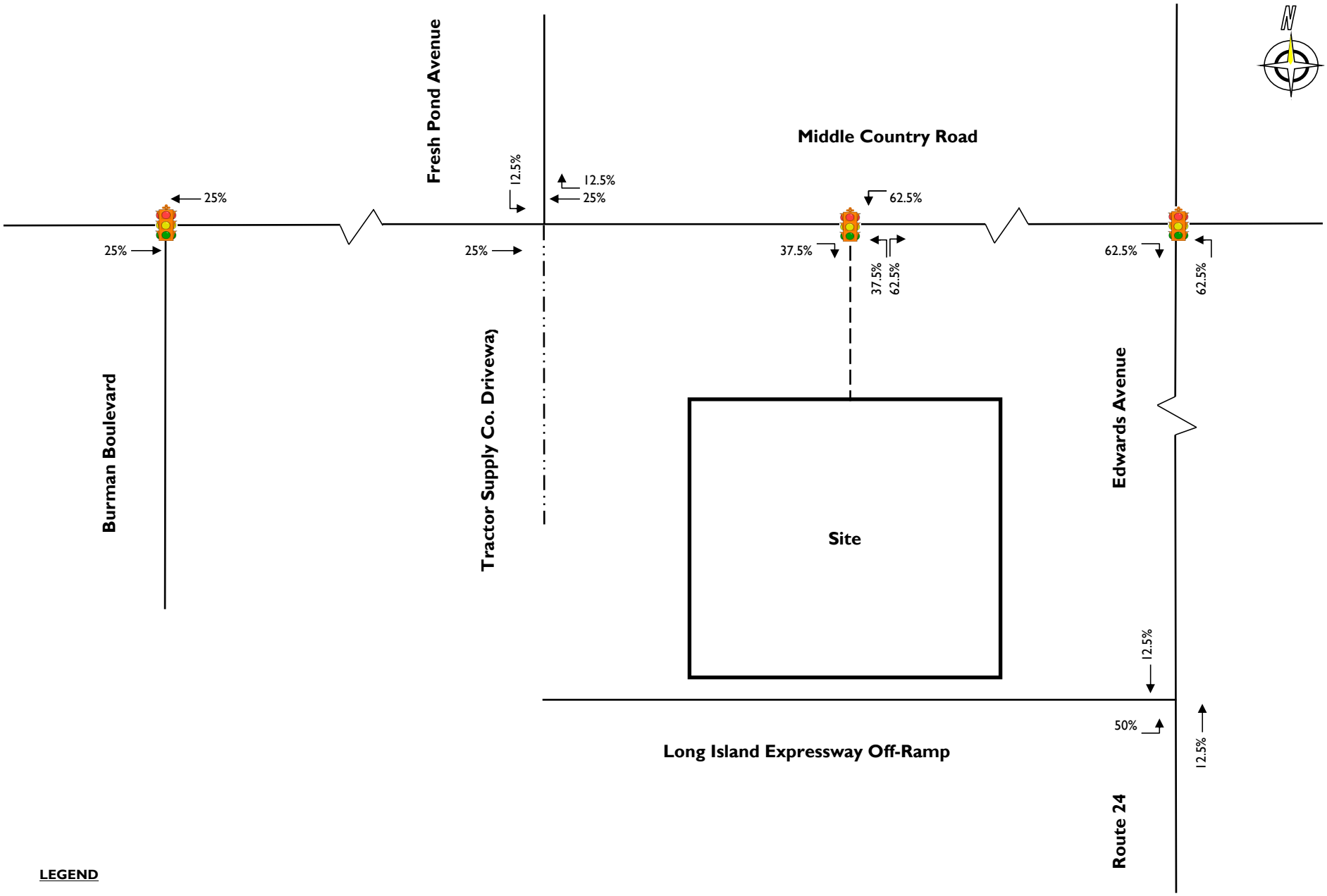
LEGEND

- Existing Roadway
- Proposed Driveway
- Existing Private Driveway
- AM Peak Hour Volumes
- Signalized Intersection

STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

FIGURE 14
Truck Routing for Condition B



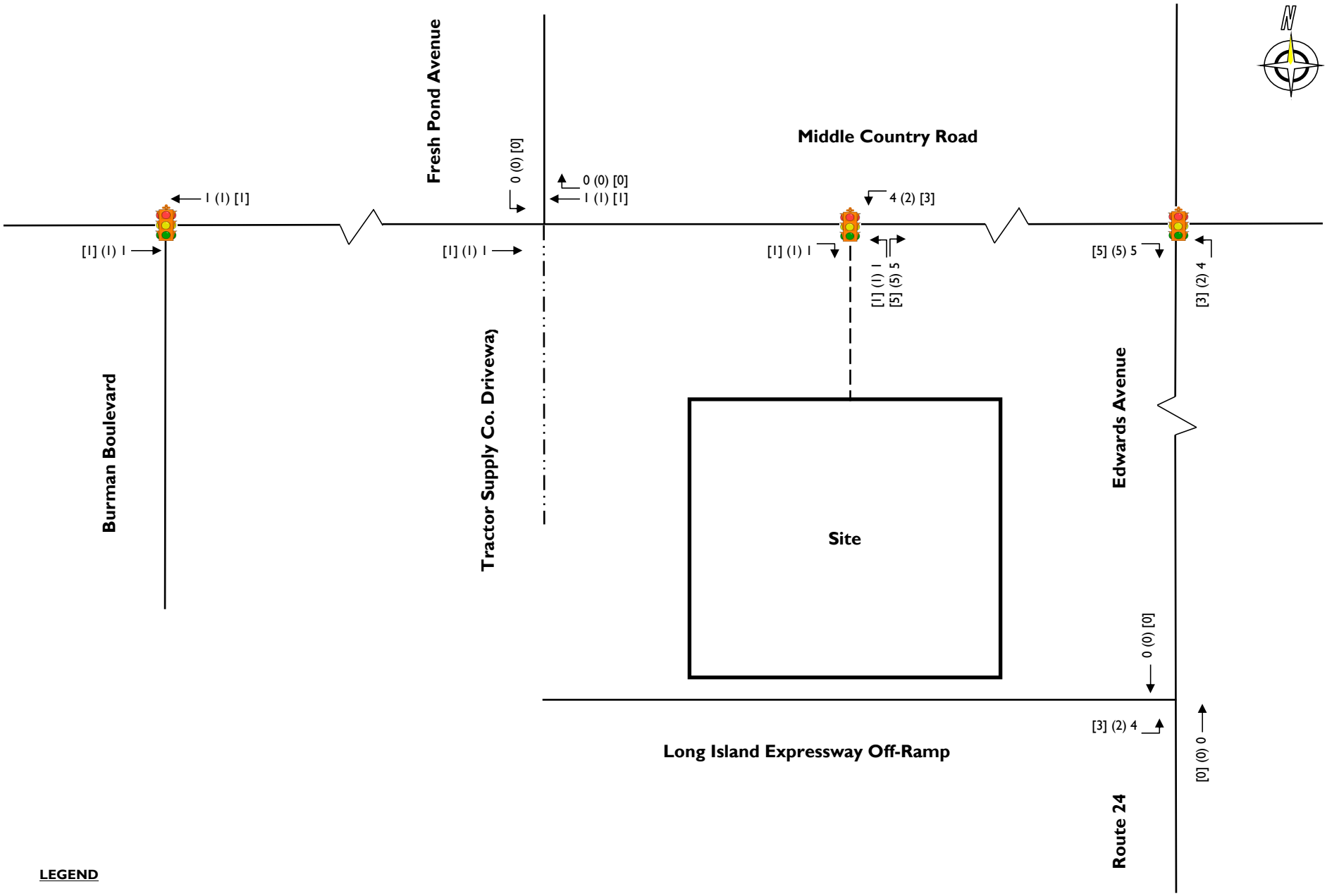
LEGEND

- Existing Roadway
- Proposed Driveway
- Existing Private Driveway
- AM Peak Hour Volumes
- Signalized Intersection

STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

FIGURE 15
Passenger Vehicle Routing for Condition B



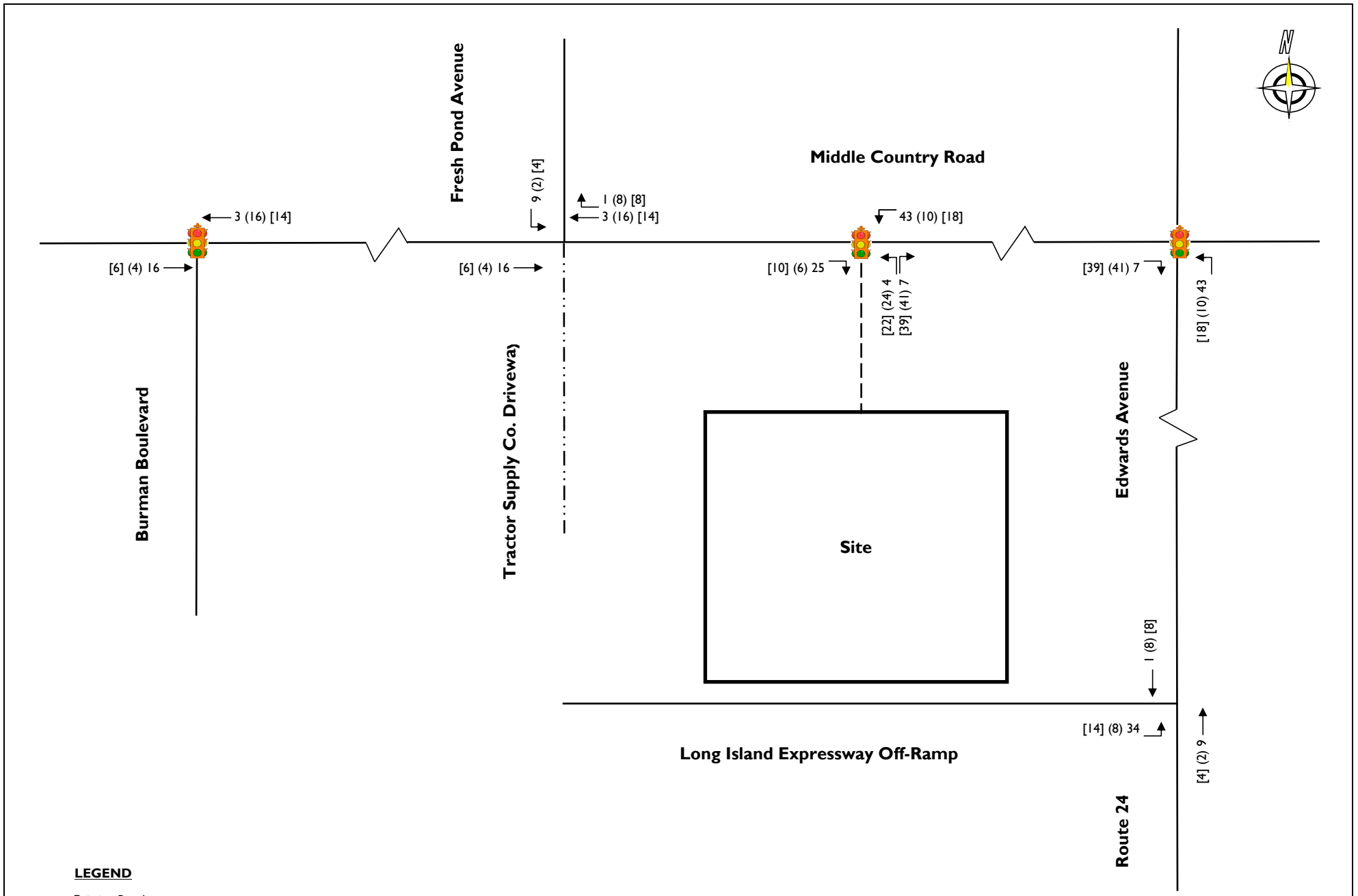
LEGEND

- Existing Roadway
- Proposed Driveway
- Existing Private Driveway
- AM (PM) [SAT] Peak Hour Volumes
- Signalized Intersection

STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

FIGURE 16
Phase 1B Site-Generated Truck Volumes



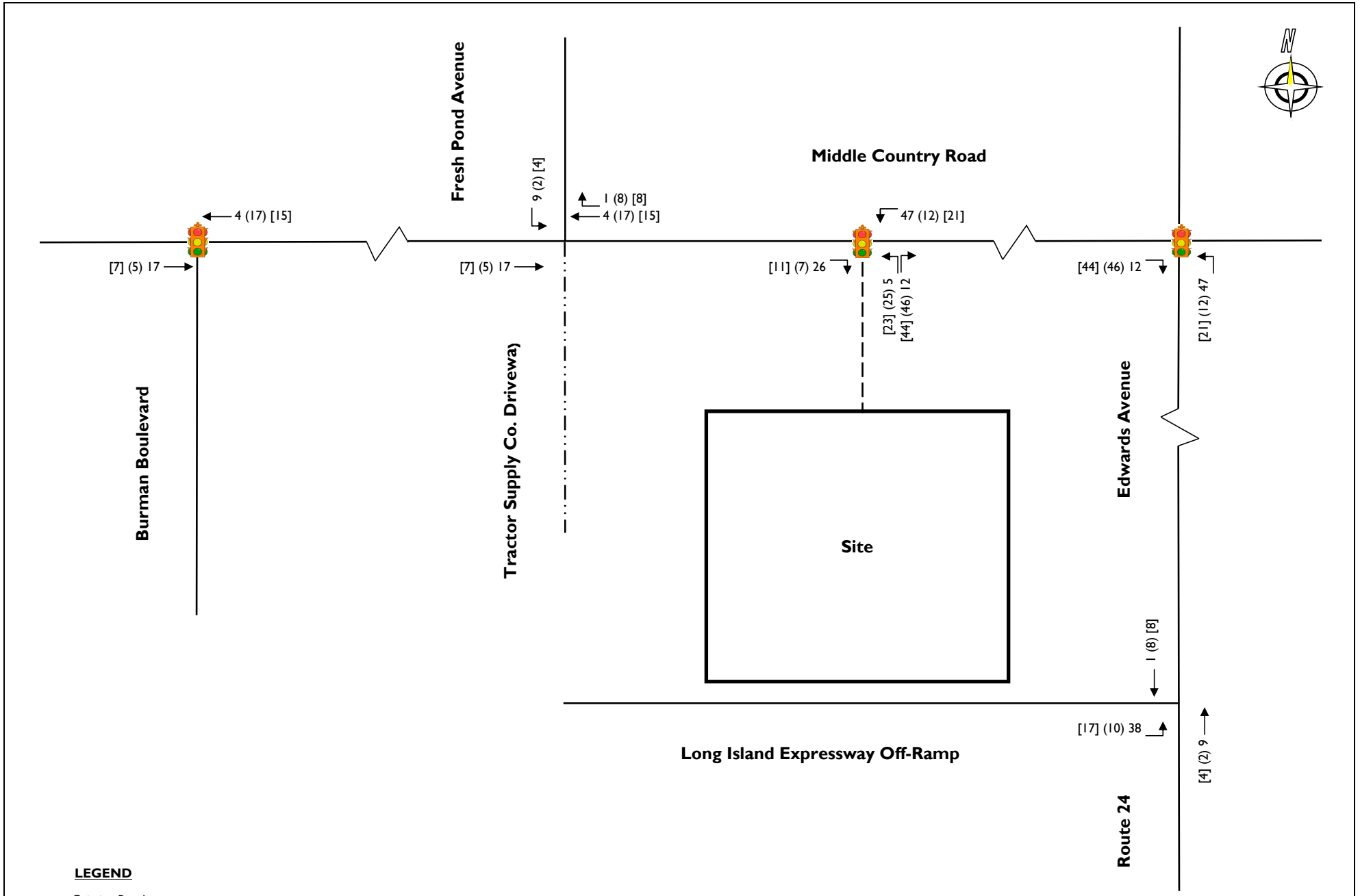
LEGEND

- Existing Roadway
- Proposed Driveway
- Existing Private Driveway
- AM (PM) [SAT] Peak Hour Volumes
- Signalized Intersection

STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

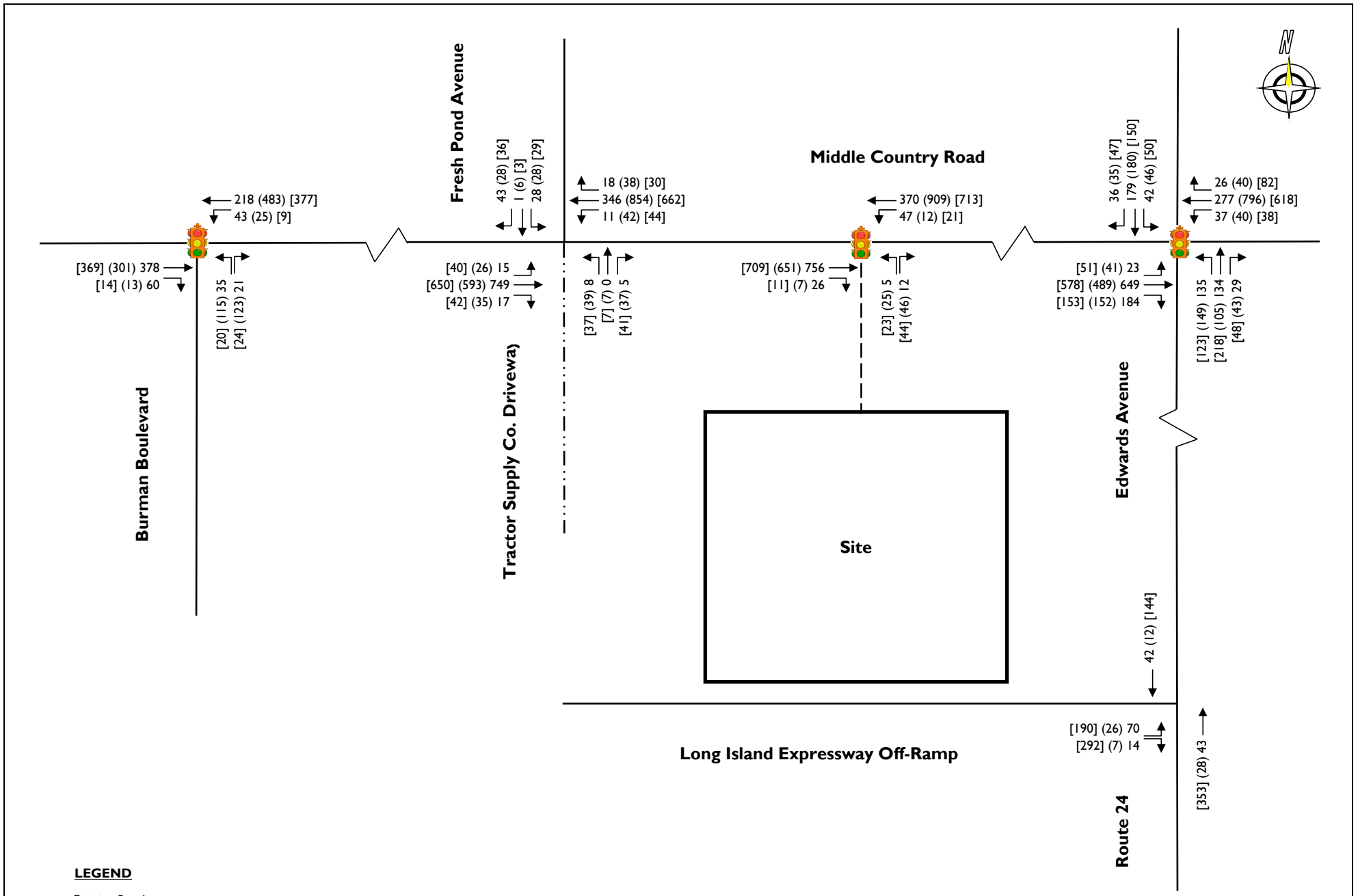
FIGURE 17
Phase 1B Site-Generated Passenger Vehicle Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

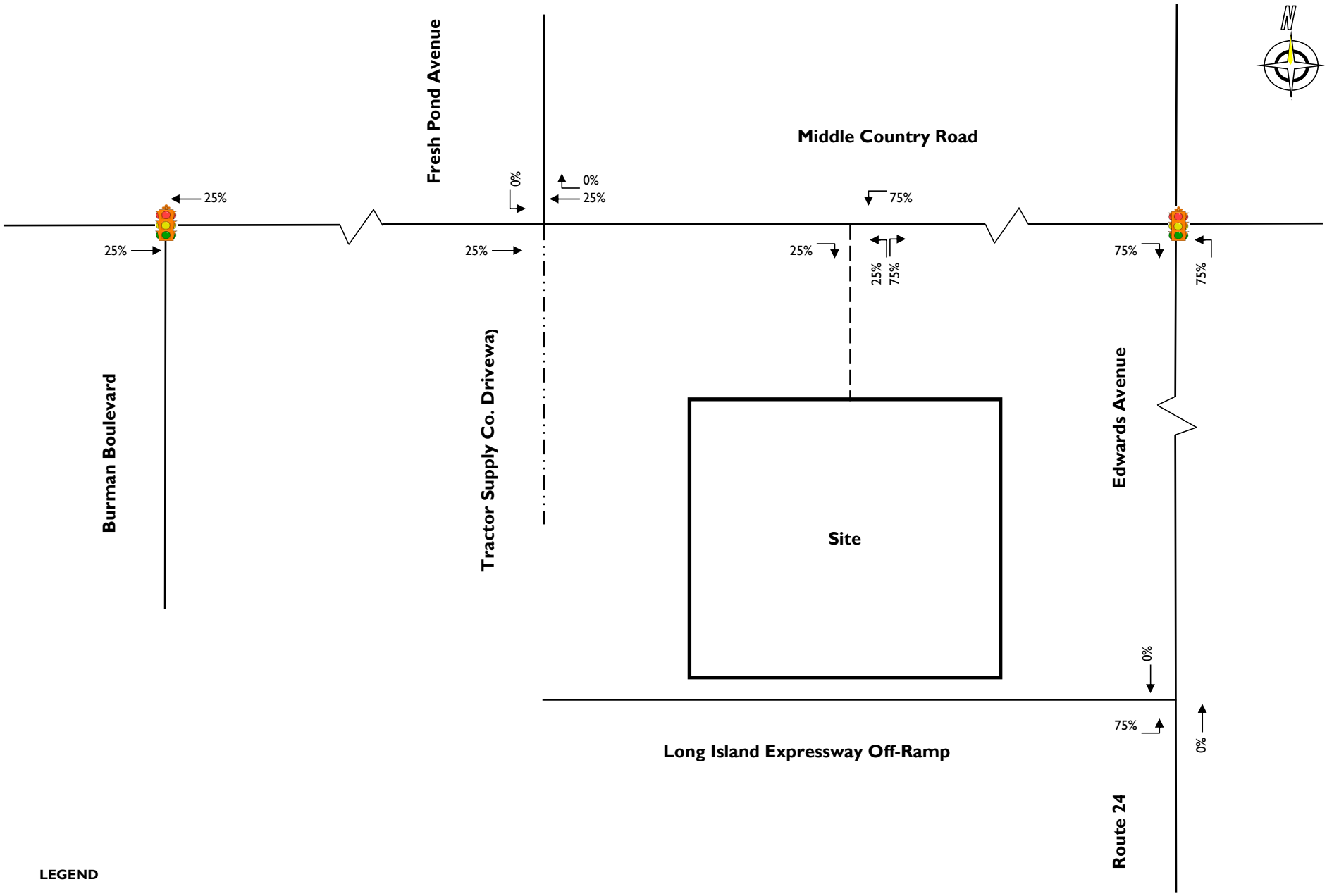
FIGURE 18
Phase 1B Total Site-Generated Traffic Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

FIGURE 19
2023 Phase 1B Build
Traffic Volumes



LEGEND

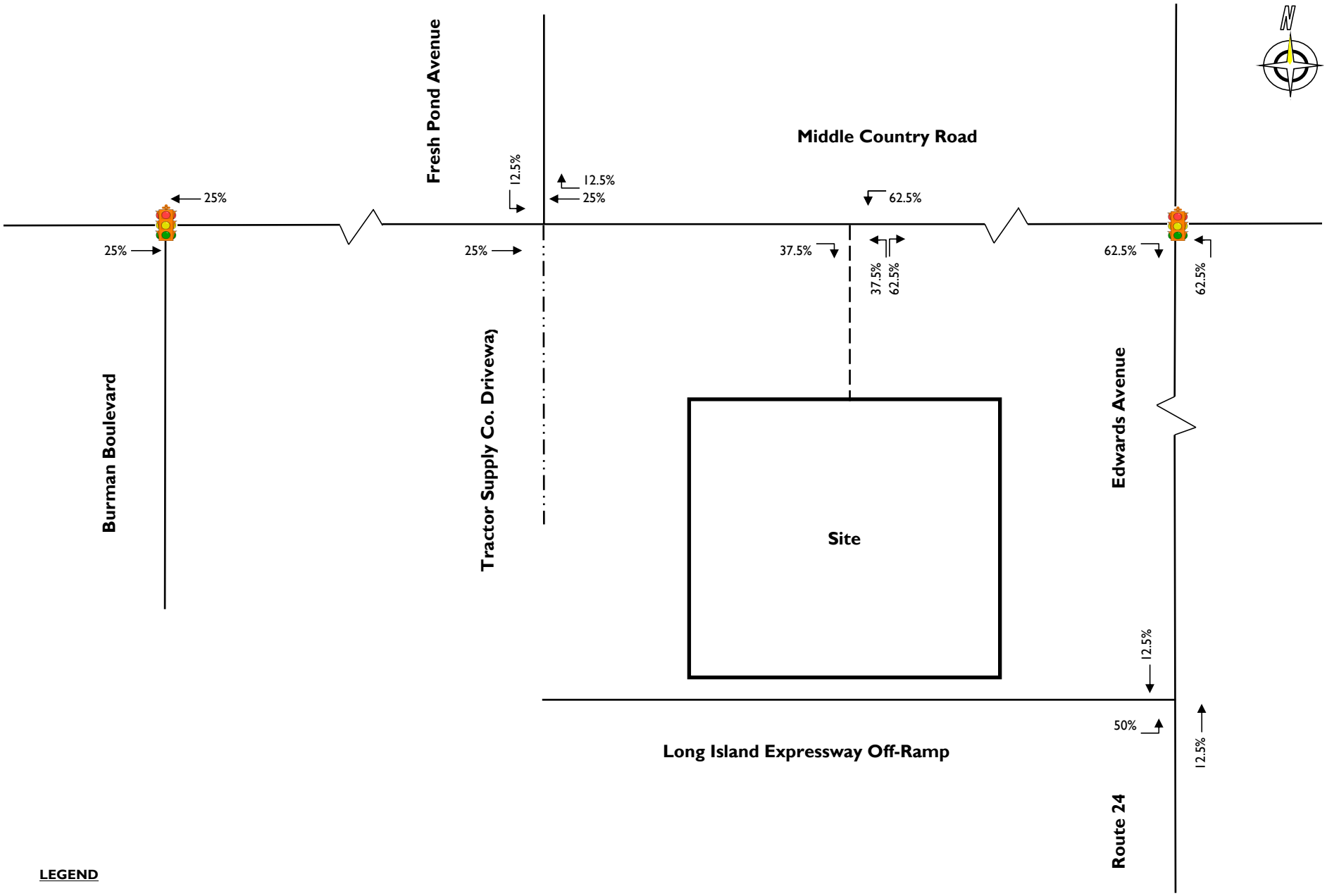
- Existing Roadway
- Proposed Driveway
- Existing Private Driveway
- AM Peak Hour Volumes
- Signalized Intersection

STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

FIGURE 20
Truck Routing for Condition B

A100



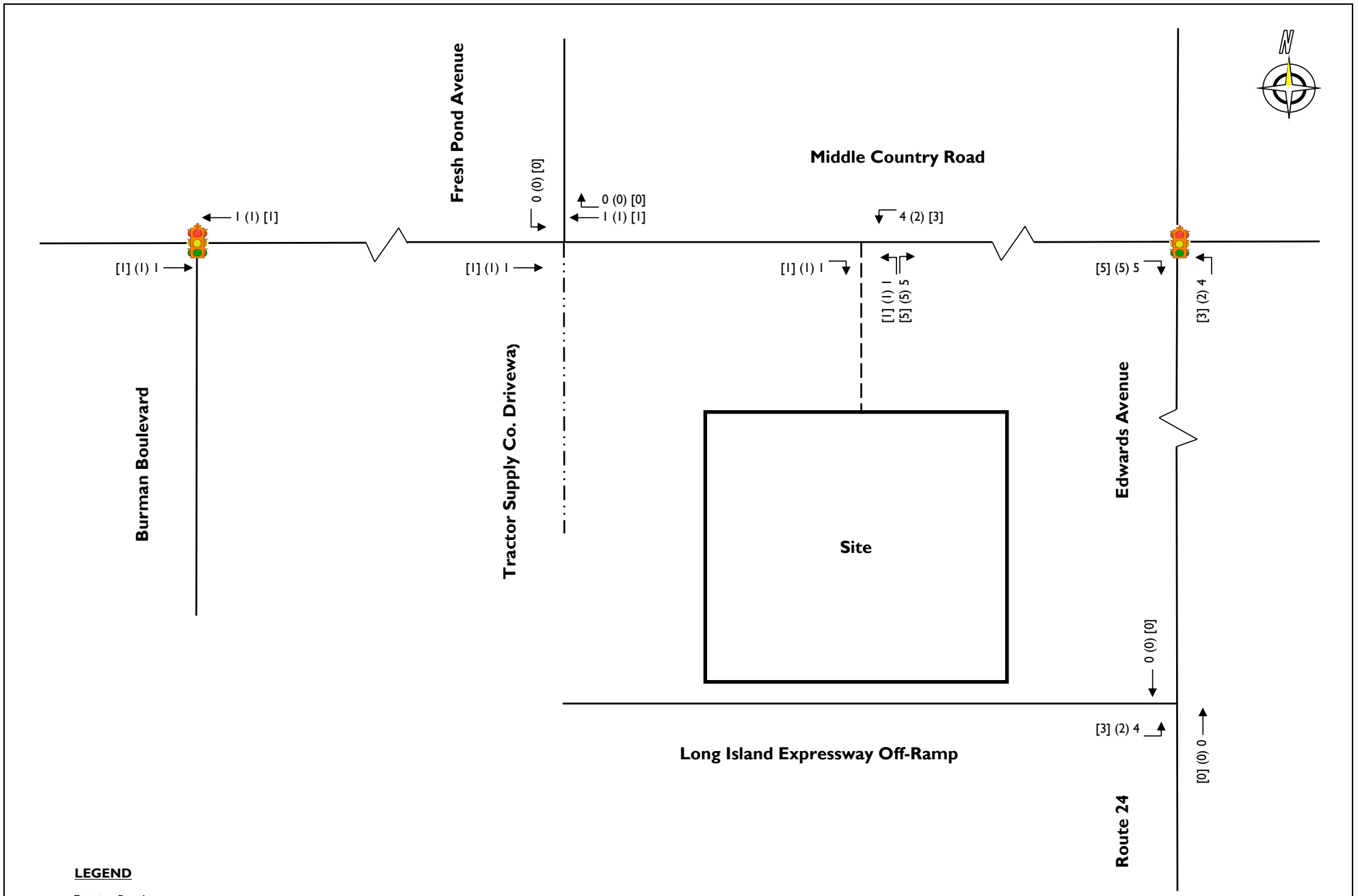
LEGEND

- Existing Roadway
- Proposed Driveway
- Existing Private Driveway
- AM Peak Hour Volumes
- Signalized Intersection

STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

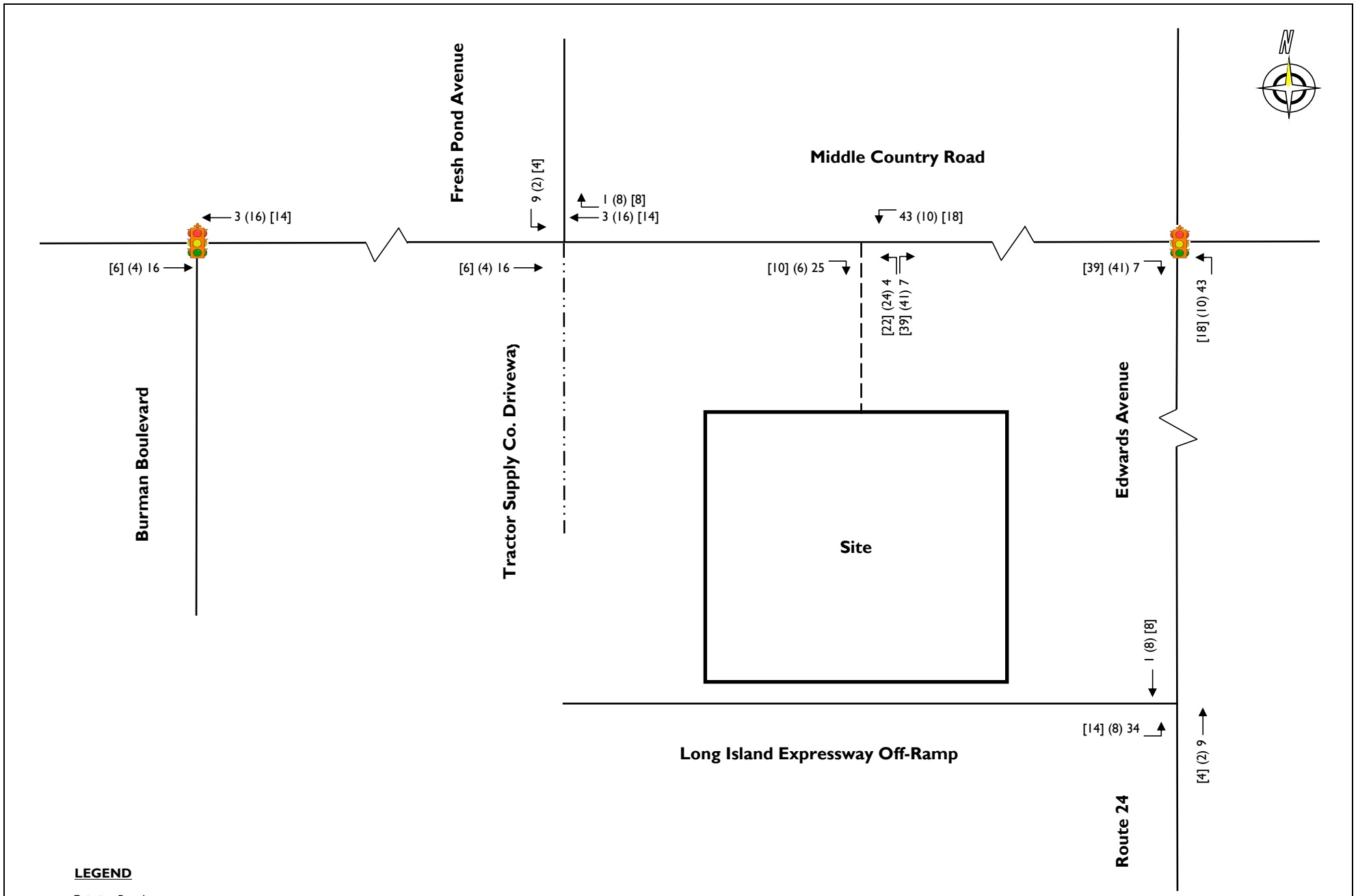
FIGURE 21
Passenger Vehicle Routing for Condition B



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

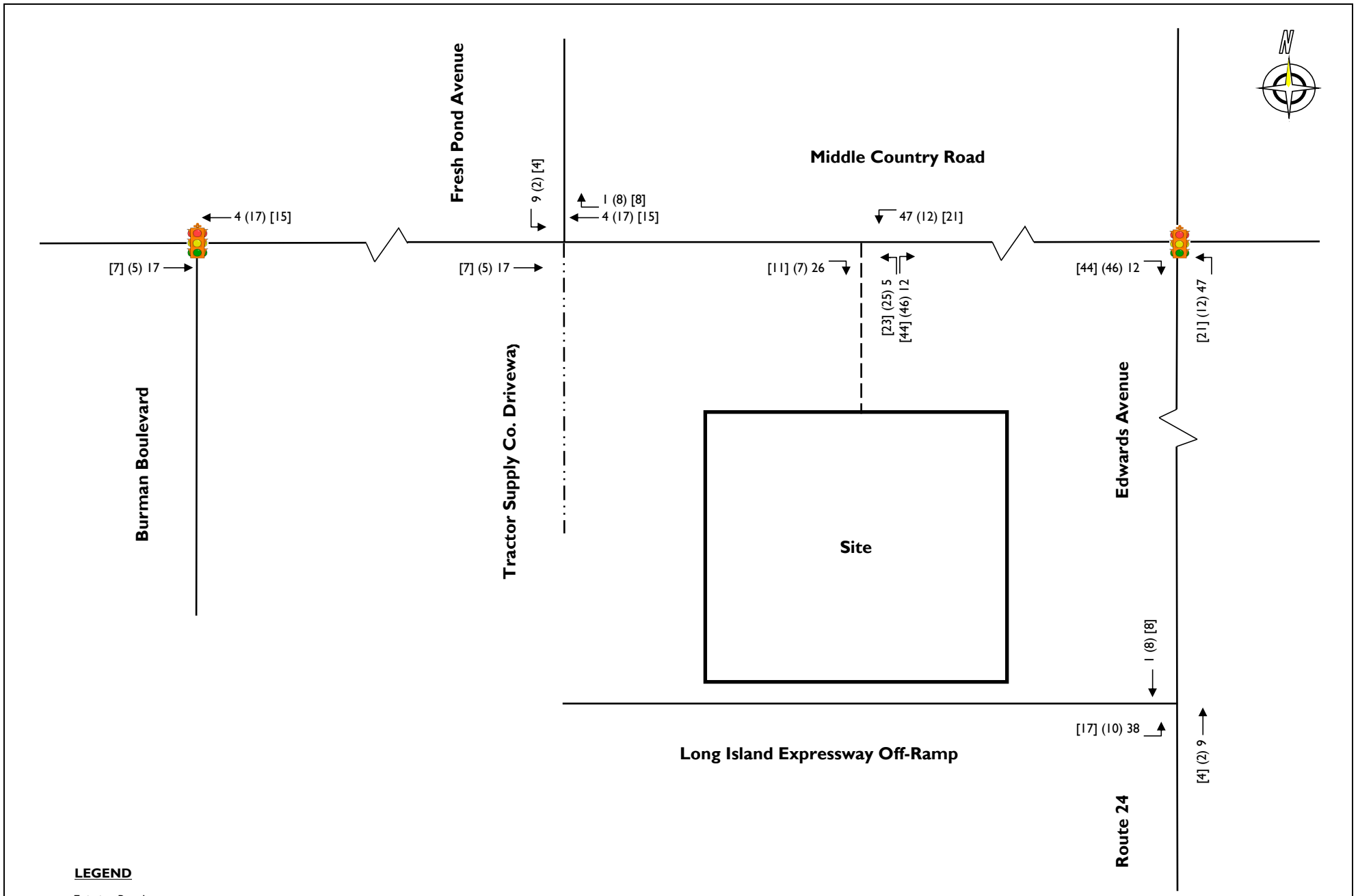
FIGURE 22
Phase 1C Site-Generated Truck Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

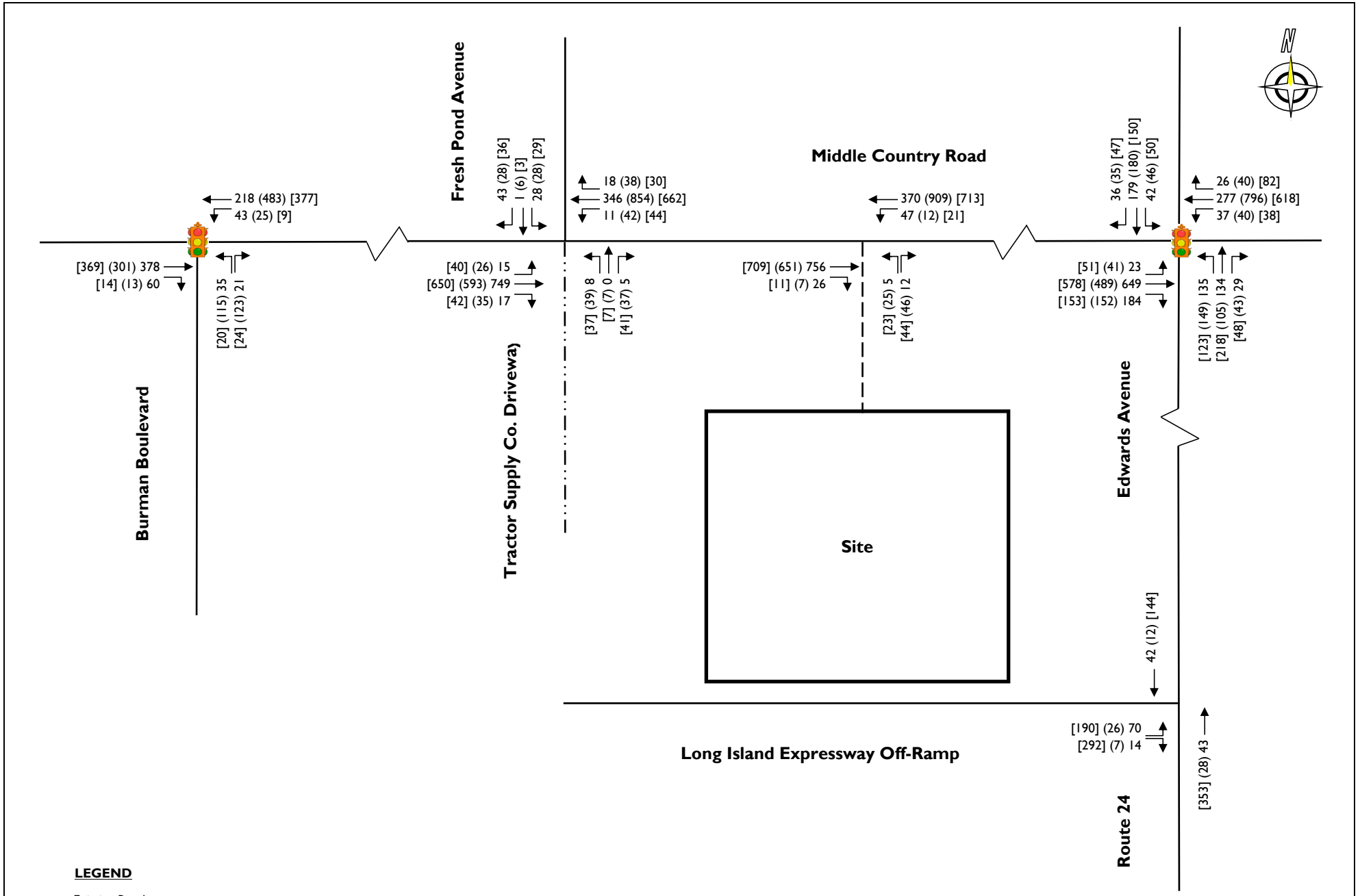
FIGURE 23
Phase 1C Site-Generated Passenger Vehicle Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

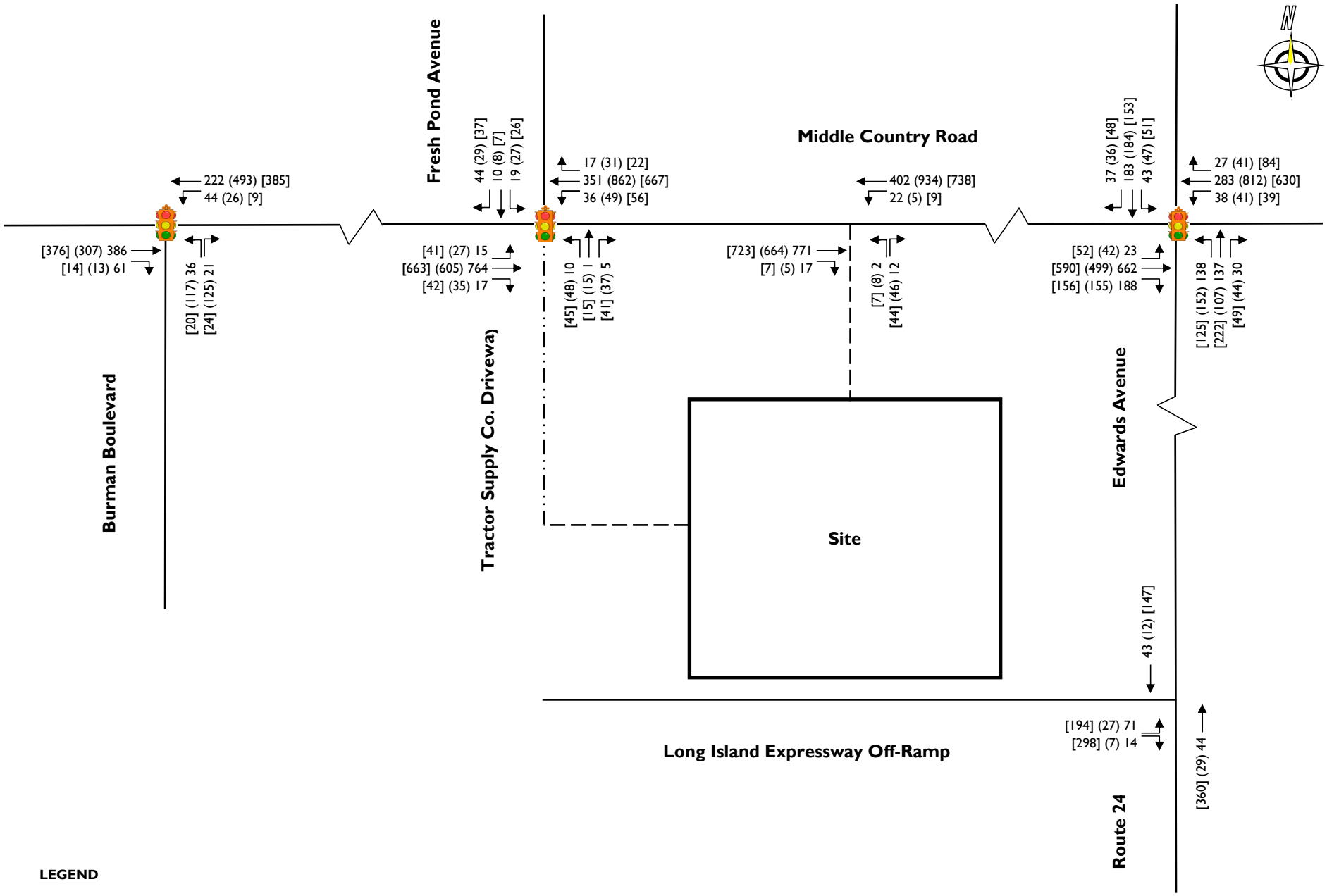
FIGURE 24
Phase 1C Total Site-Generated Traffic Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

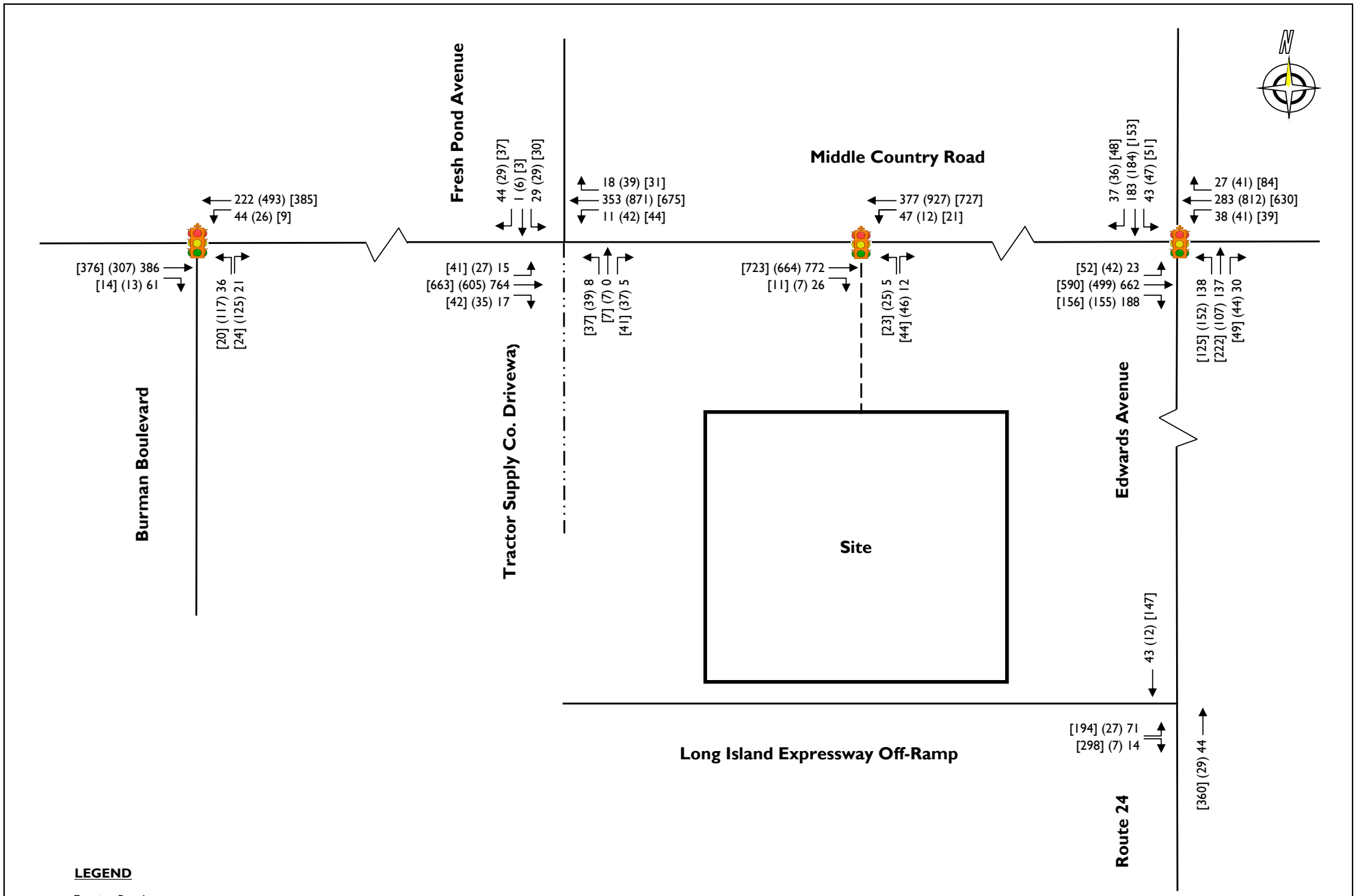
FIGURE 25
2023 Phase 1C Build
Traffic Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

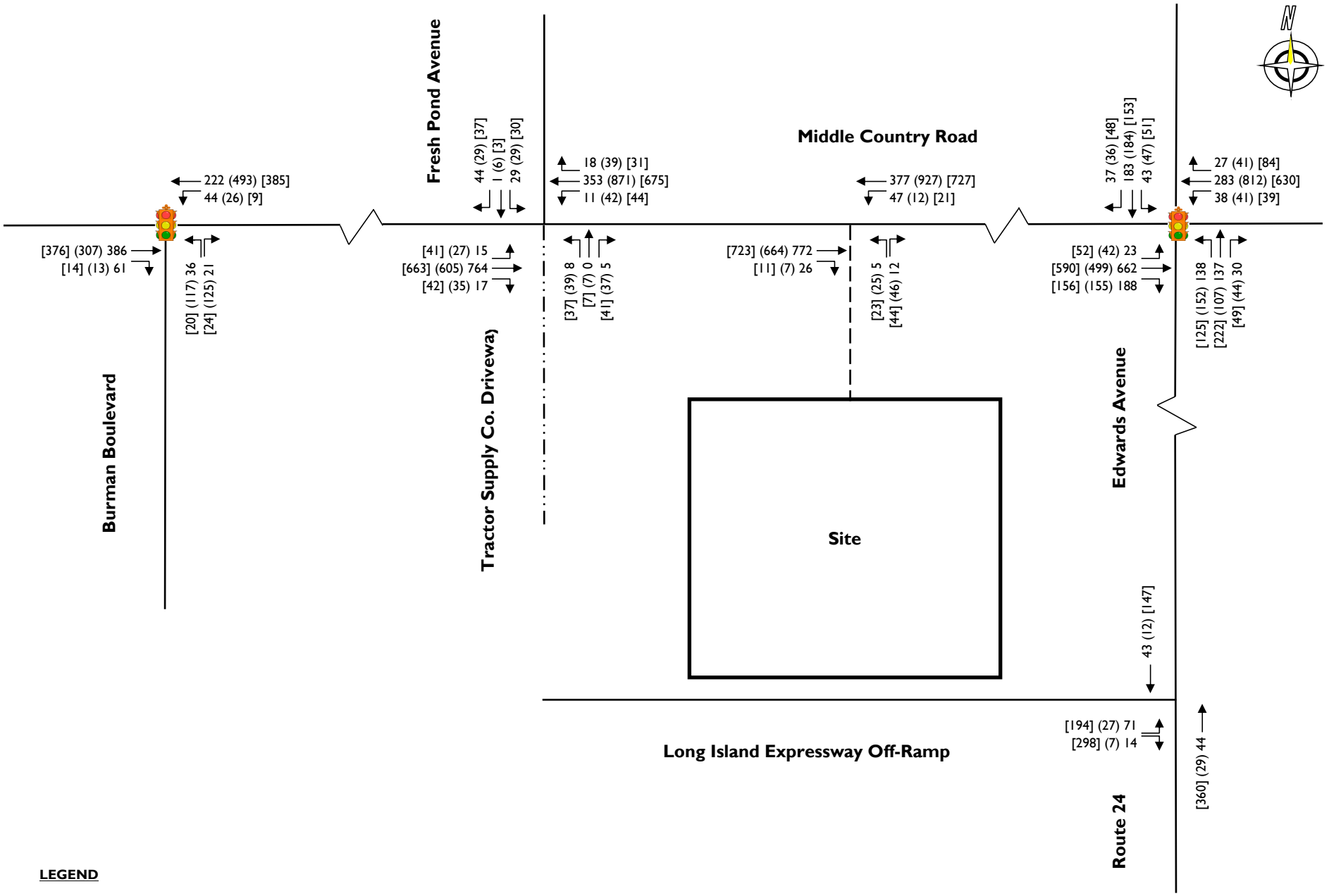
FIGURE 26
2025 Phase 2A No-Build
Traffic Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

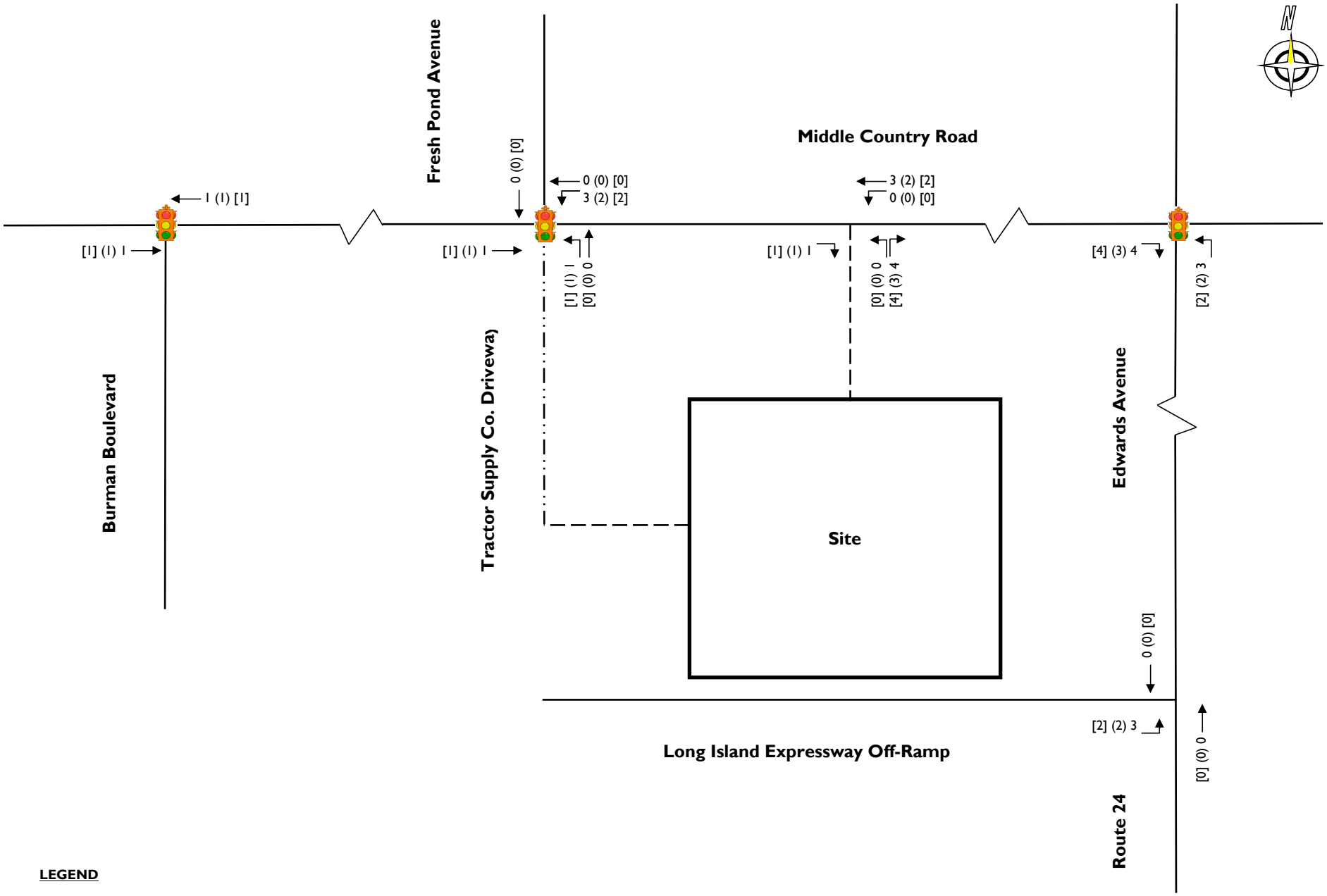
FIGURE 27
2025 Phase 2B No-Build
Traffic Volumes
Conditions



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

FIGURE 28
2025 Phase 2C No-Build
Traffic Volumes
Conditions



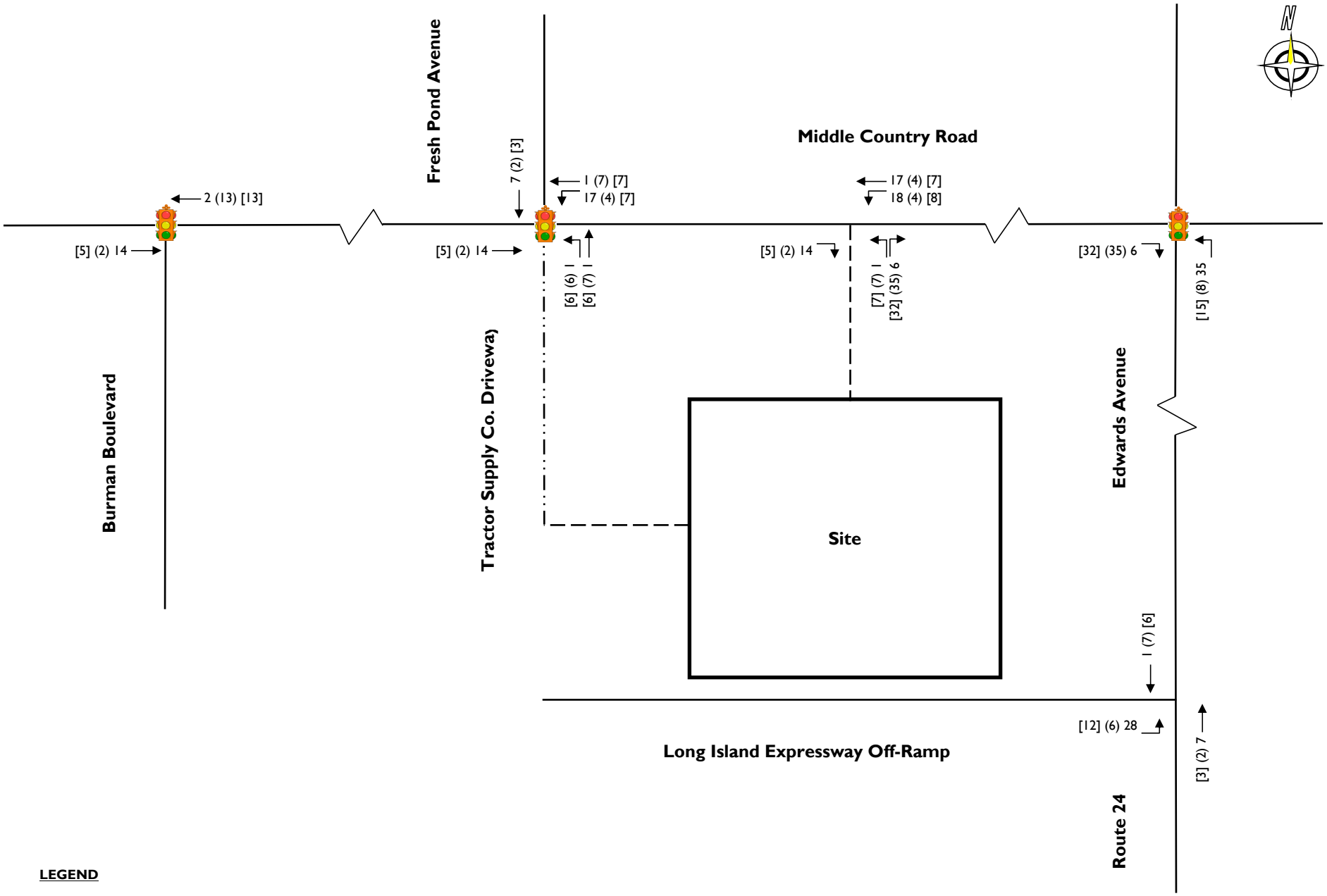
LEGEND

- Existing Roadway
- Proposed Driveway
- Existing Private Driveway
- AM (PM) [SAT] Peak Hour Volumes
- Signalized Intersection

STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

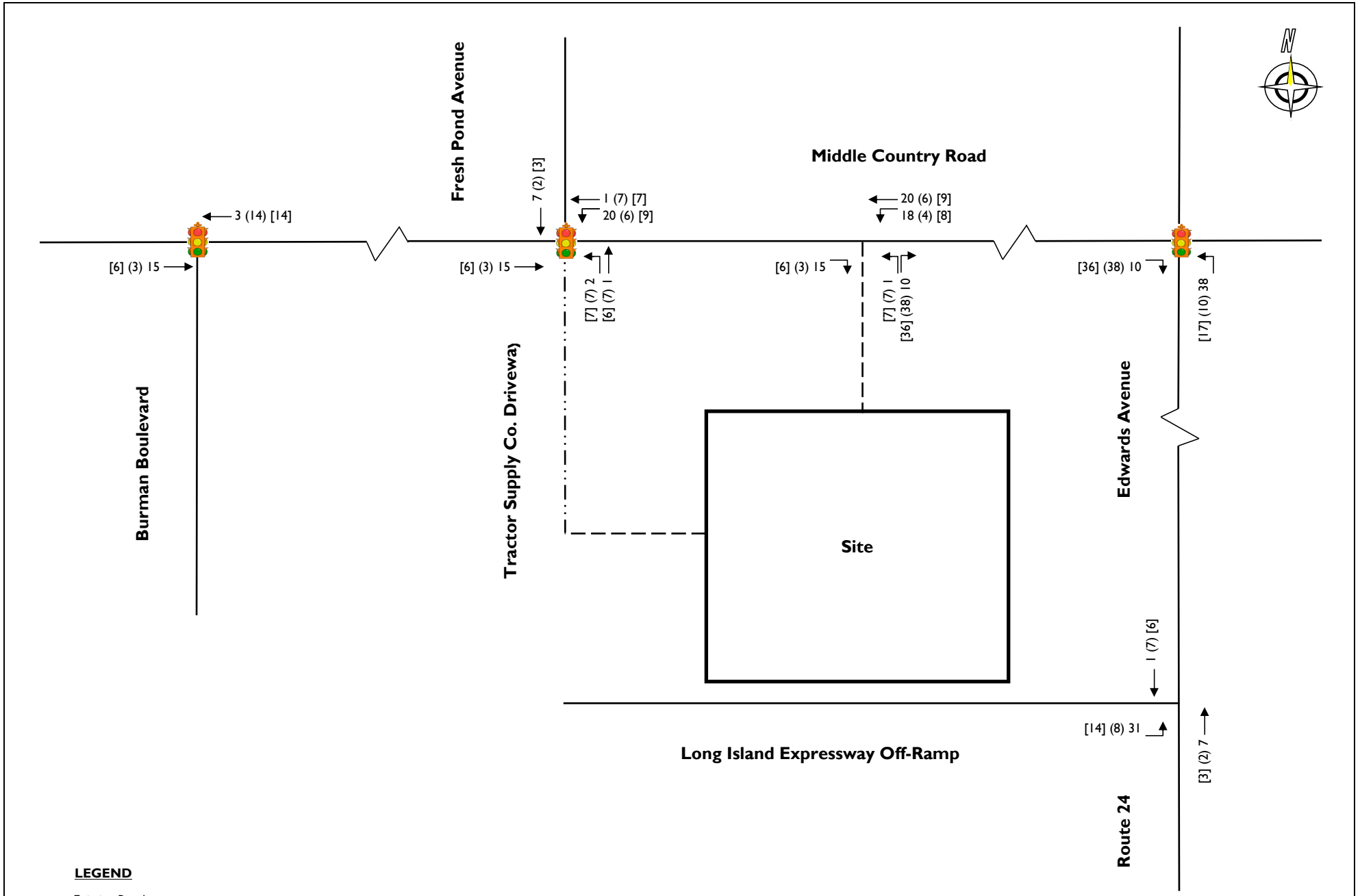
FIGURE 29
Phase 2A Site-Generated Truck Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

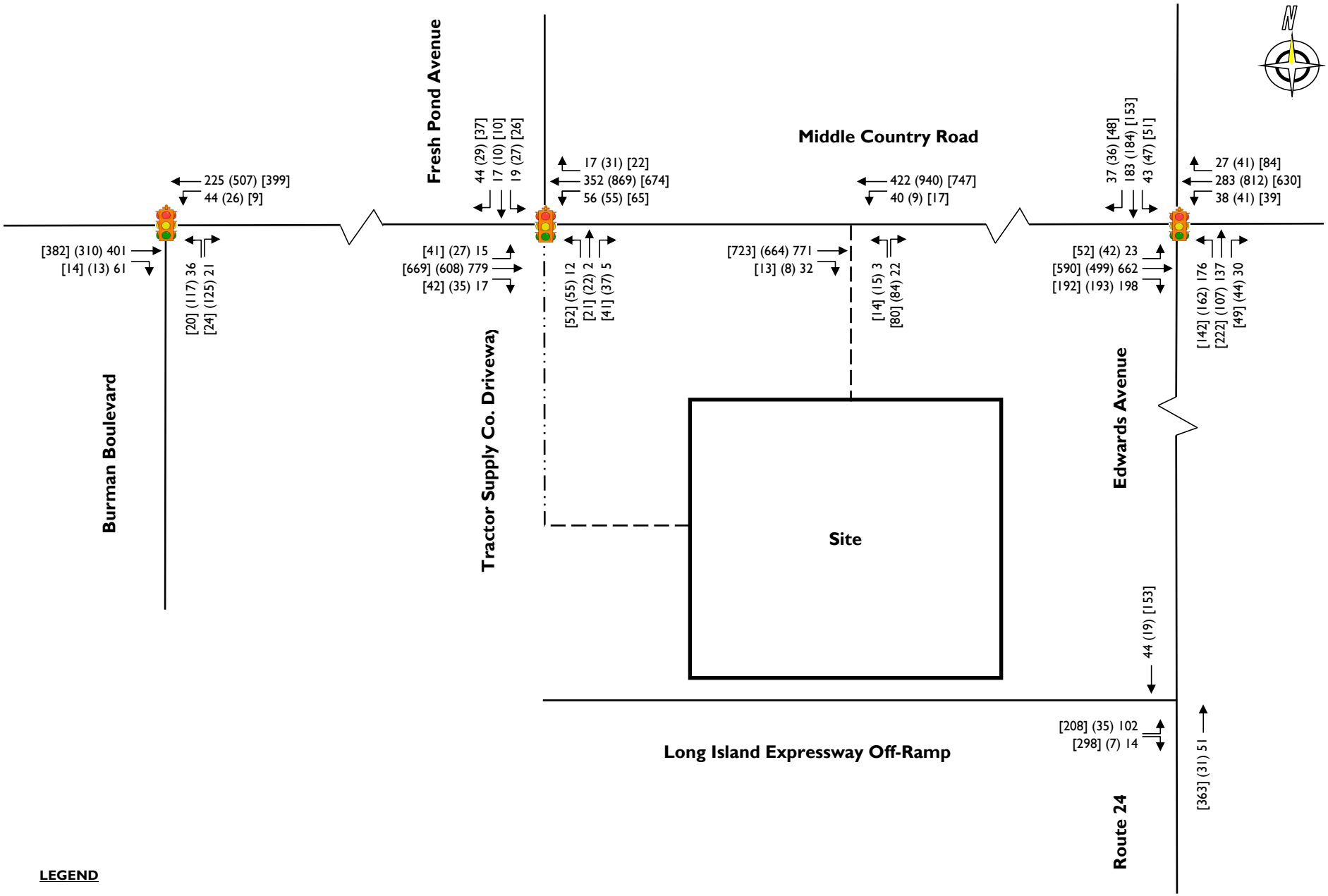
FIGURE 30
Phase 2A Site-Generated Passenger Vehicle Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

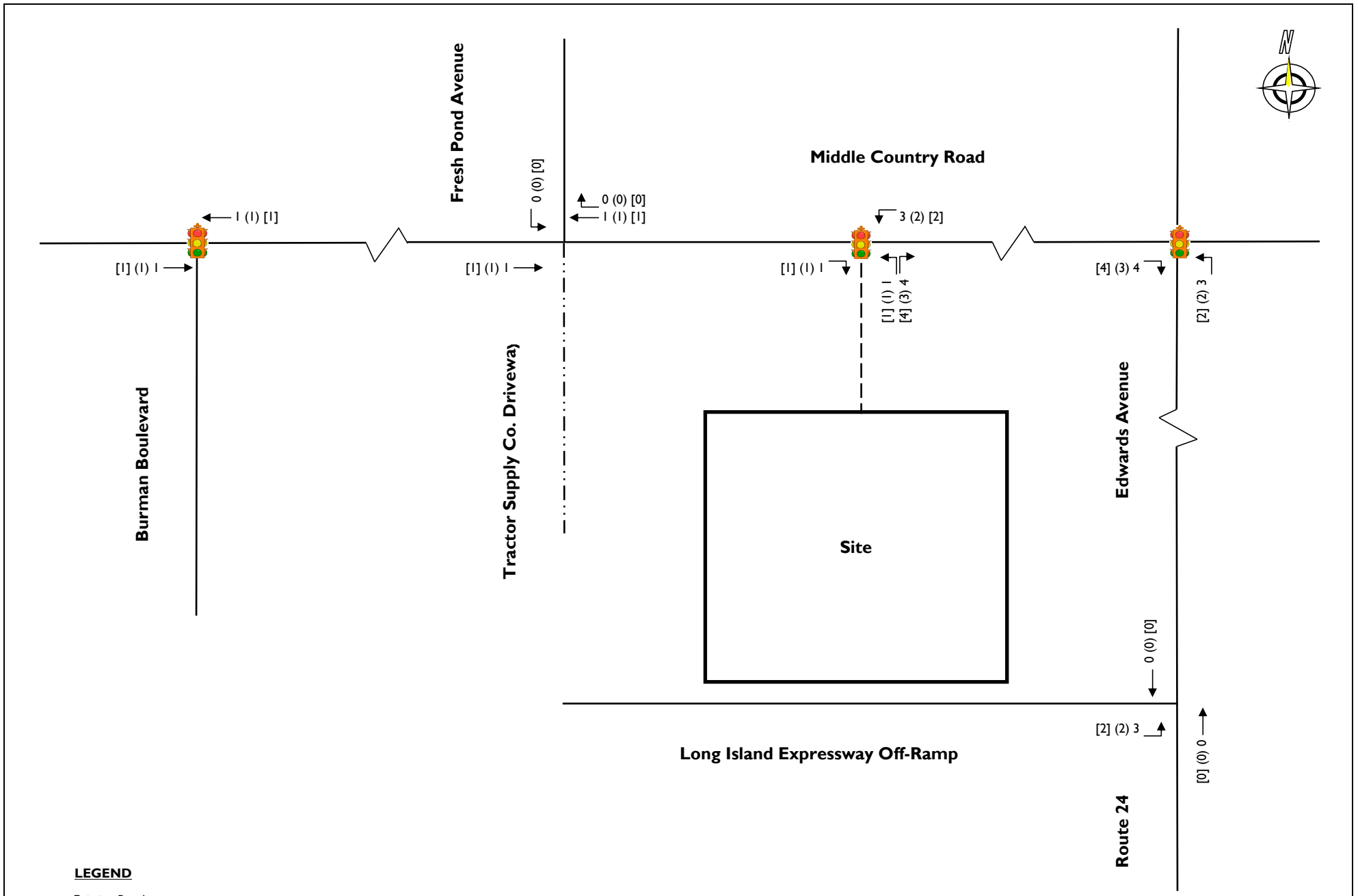
FIGURE 31
Phase 2A Total Site-Generated Traffic Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

FIGURE 32
2025 Phase 2A Build
Traffic Volumes



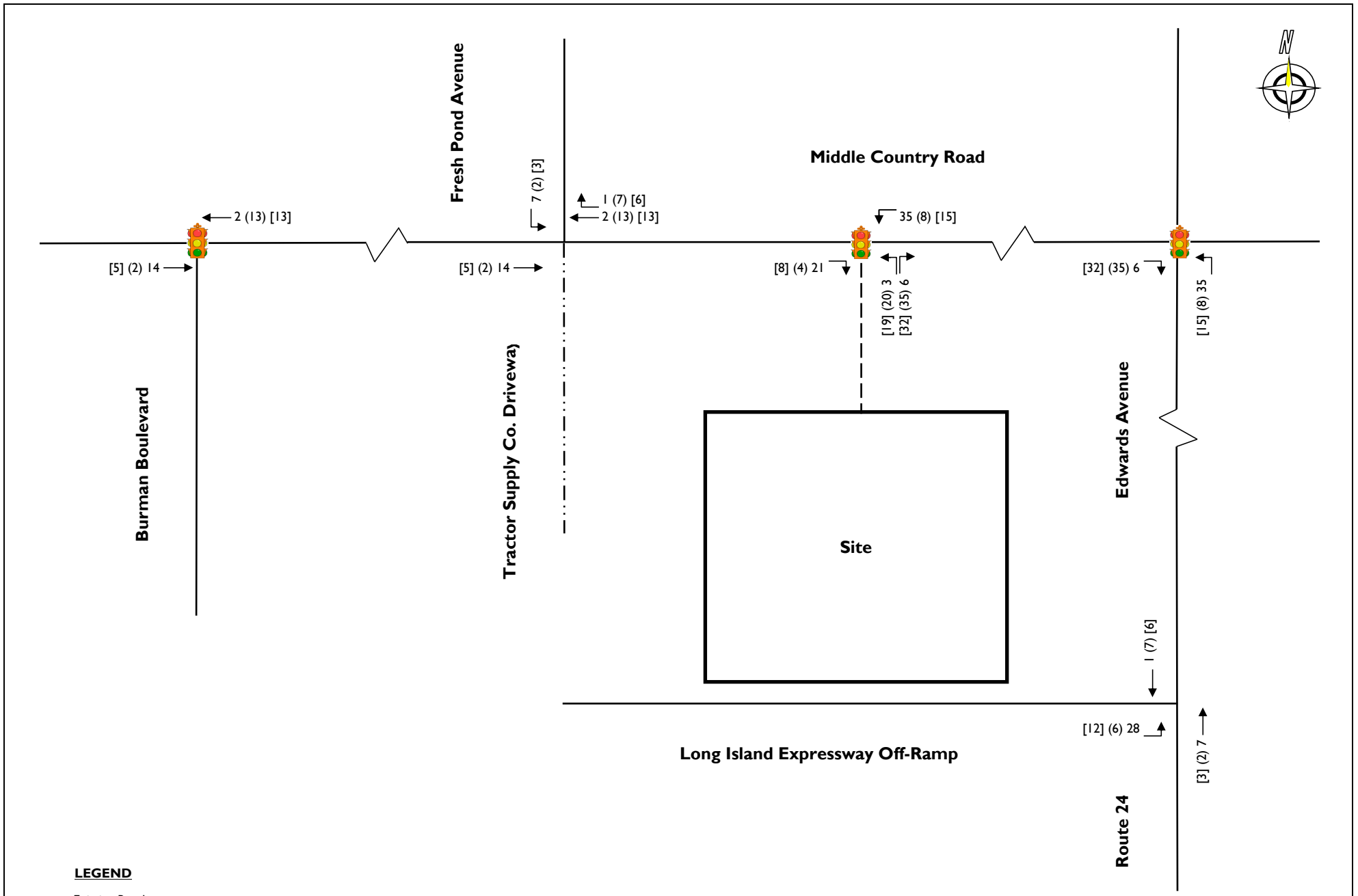
LEGEND

- Existing Roadway
- Proposed Driveway
- Existing Private Driveway
- AM (PM) [SAT] Peak Hour Volumes
- Signalized Intersection

STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

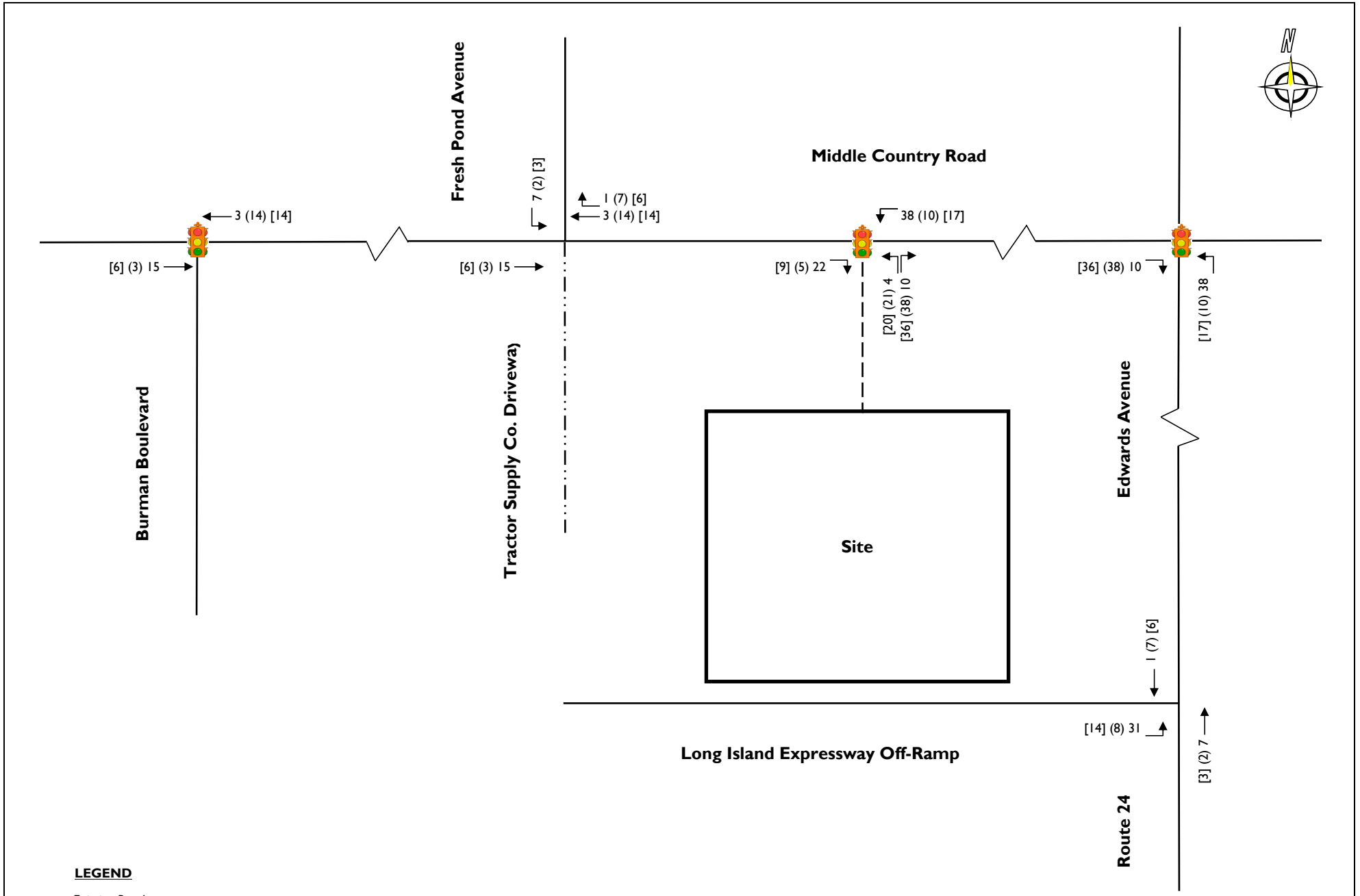
FIGURE 33
Phase 2B Site-Generated Truck Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

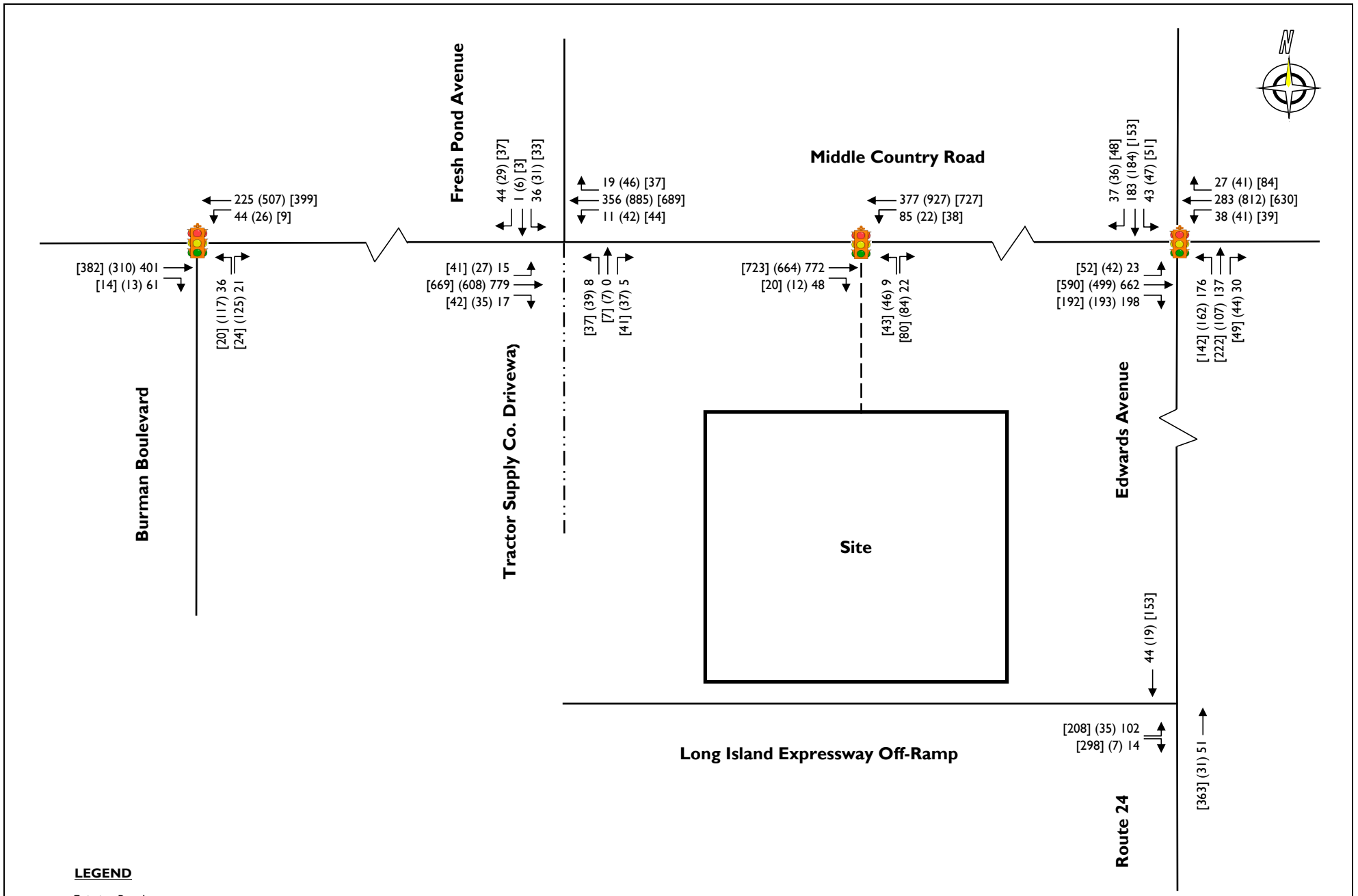
FIGURE 34
Phase 2B Site-Generated Passenger Vehicle Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

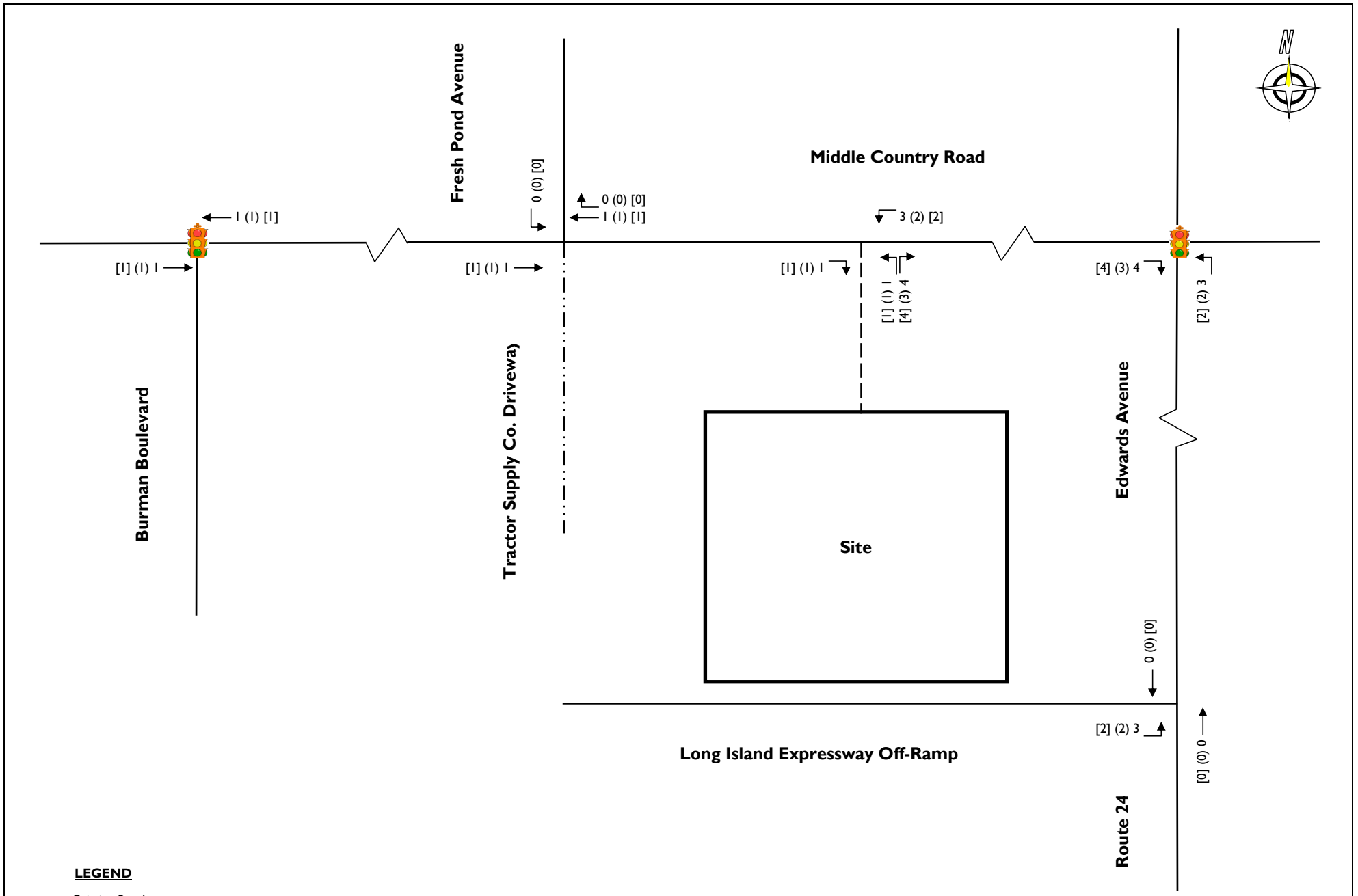
FIGURE 35
Phase 2B Total Site-Generated Traffic Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

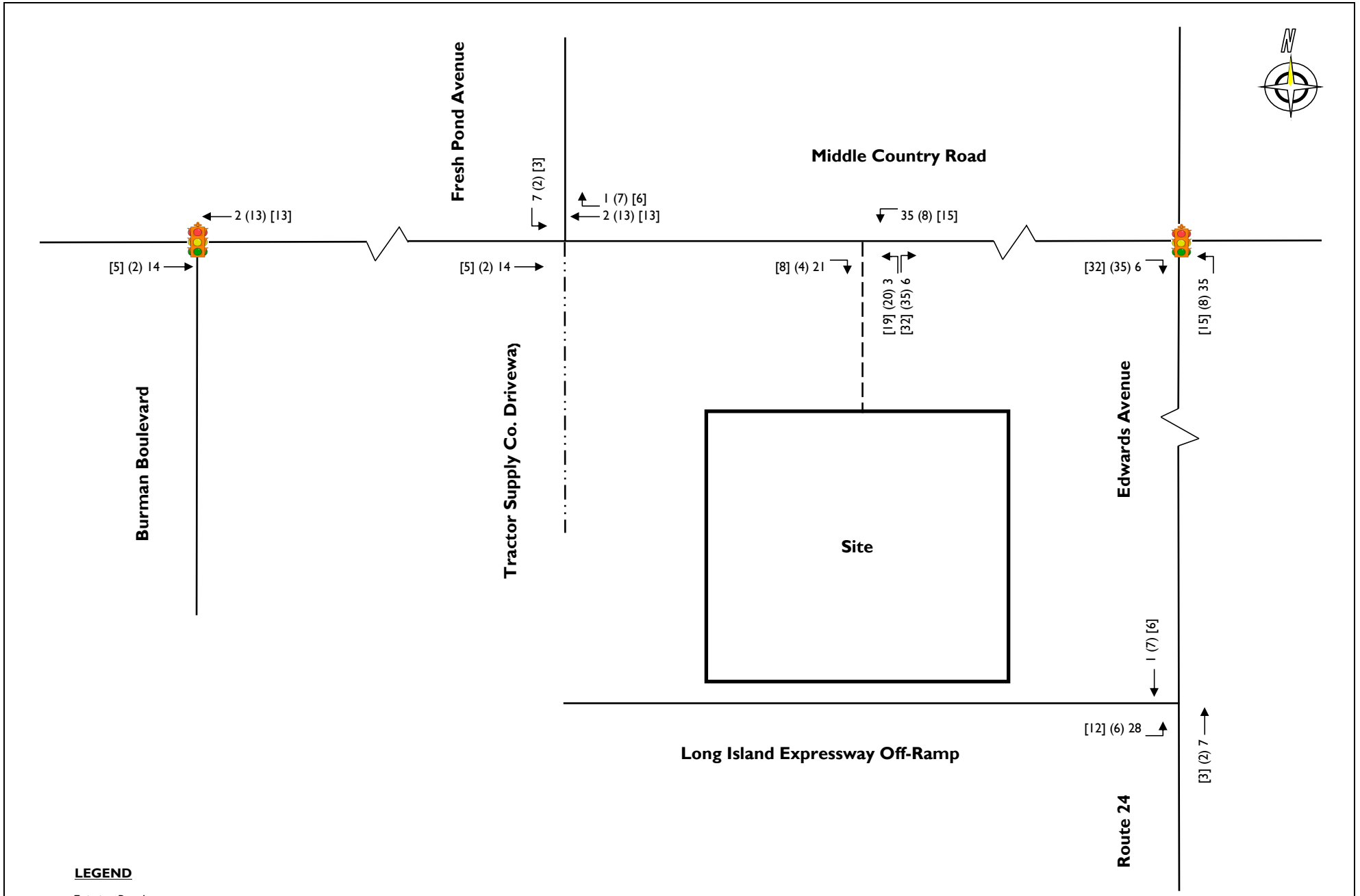
FIGURE 36
2025 Phase 2B Build
Traffic Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

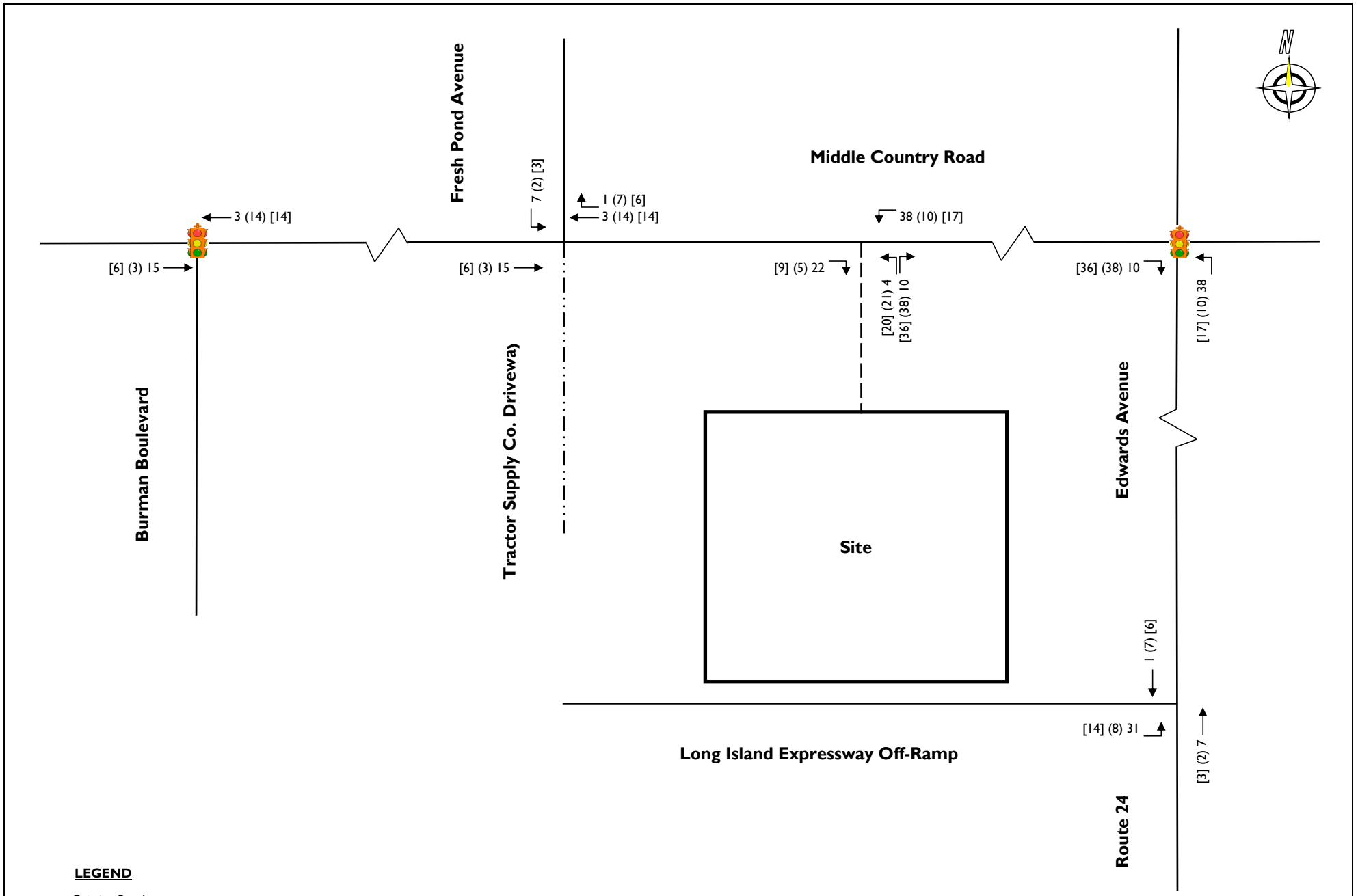
FIGURE 37
Phase 2C Site-Generated Truck Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

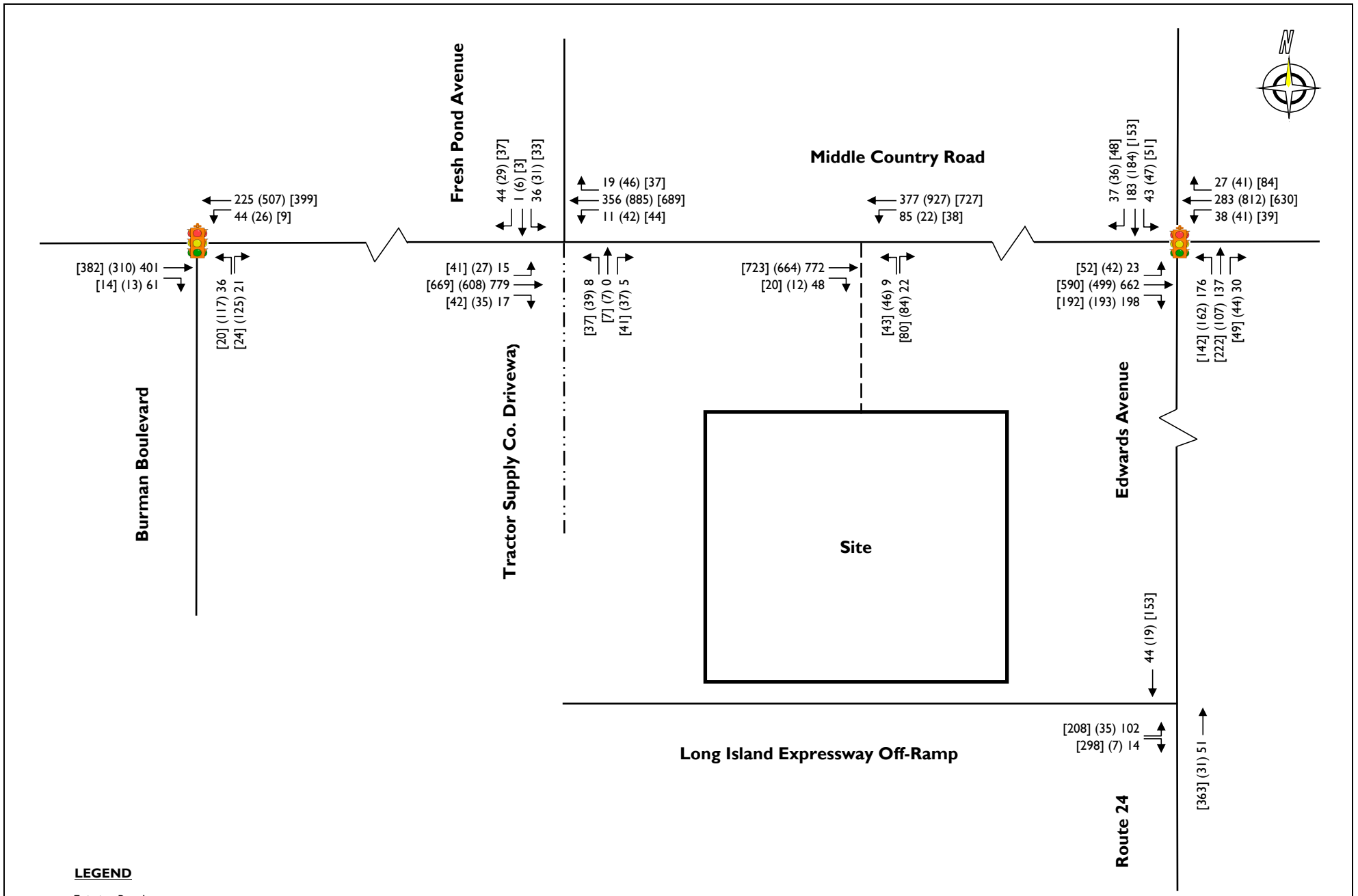
FIGURE 38
Phase 2C Site-Generated Passenger Vehicle Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

FIGURE 39
Phase 2C Total Site-Generated Traffic Volumes



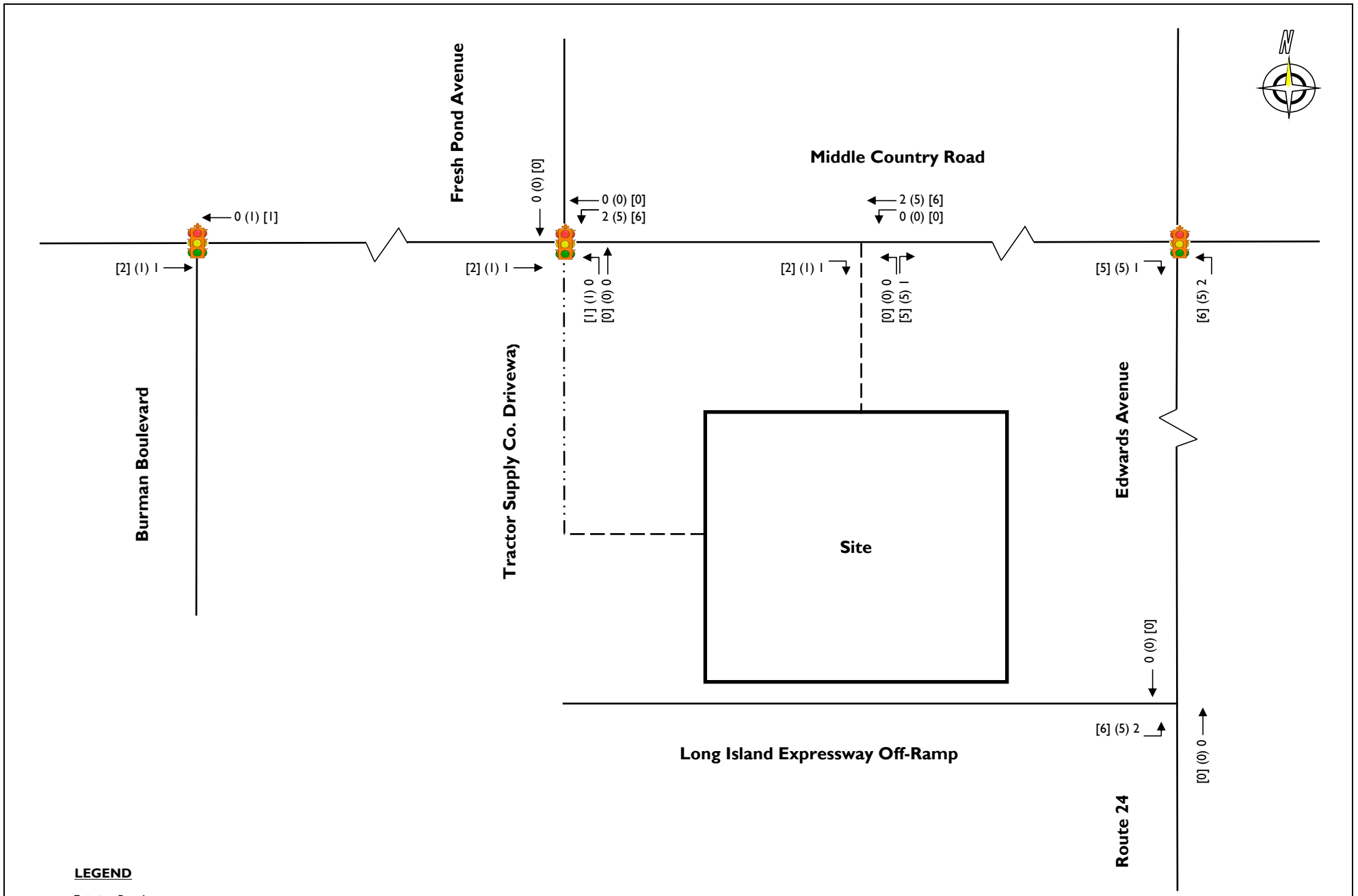
LEGEND

- Existing Roadway
- Proposed Driveway
- Existing Private Driveway
- AM (PM) [SAT] Peak Hour Volumes
- Signalized Intersection

STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

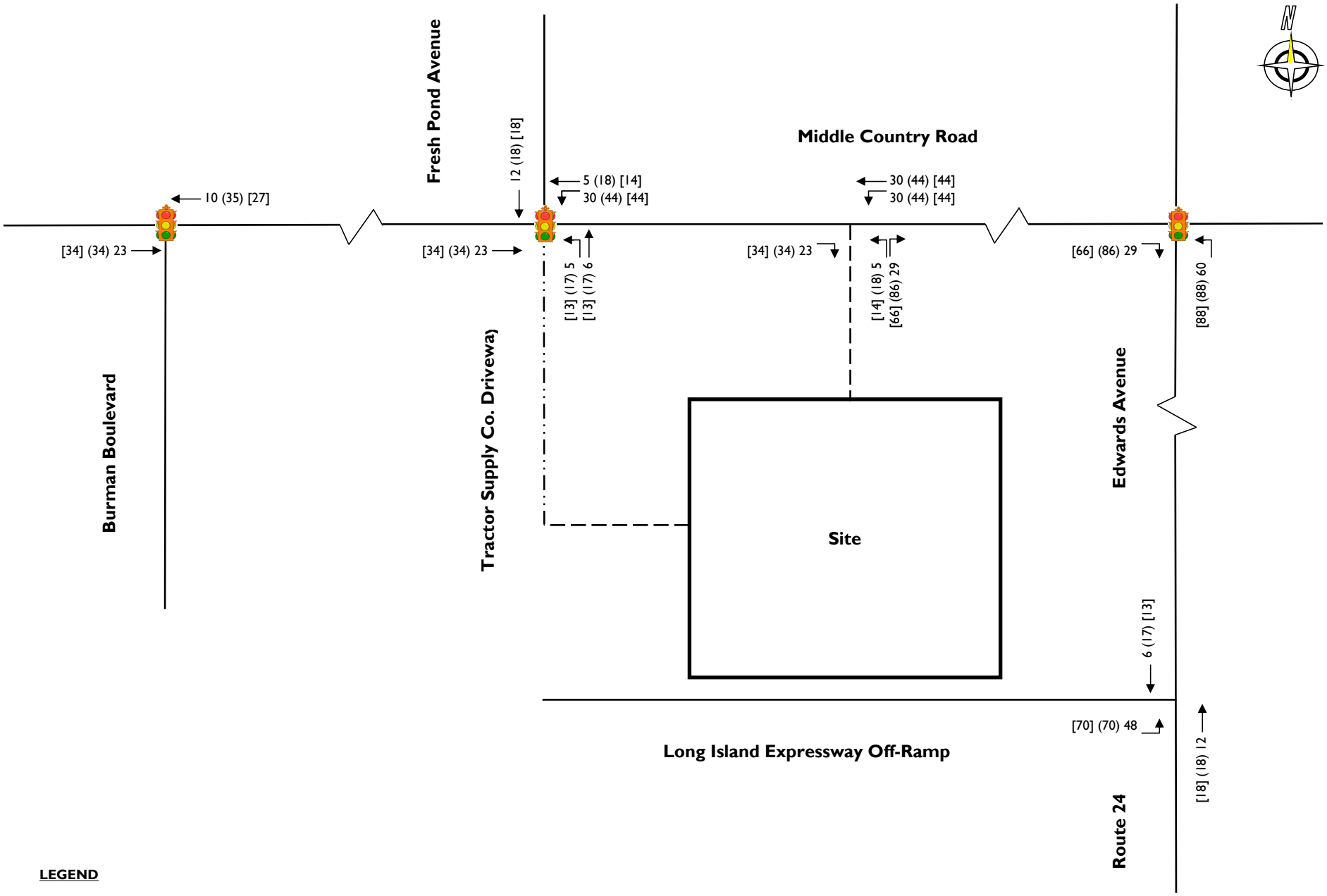
FIGURE 40
2025 Phase 2C Build
Traffic Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

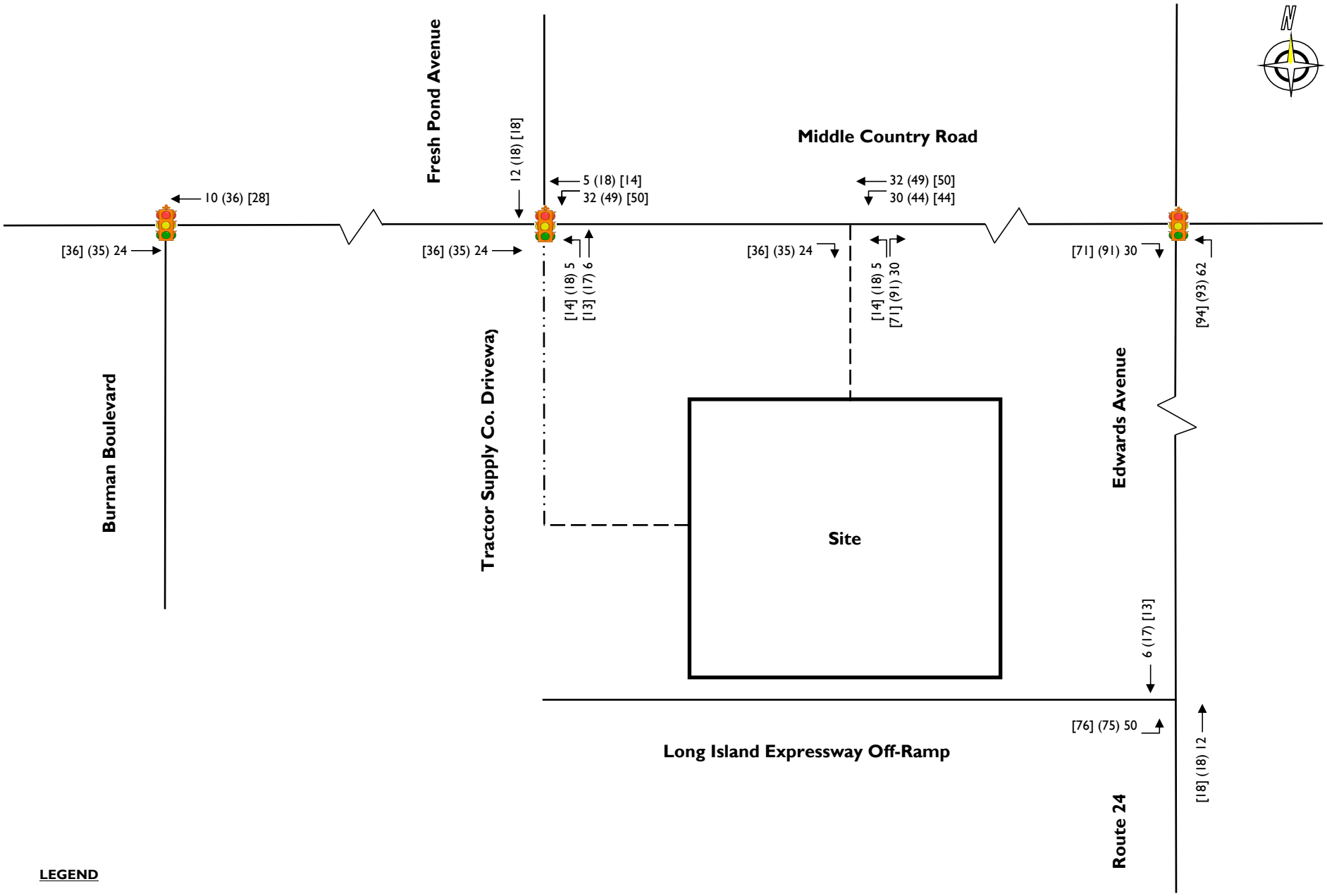
FIGURE 41
Phase 2D Site-Generated Truck Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

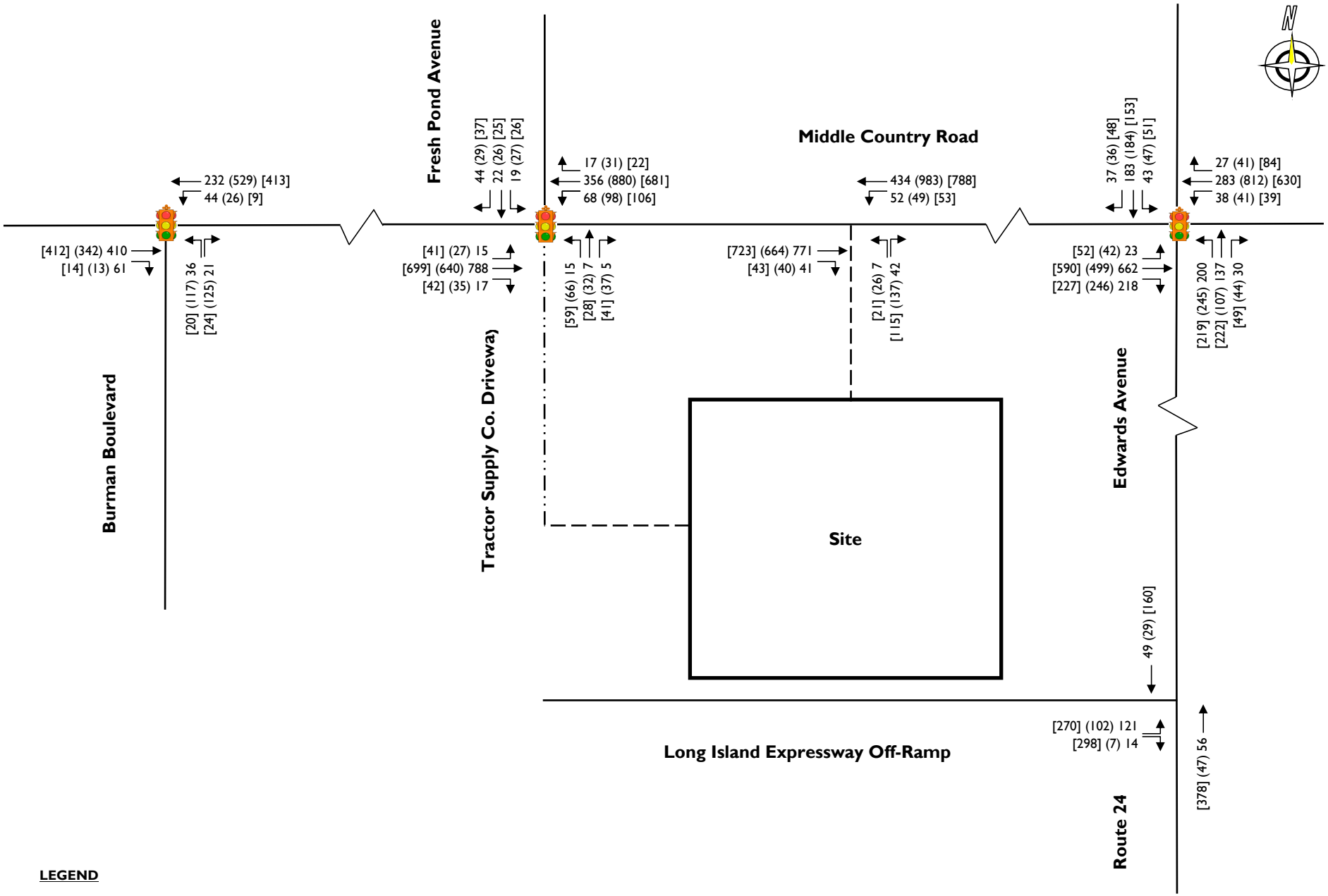
FIGURE 42
Phase 2D Site-Generated Passenger Vehicle Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

FIGURE 43
Phase 2D Total Site-Generated Traffic Volumes



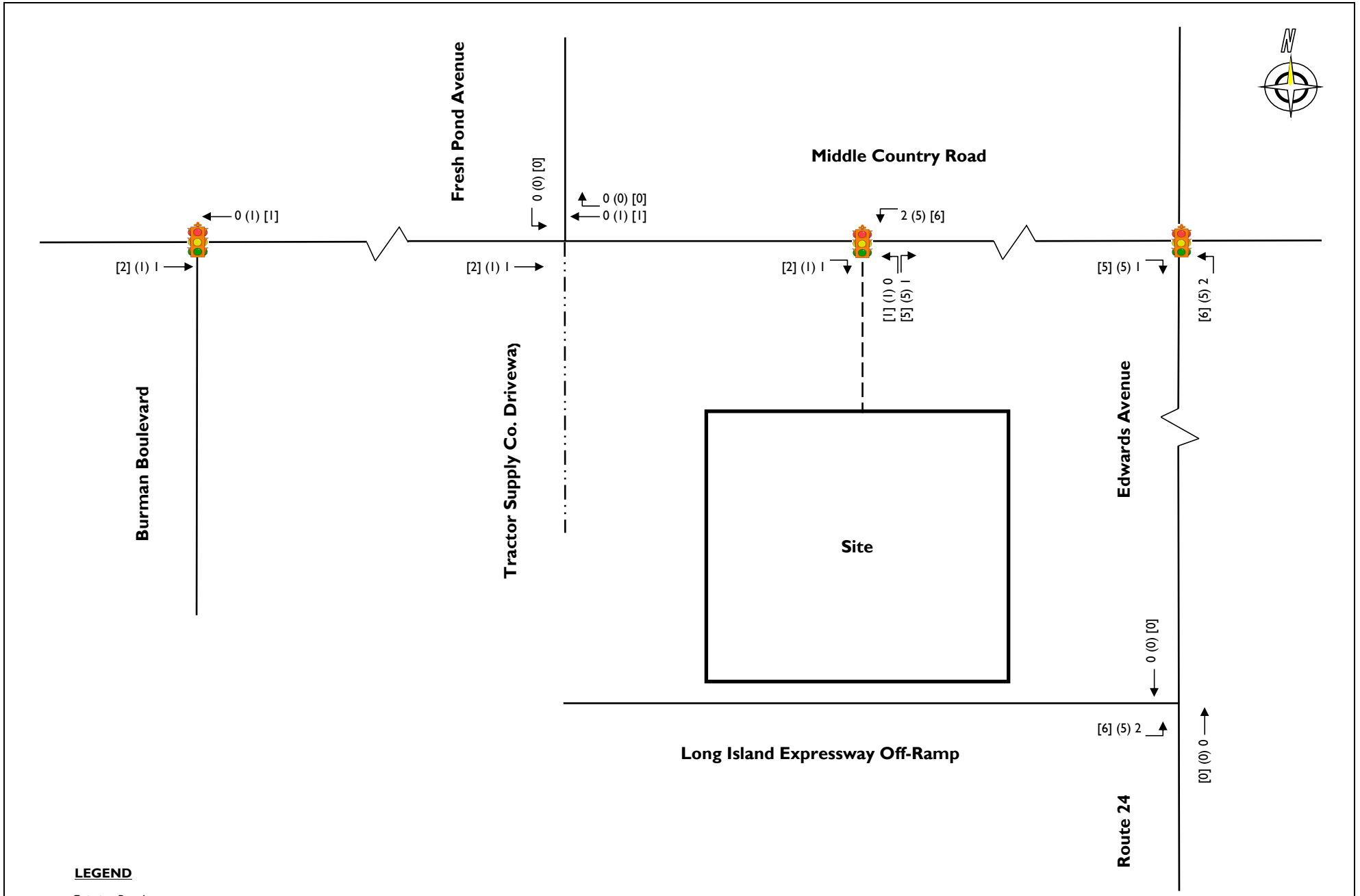
LEGEND

- Existing Roadway
- Proposed Driveway
- Existing Private Driveway
- AM (PM) [SAT] Peak Hour Volumes
- Signalized Intersection

STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

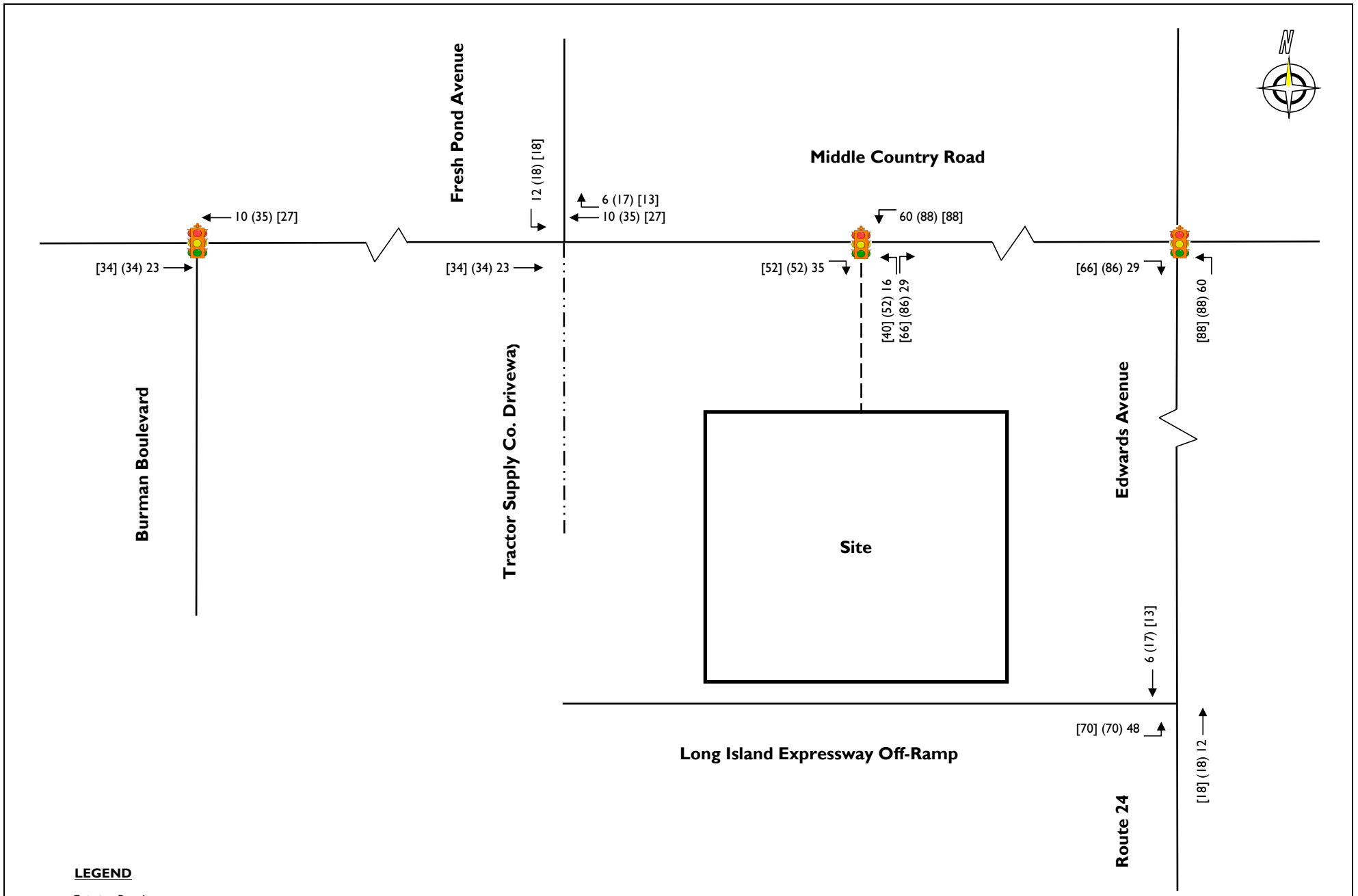
FIGURE 44
2025 Phase 2D Build
Traffic Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

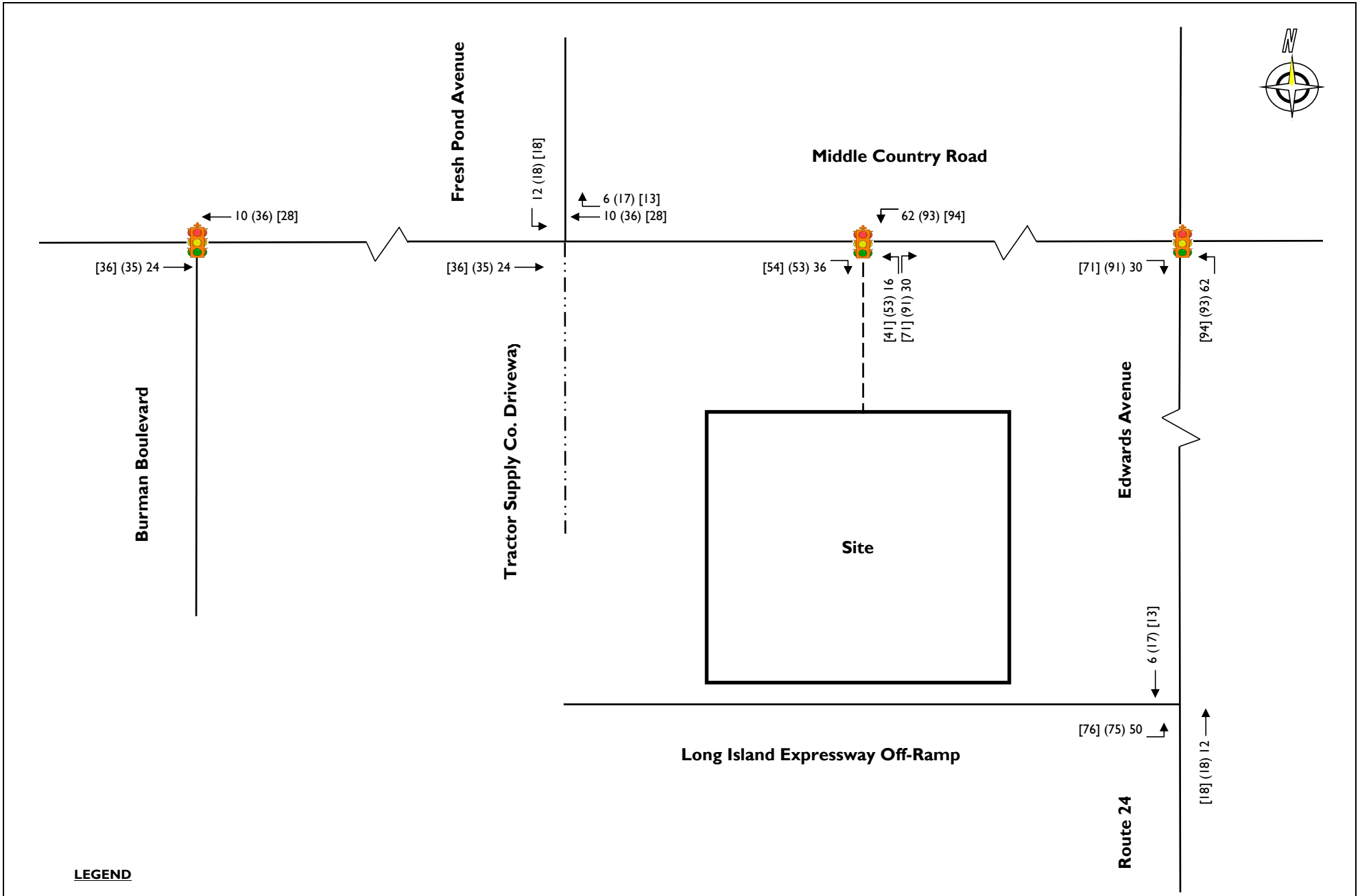
FIGURE 45
Phase 2E Site-Generated Truck Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

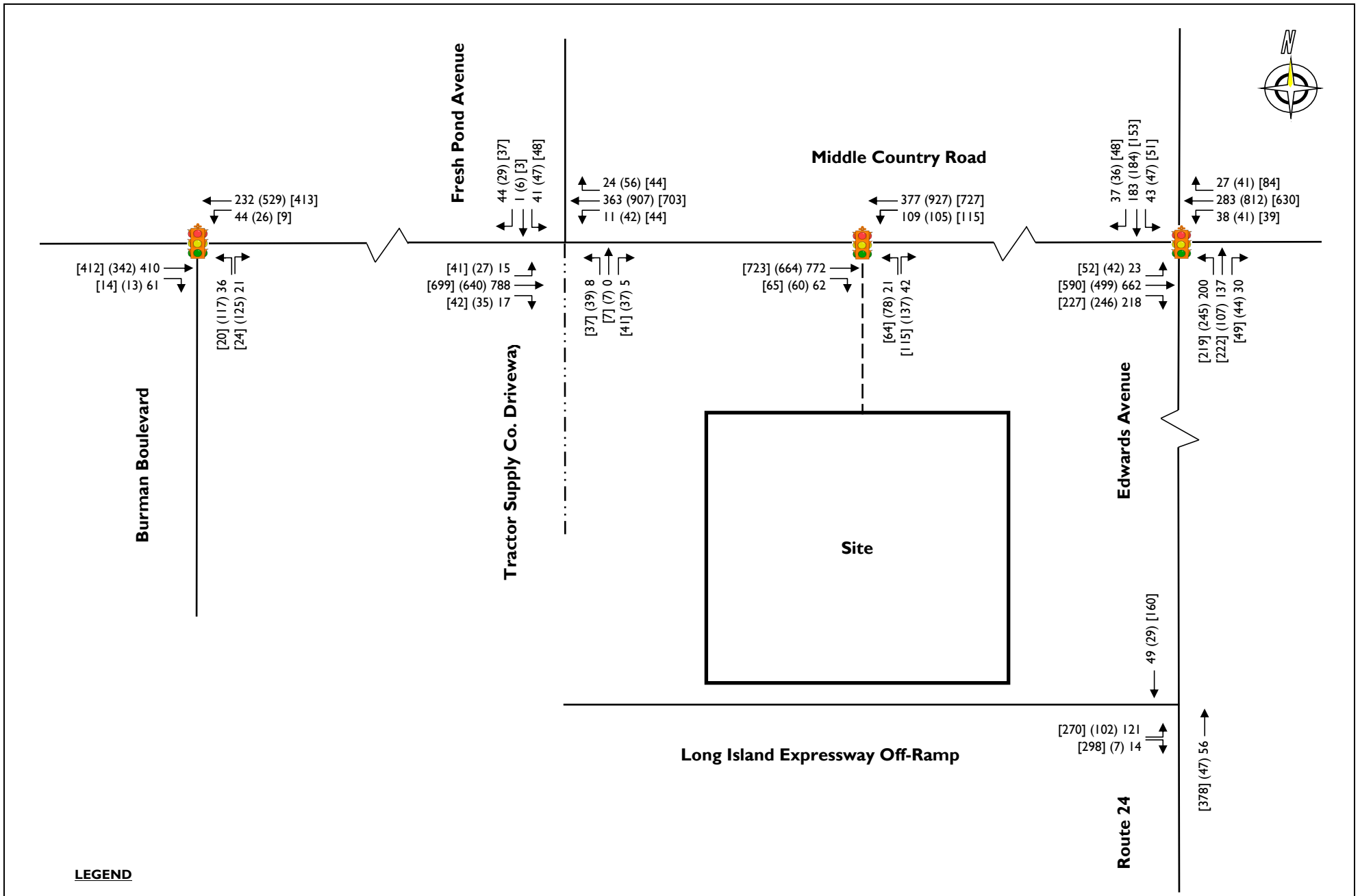
FIGURE 46
Phase 2E Site-Generated Passenger Vehicle Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

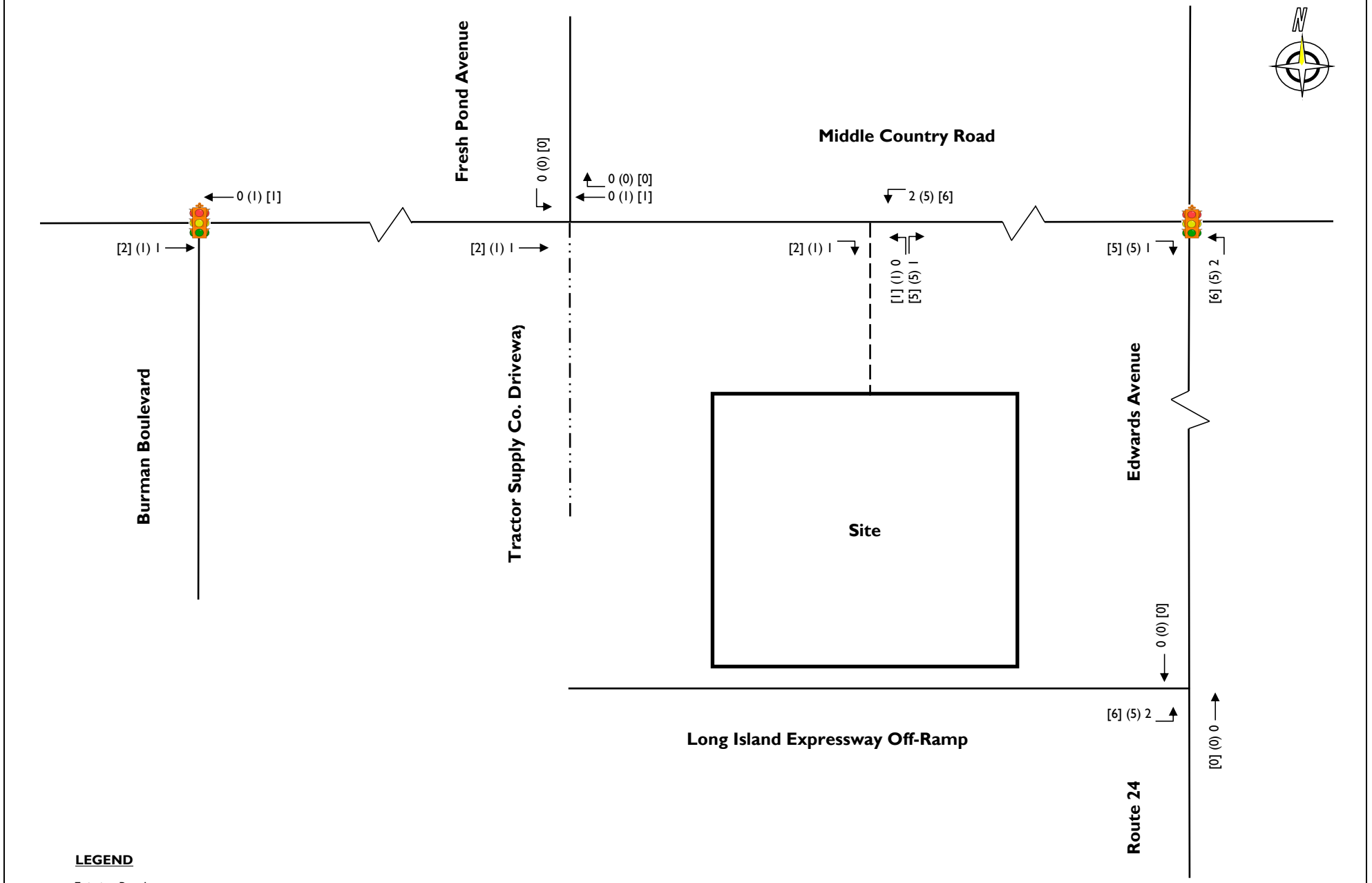
FIGURE 47
Phase 2E Total Site-Generated Traffic Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

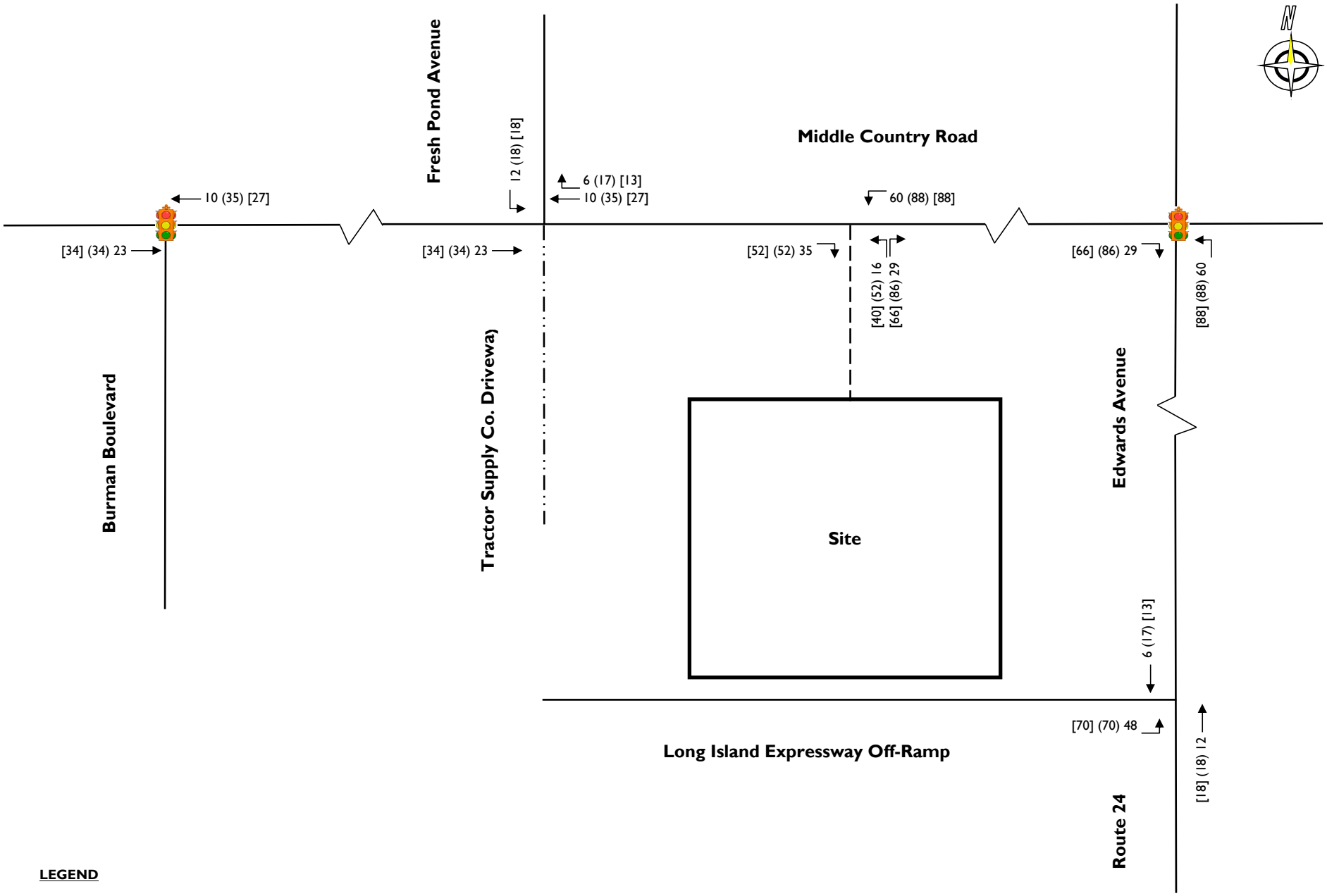
FIGURE 48
2025 Phase 2E Build
Traffic Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

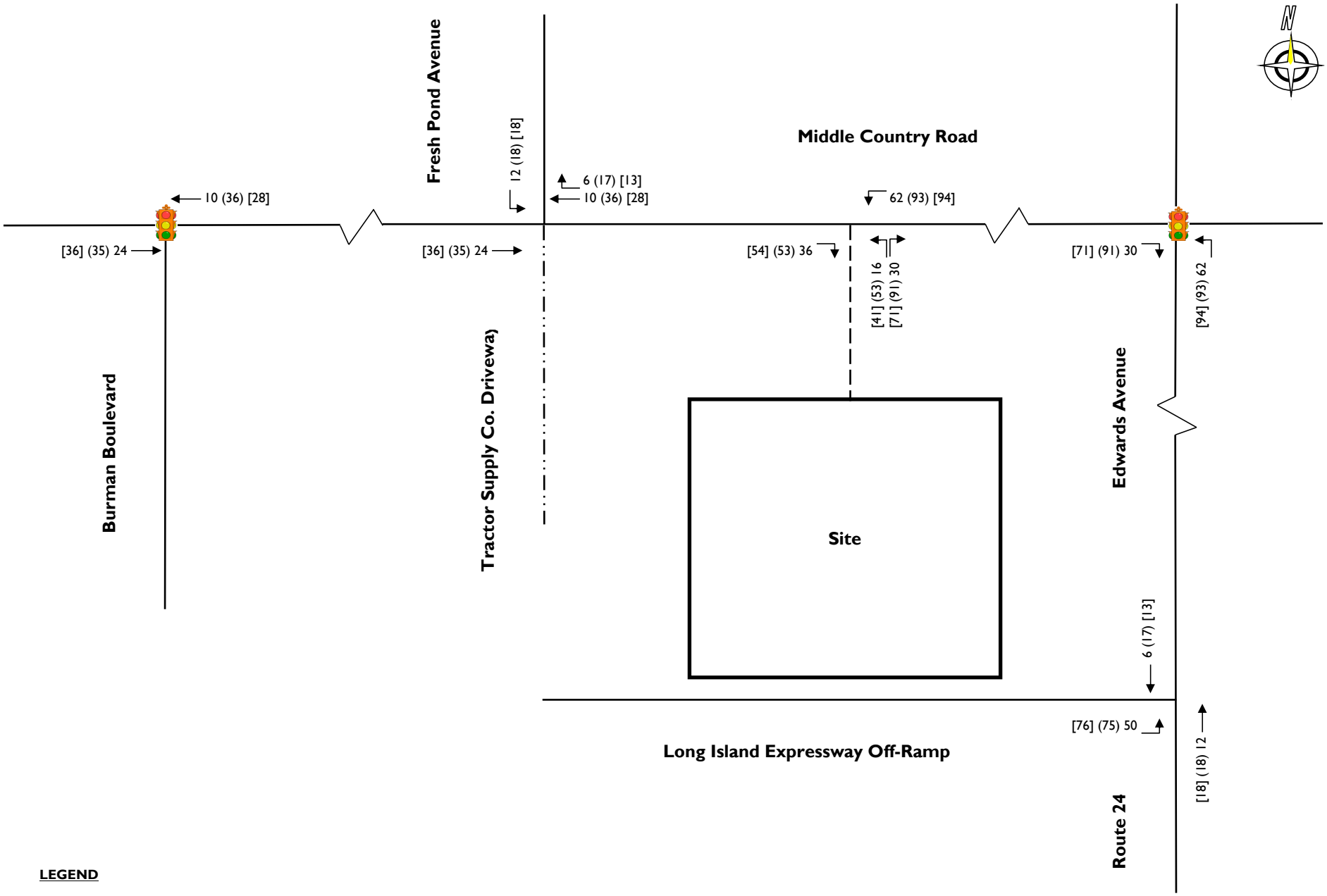
FIGURE 49
Phase 2F Site-Generated Truck Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

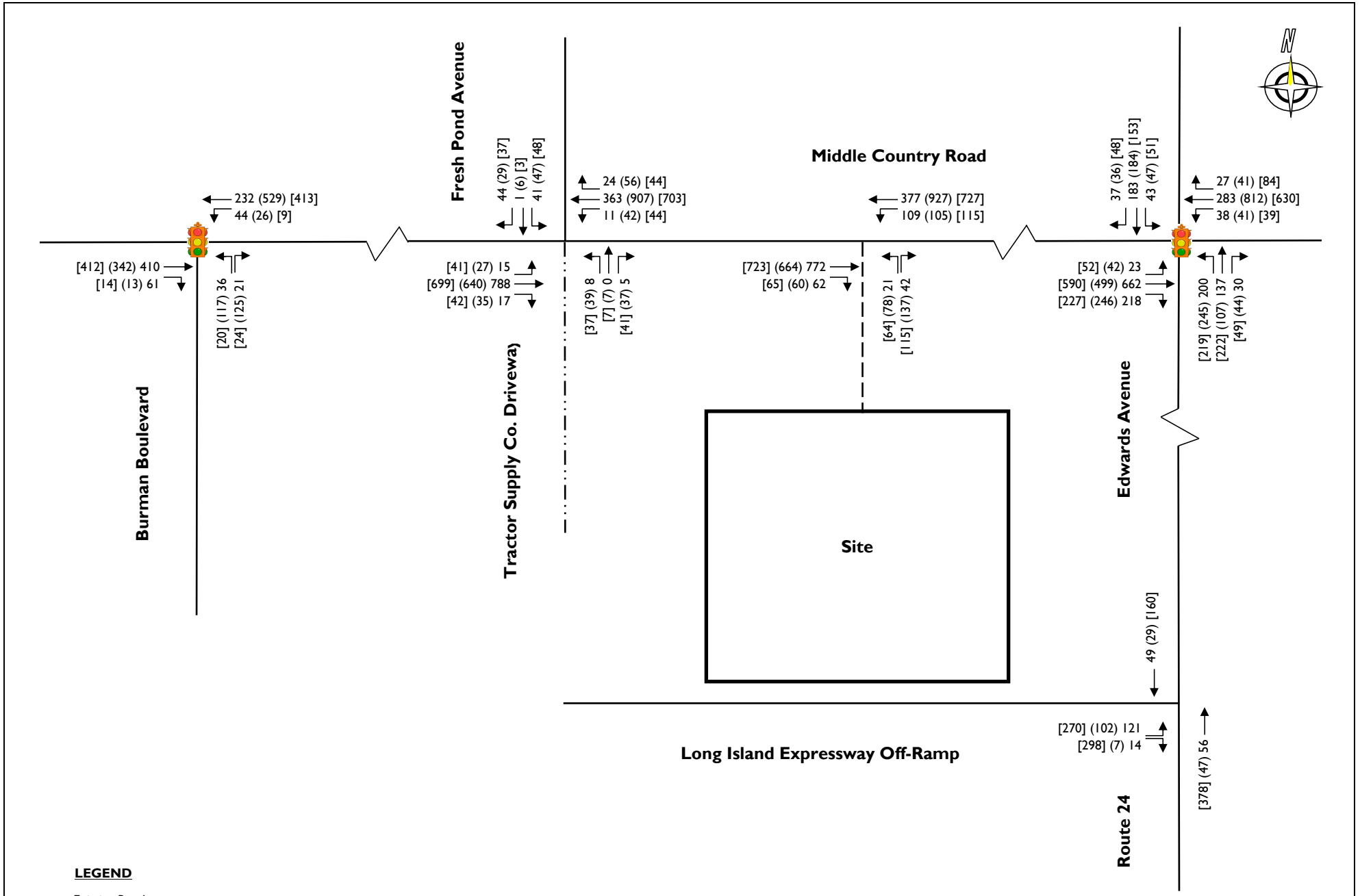
FIGURE 50
Phase 2F Site-Generated Passenger Vehicle Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

FIGURE 51
Phase 2F Total Site-Generated Traffic Volumes



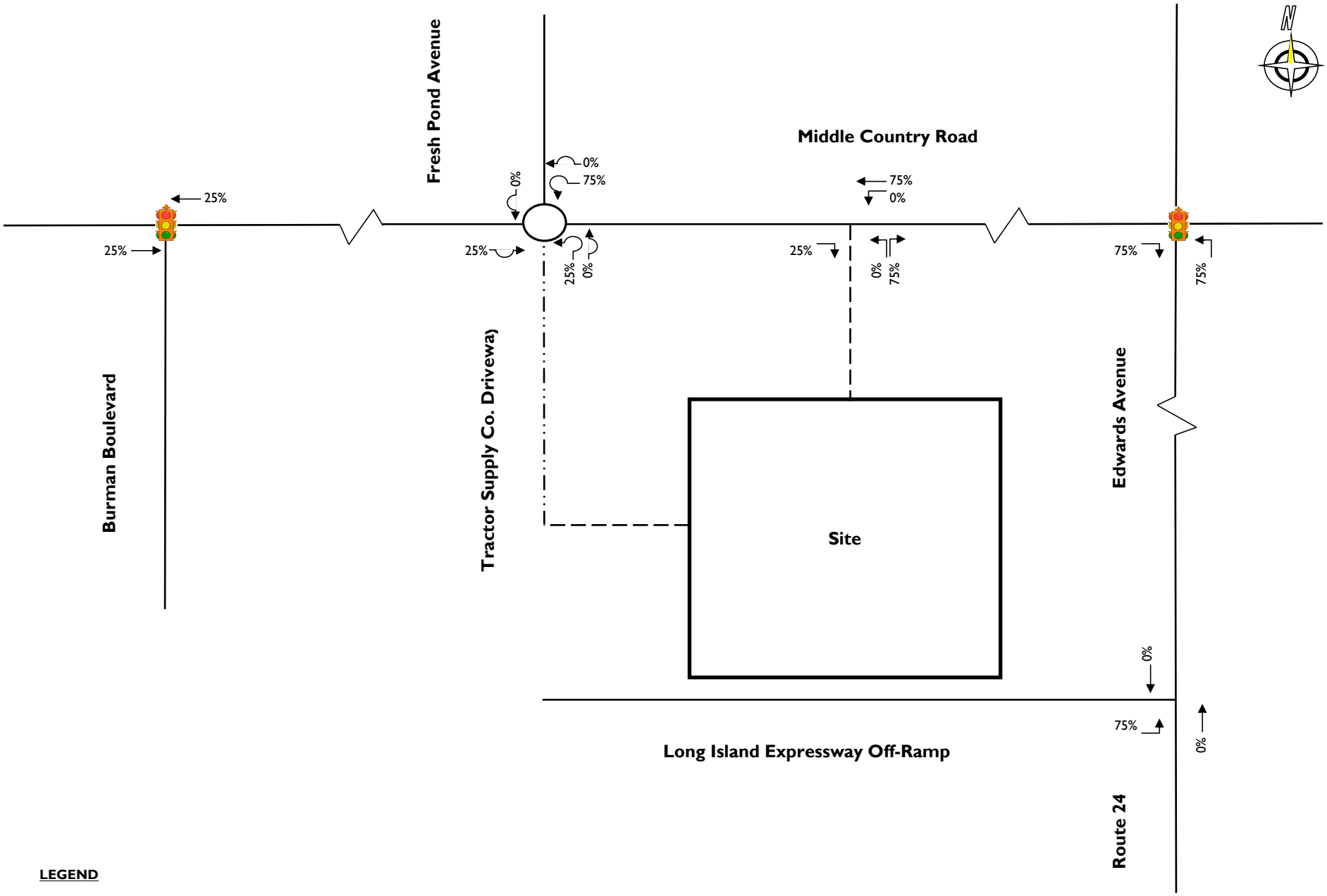
LEGEND

- Existing Roadway
- Proposed Driveway
- Existing Private Driveway
- AM (PM) [SAT] Peak Hour Volumes
- Signalized Intersection

STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

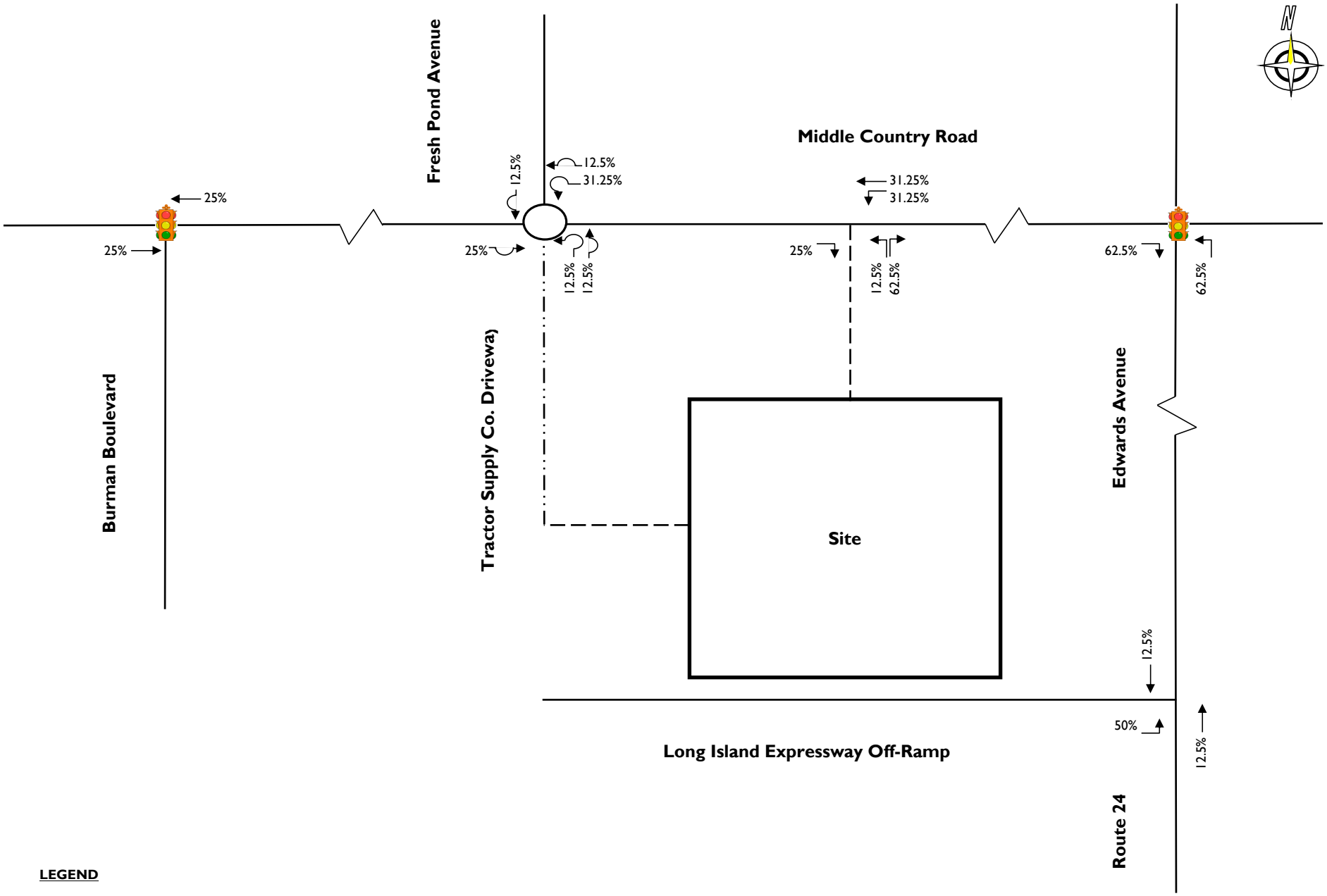
FIGURE 52
2025 Phase 2F Build
Traffic Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

FIGURE 53
Truck Routing for Condition G



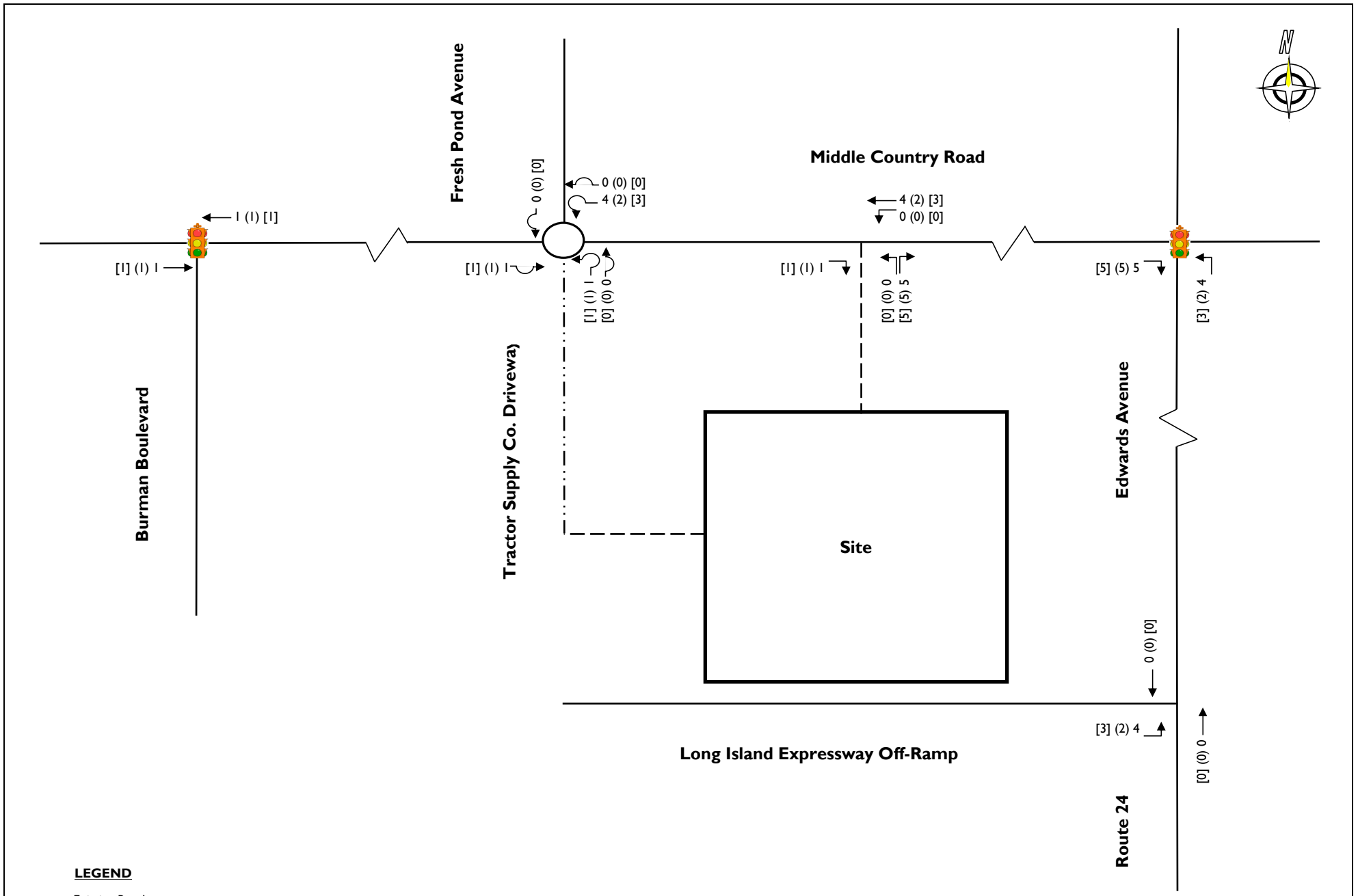
LEGEND

- Existing Roadway
- Proposed Driveway
- Existing Private Driveway
- Peak Hour Volumes
- Signalized Intersection

STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

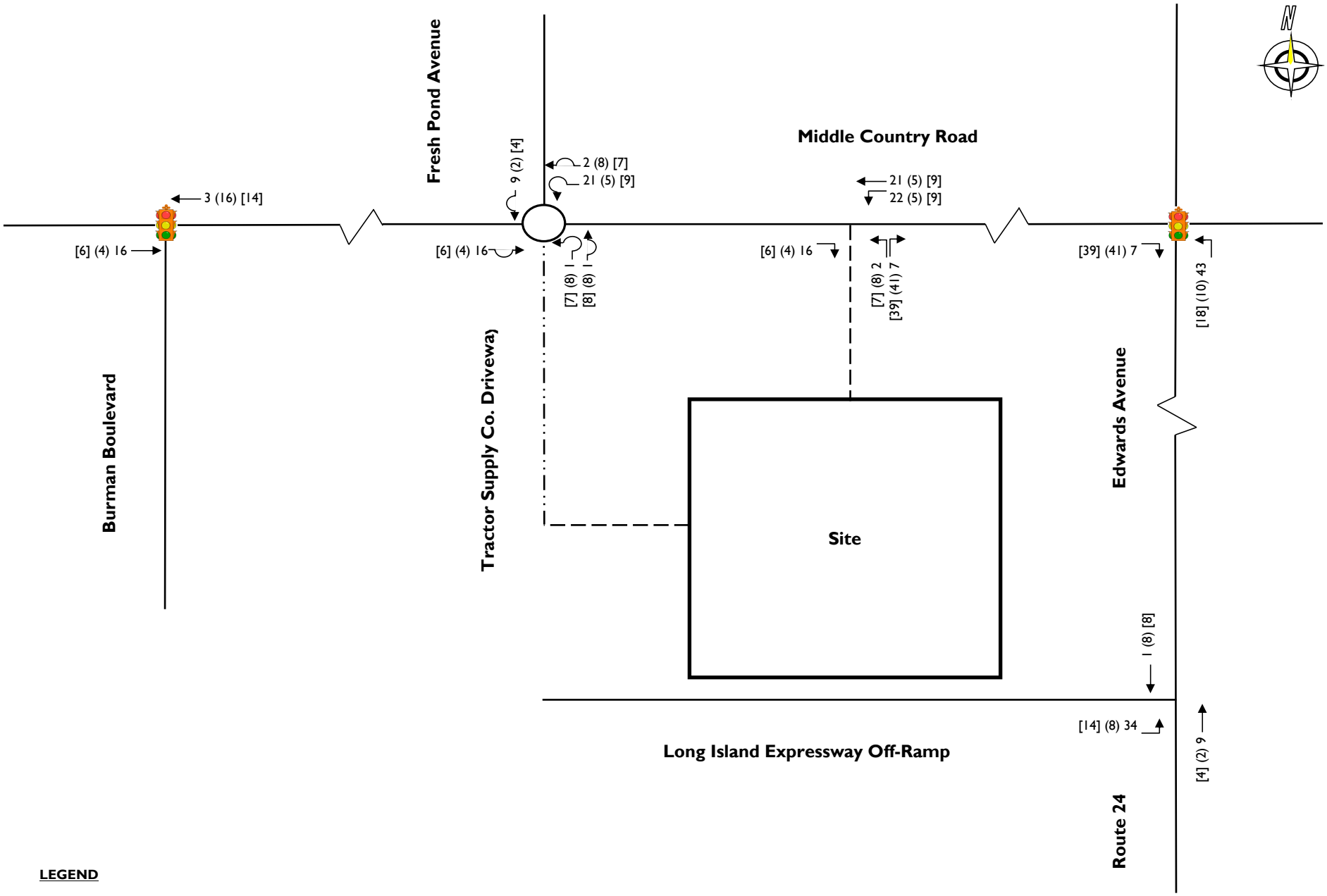
FIGURE 54
Passenger Vehicle Routing for Condition G



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

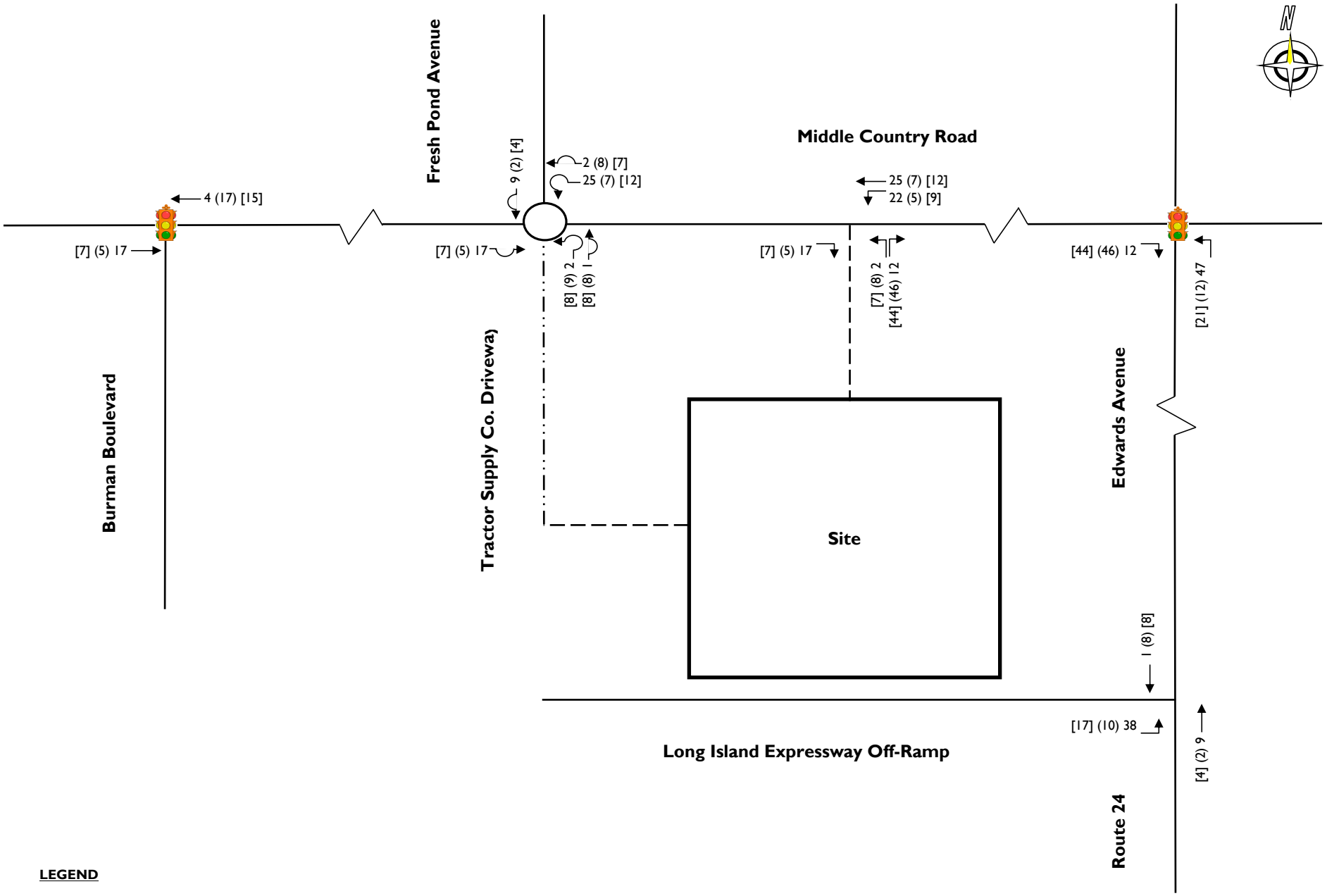
FIGURE 55
Phase 1G Site-Generated Truck Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

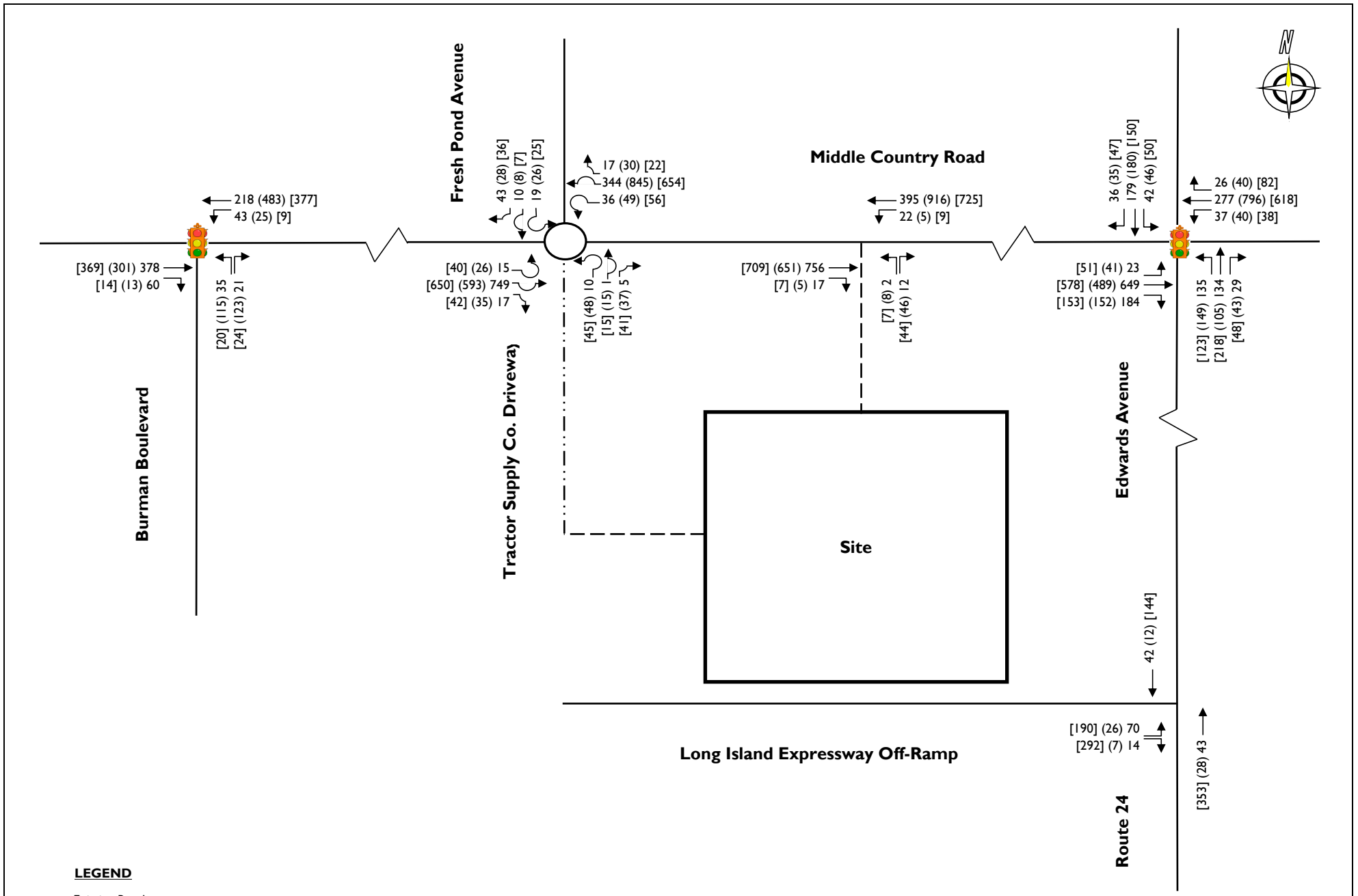
FIGURE 56
Phase 1G Site-Generated Passenger Vehicle Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

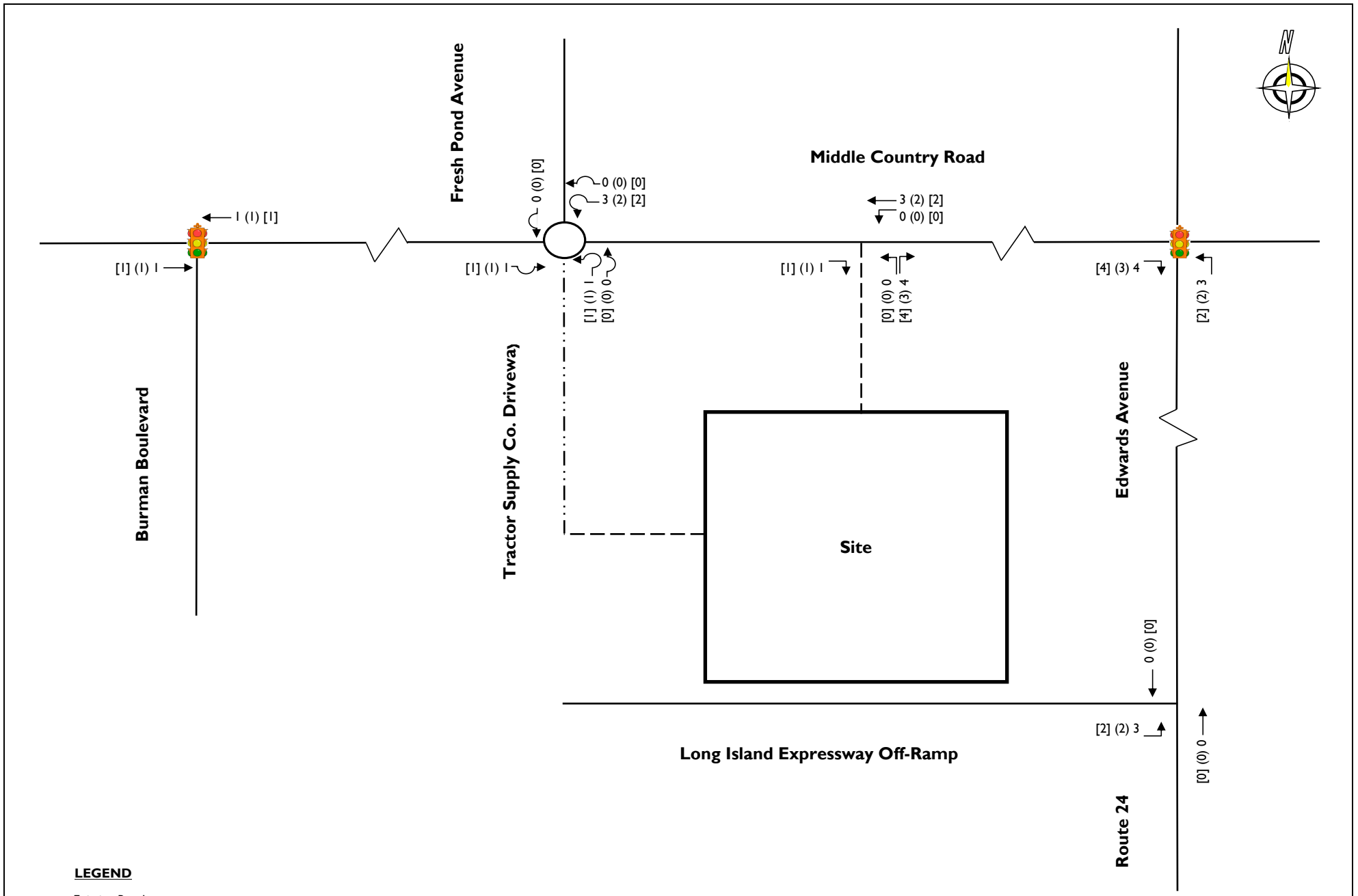
FIGURE 57
Phase 1G Total Site-Generated Traffic Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

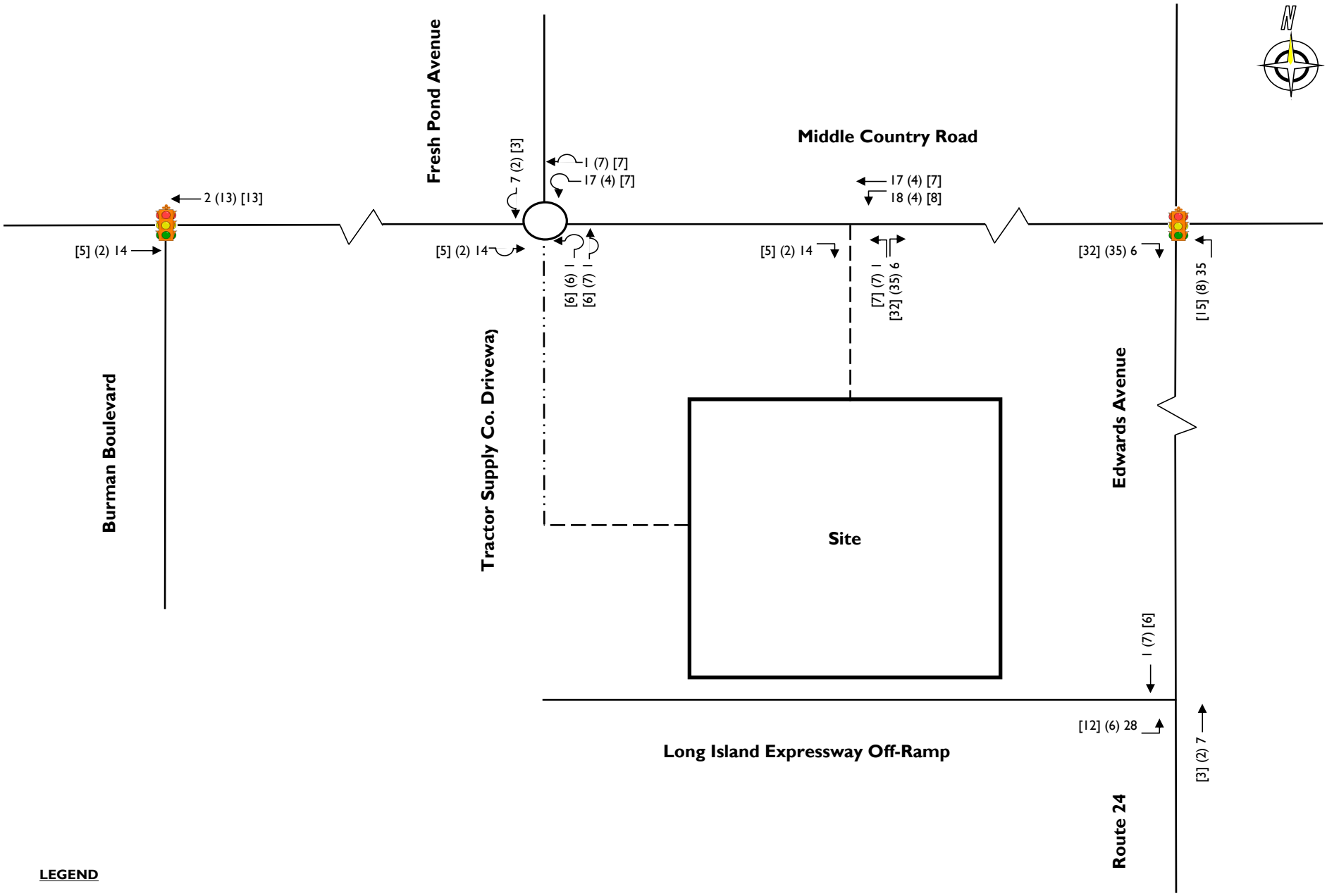
FIGURE 58
2023 Phase 1G Build
Traffic Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

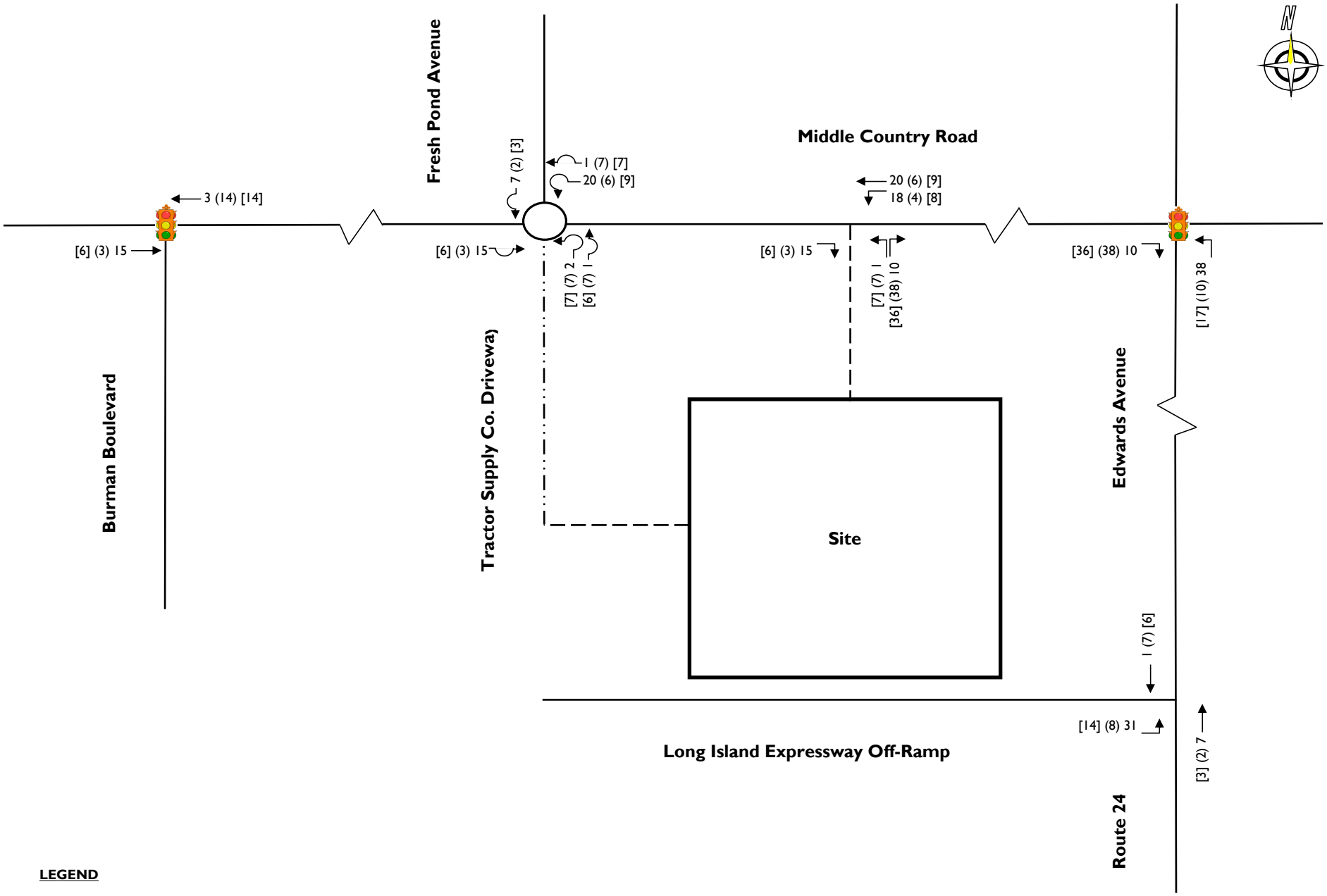
FIGURE 59
Phase 2G Site-Generated Truck Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

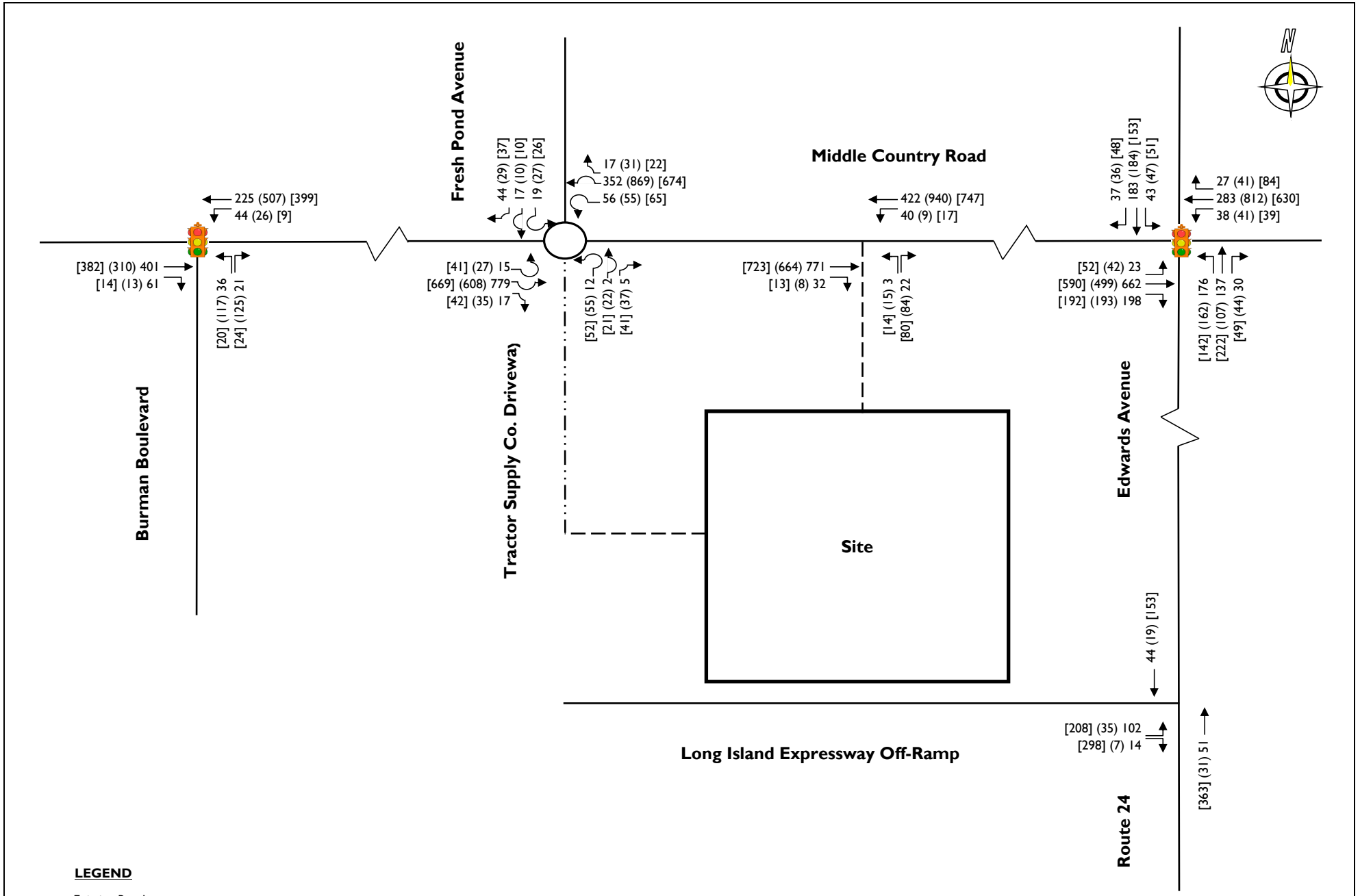
FIGURE 60
Phase 2G Site-Generated Passenger Vehicle Volumes



STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

FIGURE 61
Phase 2G Total Site-Generated Traffic Volumes



LEGEND

- Existing Roadway
- Proposed Driveway
- Existing Private Driveway
- AM (PM) [SAT] Peak Hour Volumes
- Signalized Intersection

STONEFIELD

Proposed Industrial Park
Middle Country Road (NYS Route 25)
Hamlet of Calverton, Town of Riverhead, New York
Traffic Impact Study

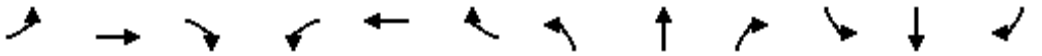
FIGURE 62
2025 Phase 2G Build
Traffic Volumes

HIGHWAY CAPACITY ANALYSIS DETAIL SHEETS

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	342	57	40	203	33	19
Future Volume (veh/h)	342	57	40	203	33	19
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1722	1678	1767	1278	1248
Adj Flow Rate, veh/h	384	64	45	228	37	21
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	12	15	9	42	44
Cap, veh/h	1360	1105	675	1337	89	77
Arrive On Green	0.76	0.76	0.76	0.76	0.07	0.07
Sat Flow, veh/h	1796	1459	845	1767	1217	1058
Grp Volume(v), veh/h	384	64	45	228	37	21
Grp Sat Flow(s),veh/h/ln	1796	1459	845	1767	1217	1058
Q Serve(g_s), s	5.2	0.9	1.4	2.9	2.3	1.5
Cycle Q Clear(g_c), s	5.2	0.9	6.6	2.9	2.3	1.5
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1360	1105	675	1337	89	77
V/C Ratio(X)	0.28	0.06	0.07	0.17	0.42	0.27
Avail Cap(c_a), veh/h	1360	1105	675	1337	537	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.0	2.4	4.0	2.7	35.1	34.8
Incr Delay (d2), s/veh	0.5	0.1	0.2	0.3	3.1	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	0.2	0.3	0.9	1.3	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.5	2.5	4.2	3.0	38.3	36.7
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	448			273	58	
Approach Delay, s/veh	3.4			3.2	37.7	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		12.3		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		7.2		4.3		8.6
Green Ext Time (p_c), s		2.4		0.1		1.5

Intersection Summary	
HCM 6th Ctrl Delay	5.8
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	621	162	35	265	25	79	128	28	40	171	34
Future Volume (veh/h)	22	621	162	35	265	25	79	128	28	40	171	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1693	1693	1693	1678	1678	1678	1826	1826	1826
Adj Flow Rate, veh/h	25	714	186	40	305	29	91	147	32	46	197	39
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	7	7	7	14	14	14	15	15	15	5	5	5
Cap, veh/h	61	803	205	103	700	63	147	192	37	96	296	54
Arrive On Green	0.60	0.60	0.60	0.60	0.60	0.60	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	22	1349	345	87	1176	106	357	809	157	178	1247	229
Grp Volume(v), veh/h	925	0	0	374	0	0	270	0	0	282	0	0
Grp Sat Flow(s),veh/h/ln	1717	0	0	1368	0	0	1323	0	0	1653	0	0
Q Serve(g_s), s	12.8	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	36.6	0.0	0.0	9.1	0.0	0.0	15.3	0.0	0.0	12.0	0.0	0.0
Prop In Lane	0.03		0.20	0.11		0.08	0.34		0.12	0.16		0.14
Lane Grp Cap(c), veh/h	1069	0	0	865	0	0	377	0	0	447	0	0
V/C Ratio(X)	0.87	0.00	0.00	0.43	0.00	0.00	0.72	0.00	0.00	0.63	0.00	0.00
Avail Cap(c_a), veh/h	1589	0	0	1286	0	0	578	0	0	690	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.7	0.0	0.0	8.2	0.0	0.0	28.2	0.0	0.0	27.0	0.0	0.0
Incr Delay (d2), s/veh	3.5	0.0	0.0	0.3	0.0	0.0	2.6	0.0	0.0	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	16.3	0.0	0.0	4.4	0.0	0.0	8.2	0.0	0.0	8.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.2	0.0	0.0	8.6	0.0	0.0	30.7	0.0	0.0	28.4	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C	A	A	C	A	A
Approach Vol, veh/h		925			374			270			282	
Approach Delay, s/veh		17.2			8.6			30.7			28.4	
Approach LOS		B			A			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		53.2		24.5		53.2		24.5				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		38.6		17.3		11.1		14.0				
Green Ext Time (p_c), s		7.7		1.2		2.6		1.3				

Intersection Summary												
HCM 6th Ctrl Delay			19.2									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	700	12	6	327	16	5	0	2	18	0	41
Future Vol, veh/h	14	700	12	6	327	16	5	0	2	18	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	6	10	20	14	14	0	0	50	0	0	0
Mvmt Flow	15	745	13	6	348	17	5	0	2	19	0	44

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	365	0	0	758	0	0	1173	1159	752	1152	1157	357
Stage 1	-	-	-	-	-	-	782	782	-	369	369	-
Stage 2	-	-	-	-	-	-	391	377	-	783	788	-
Critical Hdwy	4.1	-	-	4.3	-	-	7.1	6.5	6.7	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.38	-	-	3.5	4	3.75	3.5	4	3.3
Pot Cap-1 Maneuver	1205	-	-	778	-	-	171	197	342	176	198	692
Stage 1	-	-	-	-	-	-	390	408	-	655	624	-
Stage 2	-	-	-	-	-	-	637	619	-	390	405	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1205	-	-	778	-	-	156	191	342	171	192	692
Mov Cap-2 Maneuver	-	-	-	-	-	-	156	191	-	171	192	-
Stage 1	-	-	-	-	-	-	381	399	-	641	618	-
Stage 2	-	-	-	-	-	-	591	613	-	379	396	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	25.1	17.1
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	156	342	1205	-	-	778	-	-	359
HCM Lane V/C Ratio	0.034	0.006	0.012	-	-	0.008	-	-	0.175
HCM Control Delay (s)	28.9	15.6	8	0	-	9.7	0	-	17.1
HCM Lane LOS	D	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0	0	-	-	0	-	-	0.6

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	38	0	0	32	27	13
Future Vol, veh/h	38	0	0	32	27	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	14	0	0	9	14	4
Mvmt Flow	41	0	0	35	29	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	59	21
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	18	-
Critical Hdwy	-	-	-	-	7.08	6.98
Critical Hdwy Stg 1	-	-	-	-	6.08	-
Critical Hdwy Stg 2	-	-	-	-	6.08	-
Follow-up Hdwy	-	-	-	-	3.64	3.34
Pot Cap-1 Maneuver	-	0	0	-	907	1045
Stage 1	-	0	0	-	942	-
Stage 2	-	0	0	-	968	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	907	1045
Mov Cap-2 Maneuver	-	-	-	-	907	-
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	968	-

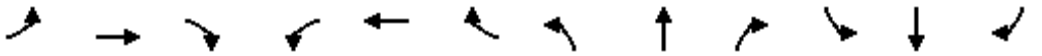
Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	907	1045	-	-
HCM Lane V/C Ratio	0.032	0.014	-	-
HCM Control Delay (s)	9.1	8.5	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	277	12	22	439	110	116
Future Volume (veh/h)	277	12	22	439	110	116
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1159	1559	1870	1885	1900
Adj Flow Rate, veh/h	301	13	24	477	120	126
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	50	23	2	1	0
Cap, veh/h	1372	715	688	1361	195	175
Arrive On Green	0.73	0.73	0.73	0.73	0.11	0.11
Sat Flow, veh/h	1885	982	888	1870	1795	1610
Grp Volume(v), veh/h	301	13	24	477	120	126
Grp Sat Flow(s),veh/h/ln	1885	982	888	1870	1795	1610
Q Serve(g_s), s	4.3	0.3	0.7	7.7	5.3	6.2
Cycle Q Clear(g_c), s	4.3	0.3	5.0	7.7	5.3	6.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1372	715	688	1361	195	175
V/C Ratio(X)	0.22	0.02	0.03	0.35	0.62	0.72
Avail Cap(c_a), veh/h	1372	715	688	1361	762	684
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.6	3.1	4.4	4.1	35.1	35.5
Incr Delay (d2), s/veh	0.4	0.0	0.1	0.7	3.1	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.8	0.1	0.2	3.3	4.4	4.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.0	3.1	4.5	4.8	38.2	41.0
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	314			501	246	
Approach Delay, s/veh	4.0			4.8	39.7	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		15.4		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		6.3		8.2		9.7
Green Ext Time (p_c), s		1.7		0.7		3.0

Intersection Summary	
HCM 6th Ctrl Delay	12.6
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	468	92	38	761	38	121	100	41	44	172	33
Future Volume (veh/h)	39	468	92	38	761	38	121	100	41	44	172	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1841	1841	1841	1737	1737	1737
Adj Flow Rate, veh/h	41	488	96	40	793	40	126	104	43	46	179	34
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	4	4	4	11	11	11
Cap, veh/h	91	802	152	80	959	47	206	145	51	105	290	50
Arrive On Green	0.57	0.57	0.57	0.57	0.57	0.57	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	62	1396	265	46	1670	82	547	605	215	186	1211	211
Grp Volume(v), veh/h	625	0	0	873	0	0	273	0	0	259	0	0
Grp Sat Flow(s),veh/h/ln	1723	0	0	1798	0	0	1367	0	0	1609	0	0
Q Serve(g_s), s	0.0	0.0	0.0	10.1	0.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	15.5	0.0	0.0	27.4	0.0	0.0	13.4	0.0	0.0	9.9	0.0	0.0
Prop In Lane	0.07		0.15	0.05		0.05	0.46		0.16	0.18		0.13
Lane Grp Cap(c), veh/h	1044	0	0	1087	0	0	402	0	0	445	0	0
V/C Ratio(X)	0.60	0.00	0.00	0.80	0.00	0.00	0.68	0.00	0.00	0.58	0.00	0.00
Avail Cap(c_a), veh/h	1746	0	0	1843	0	0	673	0	0	744	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.6	0.0	0.0	12.0	0.0	0.0	25.1	0.0	0.0	23.9	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	1.4	0.0	0.0	2.0	0.0	0.0	1.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.8	0.0	0.0	12.4	0.0	0.0	7.3	0.0	0.0	6.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.2	0.0	0.0	13.4	0.0	0.0	27.1	0.0	0.0	25.1	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		625			873			273			259	
Approach Delay, s/veh		10.2			13.4			27.1			25.1	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.0		22.6		47.0		22.6				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		17.5		15.4		29.4		11.9				
Green Ext Time (p_c), s		4.6		1.3		7.2		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			15.8									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	567	21	25	806	29	23	6	21	25	5	27
Future Vol, veh/h	25	567	21	25	806	29	23	6	21	25	5	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	2	0	4	2	3	0	0	0	4	0	0
Mvmt Flow	26	579	21	26	822	30	23	6	21	26	5	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	852	0	0	600	0	0	1548	1546	590	1544	1541	837
Stage 1	-	-	-	-	-	-	642	642	-	889	889	-
Stage 2	-	-	-	-	-	-	906	904	-	655	652	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.1	6.5	6.2	7.14	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.5	4	3.3	3.536	4	3.3
Pot Cap-1 Maneuver	795	-	-	967	-	-	94	116	511	93	116	370
Stage 1	-	-	-	-	-	-	466	472	-	335	364	-
Stage 2	-	-	-	-	-	-	333	358	-	452	467	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	795	-	-	967	-	-	78	105	511	79	105	370
Mov Cap-2 Maneuver	-	-	-	-	-	-	78	105	-	79	105	-
Stage 1	-	-	-	-	-	-	443	449	-	319	345	-
Stage 2	-	-	-	-	-	-	288	340	-	406	444	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	42.7	53.4
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	78	275	795	-	-	967	-	-	130
HCM Lane V/C Ratio	0.301	0.1	0.032	-	-	0.026	-	-	0.447
HCM Control Delay (s)	69.9	19.5	9.7	0	-	8.8	0	-	53.4
HCM Lane LOS	F	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	1.1	0.3	0.1	-	-	0.1	-	-	2

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	0	0	23	8	7
Future Vol, veh/h	2	0	0	23	8	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	4	8	3
Mvmt Flow	2	0	0	24	8	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	14	1
Stage 1	-	-	-	-	2	-
Stage 2	-	-	-	-	12	-
Critical Hdwy	-	-	-	-	6.96	6.96
Critical Hdwy Stg 1	-	-	-	-	5.96	-
Critical Hdwy Stg 2	-	-	-	-	5.96	-
Follow-up Hdwy	-	-	-	-	3.58	3.33
Pot Cap-1 Maneuver	-	0	0	-	986	1079
Stage 1	-	0	0	-	1003	-
Stage 2	-	0	0	-	992	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	986	1079
Mov Cap-2 Maneuver	-	-	-	-	986	-
Stage 1	-	-	-	-	1003	-
Stage 2	-	-	-	-	992	-

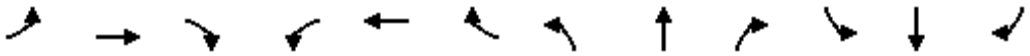
Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	986	1079	-	-
HCM Lane V/C Ratio	0.008	0.007	-	-
HCM Control Delay (s)	8.7	8.4	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0	0	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	337	13	7	338	19	21
Future Volume (veh/h)	337	13	7	338	19	21
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1648	1900	1885	1633	1900
Adj Flow Rate, veh/h	351	14	7	352	20	22
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	17	0	1	18	0
Cap, veh/h	1445	1070	828	1445	95	99
Arrive On Green	0.77	0.77	0.77	0.77	0.06	0.06
Sat Flow, veh/h	1885	1397	1033	1885	1555	1610
Grp Volume(v), veh/h	351	14	7	352	20	22
Grp Sat Flow(s),veh/h/ln	1885	1397	1033	1885	1555	1610
Q Serve(g_s), s	4.2	0.2	0.2	4.2	1.0	1.0
Cycle Q Clear(g_c), s	4.2	0.2	4.3	4.2	1.0	1.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1445	1070	828	1445	95	99
V/C Ratio(X)	0.24	0.01	0.01	0.24	0.21	0.22
Avail Cap(c_a), veh/h	1445	1070	828	1445	695	720
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.6	2.2	3.2	2.6	35.0	35.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.4	1.1	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.0	0.0	1.3	0.7	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.0	2.2	3.3	3.0	36.0	36.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	365			359	42	
Approach Delay, s/veh	3.0			3.0	36.1	
Approach LOS	A			A	D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	67.0	11.3	67.0
Change Period (Y+Rc), s	7.0	6.5	7.0
Max Green Setting (Gmax), s	60.0	35.0	60.0
Max Q Clear Time (g_c+I1), s	6.2	3.0	6.3
Green Ext Time (p_c), s	2.0	0.1	2.0

Intersection Summary	
HCM 6th Ctrl Delay	4.8
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	553	92	36	591	78	85	208	46	48	143	45
Future Volume (veh/h)	49	553	92	36	591	78	85	208	46	48	143	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1841	1841	1841
Adj Flow Rate, veh/h	52	582	97	38	622	82	89	219	48	51	151	47
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	4	4	4
Cap, veh/h	97	812	131	82	869	111	147	280	57	116	277	77
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	76	1442	232	50	1542	198	331	1103	223	217	1092	304
Grp Volume(v), veh/h	731	0	0	742	0	0	356	0	0	249	0	0
Grp Sat Flow(s),veh/h/ln	1751	0	0	1790	0	0	1657	0	0	1613	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.1	0.0	0.0	5.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	20.6	0.0	0.0	20.7	0.0	0.0	14.3	0.0	0.0	9.2	0.0	0.0
Prop In Lane	0.07		0.13	0.05		0.11	0.25		0.13	0.20		0.19
Lane Grp Cap(c), veh/h	1041	0	0	1062	0	0	484	0	0	470	0	0
V/C Ratio(X)	0.70	0.00	0.00	0.70	0.00	0.00	0.74	0.00	0.00	0.53	0.00	0.00
Avail Cap(c_a), veh/h	1745	0	0	1789	0	0	754	0	0	735	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.2	0.0	0.0	11.3	0.0	0.0	25.0	0.0	0.0	23.1	0.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.8	0.0	0.0	2.2	0.0	0.0	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.2	0.0	0.0	10.3	0.0	0.0	9.1	0.0	0.0	6.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.1	0.0	0.0	12.1	0.0	0.0	27.2	0.0	0.0	24.0	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h		731			742			356			249	
Approach Delay, s/veh		12.1			12.1			27.2			24.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.0		24.0		47.0		24.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		22.6		16.3		22.7		11.2				
Green Ext Time (p_c), s		5.7		1.7		5.7		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			16.1									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	619	25	24	624	21	19	6	23	24	1	34
Future Vol, veh/h	38	619	25	24	624	21	19	6	23	24	1	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	5	1	0	0	2	5	0	0	0	8	0	0
Mvmt Flow	40	659	27	26	664	22	20	6	24	26	1	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	686	0	0	686	0	0	1499	1491	673	1495	1493	675
Stage 1	-	-	-	-	-	-	753	753	-	727	727	-
Stage 2	-	-	-	-	-	-	746	738	-	768	766	-
Critical Hdwy	4.15	-	-	4.1	-	-	7.1	6.5	6.2	7.18	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Follow-up Hdwy	2.245	-	-	2.2	-	-	3.5	4	3.3	3.572	4	3.3
Pot Cap-1 Maneuver	894	-	-	917	-	-	102	125	459	98	124	457
Stage 1	-	-	-	-	-	-	405	420	-	406	432	-
Stage 2	-	-	-	-	-	-	409	427	-	385	415	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	894	-	-	917	-	-	85	111	459	81	110	457
Mov Cap-2 Maneuver	-	-	-	-	-	-	85	111	-	81	110	-
Stage 1	-	-	-	-	-	-	375	389	-	376	412	-
Stage 2	-	-	-	-	-	-	358	407	-	332	385	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.3	35.6	43.2
HCM LOS			E	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	85	278	894	-	-	917	-	-	155
HCM Lane V/C Ratio	0.238	0.111	0.045	-	-	0.028	-	-	0.405
HCM Control Delay (s)	60.1	19.6	9.2	0	-	9	0	-	43.2
HCM Lane LOS	F	C	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	0.8	0.4	0.1	-	-	0.1	-	-	1.8

Intersection	
Int Delay, s/veh	5.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	127	0	0	331	156	279
Future Vol, veh/h	127	0	0	331	156	279
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	5	2	2
Mvmt Flow	131	0	0	341	161	288

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	302	66
Stage 1	-	-	-	-	131	-
Stage 2	-	-	-	-	171	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	665	984
Stage 1	-	0	0	-	881	-
Stage 2	-	0	0	-	842	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	665	984
Mov Cap-2 Maneuver	-	-	-	-	665	-
Stage 1	-	-	-	-	881	-
Stage 2	-	-	-	-	842	-

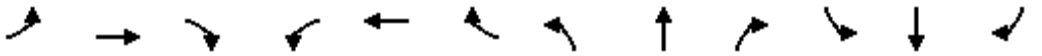
Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	665	984	-	-
HCM Lane V/C Ratio	0.242	0.292	-	-
HCM Control Delay (s)	12.1	10.2	-	-
HCM Lane LOS	B	B	-	-
HCM 95th %tile Q(veh)	0.9	1.2	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	361	60	43	214	35	21
Future Volume (veh/h)	361	60	43	214	35	21
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1722	1678	1767	1278	1248
Adj Flow Rate, veh/h	406	67	48	240	39	24
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	12	15	9	42	44
Cap, veh/h	1355	1101	655	1333	92	80
Arrive On Green	0.75	0.75	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1796	1459	826	1767	1217	1058
Grp Volume(v), veh/h	406	67	48	240	39	24
Grp Sat Flow(s),veh/h/ln	1796	1459	826	1767	1217	1058
Q Serve(g_s), s	5.7	0.9	1.6	3.1	2.4	1.7
Cycle Q Clear(g_c), s	5.7	0.9	7.3	3.1	2.4	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1355	1101	655	1333	92	80
V/C Ratio(X)	0.30	0.06	0.07	0.18	0.42	0.30
Avail Cap(c_a), veh/h	1355	1101	655	1333	536	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.1	2.5	4.2	2.8	35.1	34.8
Incr Delay (d2), s/veh	0.6	0.1	0.2	0.3	3.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	0.3	0.4	1.0	1.4	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.7	2.6	4.5	3.1	38.2	36.8
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	473			288	63	
Approach Delay, s/veh	3.5			3.3	37.7	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		12.5		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		7.7		4.4		9.3
Green Ext Time (p_c), s		2.6		0.2		1.6

Intersection Summary	
HCM 6th Ctrl Delay	6.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	649	172	37	277	26	88	134	29	42	179	36
Future Volume (veh/h)	23	649	172	37	277	26	88	134	29	42	179	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1796	1796	1411	1693	1693	1722	1678	1678	1767	1826	1826
Adj Flow Rate, veh/h	26	746	198	43	318	30	101	154	33	48	206	41
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	7	7	33	14	14	12	15	15	9	5	5
Cap, veh/h	564	832	221	142	926	87	211	331	71	249	366	73
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	959	1368	363	448	1523	144	1043	1339	287	1130	1479	294
Grp Volume(v), veh/h	26	0	944	43	0	348	101	0	187	48	0	247
Grp Sat Flow(s),veh/h/ln	959	0	1731	448	0	1667	1043	0	1626	1130	0	1773
Q Serve(g_s), s	1.2	0.0	42.3	8.2	0.0	9.3	8.4	0.0	8.8	3.4	0.0	11.0
Cycle Q Clear(g_c), s	10.6	0.0	42.3	50.6	0.0	9.3	19.4	0.0	8.8	12.2	0.0	11.0
Prop In Lane	1.00		0.21	1.00		0.09	1.00		0.18	1.00		0.17
Lane Grp Cap(c), veh/h	564	0	1053	142	0	1014	211	0	402	249	0	439
V/C Ratio(X)	0.05	0.00	0.90	0.30	0.00	0.34	0.48	0.00	0.46	0.19	0.00	0.56
Avail Cap(c_a), veh/h	726	0	1345	217	0	1295	300	0	541	346	0	590
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	11.4	0.0	15.2	37.0	0.0	8.7	38.1	0.0	28.8	34.0	0.0	29.6
Incr Delay (d2), s/veh	0.0	0.0	6.9	1.2	0.0	0.2	1.7	0.0	0.8	0.4	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.4	0.0	20.7	1.6	0.0	4.9	3.9	0.0	6.0	1.6	0.0	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.4	0.0	22.1	38.2	0.0	8.9	39.8	0.0	29.7	34.4	0.0	30.8
LnGrp LOS	B	A	C	D	A	A	D	A	C	C	A	C
Approach Vol, veh/h		970			391			288			295	
Approach Delay, s/veh		21.8			12.2			33.2			31.4	
Approach LOS		C			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		61.8		28.3		61.8		28.3				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		44.3		21.4		52.6		14.2				
Green Ext Time (p_c), s		7.6		0.9		2.2		1.3				

Intersection Summary												
HCM 6th Ctrl Delay			23.0									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱			↕	
Traffic Vol, veh/h	15	732	17	11	342	17	8	0	5	19	1	43
Future Vol, veh/h	15	732	17	11	342	17	8	0	5	19	1	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	6	10	20	14	14	0	0	50	0	0	0
Mvmt Flow	16	779	18	12	364	18	9	0	5	20	1	46

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	382	0	0	797	0	0	1241	1226	788	1220	1226	373
Stage 1	-	-	-	-	-	-	820	820	-	397	397	-
Stage 2	-	-	-	-	-	-	421	406	-	823	829	-
Critical Hdwy	4.1	-	-	4.3	-	-	7.1	6.5	6.7	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.38	-	-	3.5	4	3.75	3.5	4	3.3
Pot Cap-1 Maneuver	1188	-	-	751	-	-	153	180	325	158	180	678
Stage 1	-	-	-	-	-	-	372	392	-	633	607	-
Stage 2	-	-	-	-	-	-	614	601	-	371	388	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1188	-	-	751	-	-	137	172	325	150	172	678
Mov Cap-2 Maneuver	-	-	-	-	-	-	137	172	-	150	172	-
Stage 1	-	-	-	-	-	-	363	383	-	618	595	-
Stage 2	-	-	-	-	-	-	560	589	-	356	379	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	26.6	19.1
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	137	325	1188	-	-	751	-	-	322
HCM Lane V/C Ratio	0.062	0.016	0.013	-	-	0.016	-	-	0.208
HCM Control Delay (s)	33	16.3	8.1	0	-	9.9	0	-	19.1
HCM Lane LOS	D	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0.1	0	-	-	0	-	-	0.8

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	0	0	34	32	14
Future Vol, veh/h	41	0	0	34	32	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	14	0	0	9	14	4
Mvmt Flow	45	0	0	37	35	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	64	23
Stage 1	-	-	-	-	45	-
Stage 2	-	-	-	-	19	-
Critical Hdwy	-	-	-	-	7.08	6.98
Critical Hdwy Stg 1	-	-	-	-	6.08	-
Critical Hdwy Stg 2	-	-	-	-	6.08	-
Follow-up Hdwy	-	-	-	-	3.64	3.34
Pot Cap-1 Maneuver	-	0	0	-	901	1042
Stage 1	-	0	0	-	938	-
Stage 2	-	0	0	-	967	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	901	1042
Mov Cap-2 Maneuver	-	-	-	-	901	-
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	967	-

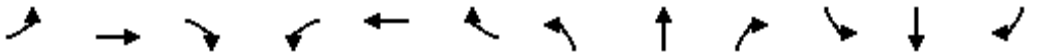
Approach	EB	WB	NB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	901	1042	-	-
HCM Lane V/C Ratio	0.039	0.015	-	-
HCM Control Delay (s)	9.2	8.5	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	296	13	25	466	115	123
Future Volume (veh/h)	296	13	25	466	115	123
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1159	1559	1870	1885	1900
Adj Flow Rate, veh/h	322	14	27	507	125	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	50	23	2	1	0
Cap, veh/h	1364	711	667	1353	204	183
Arrive On Green	0.72	0.72	0.72	0.72	0.11	0.11
Sat Flow, veh/h	1885	982	871	1870	1795	1610
Grp Volume(v), veh/h	322	14	27	507	125	134
Grp Sat Flow(s),veh/h/ln	1885	982	871	1870	1795	1610
Q Serve(g_s), s	4.7	0.3	0.9	8.5	5.5	6.7
Cycle Q Clear(g_c), s	4.7	0.3	5.6	8.5	5.5	6.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1364	711	667	1353	204	183
V/C Ratio(X)	0.24	0.02	0.04	0.37	0.61	0.73
Avail Cap(c_a), veh/h	1364	711	667	1353	758	680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.8	3.2	4.8	4.3	35.0	35.5
Incr Delay (d2), s/veh	0.4	0.1	0.1	0.8	3.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	0.1	0.2	3.8	4.5	5.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.2	3.3	4.9	5.1	38.0	41.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	336			534	259	
Approach Delay, s/veh	4.2			5.1	39.6	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		15.9		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		6.7		8.7		10.5
Green Ext Time (p_c), s		1.8		0.8		3.2

Intersection Summary		
HCM 6th Ctrl Delay	12.8	
HCM 6th LOS	B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	489	106	40	796	40	137	105	43	46	180	35
Future Volume (veh/h)	41	489	106	40	796	40	137	105	43	46	180	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1870	1870	1737	1870	1870	1811	1841	1841	1870	1737	1737
Adj Flow Rate, veh/h	43	509	110	42	829	42	143	109	45	48	188	36
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	2	2	11	2	2	6	4	4	2	11	11
Cap, veh/h	192	820	177	334	971	49	280	339	140	349	388	74
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	621	1490	322	747	1765	89	1120	1238	511	1233	1417	271
Grp Volume(v), veh/h	43	0	619	42	0	871	143	0	154	48	0	224
Grp Sat Flow(s),veh/h/ln	621	0	1812	747	0	1854	1120	0	1749	1233	0	1688
Q Serve(g_s), s	4.7	0.0	17.2	3.0	0.0	29.4	9.0	0.0	5.2	2.4	0.0	8.2
Cycle Q Clear(g_c), s	34.1	0.0	17.2	20.2	0.0	29.4	17.2	0.0	5.2	7.6	0.0	8.2
Prop In Lane	1.00		0.18	1.00		0.05	1.00		0.29	1.00		0.16
Lane Grp Cap(c), veh/h	192	0	997	334	0	1020	280	0	479	349	0	462
V/C Ratio(X)	0.22	0.00	0.62	0.13	0.00	0.85	0.51	0.00	0.32	0.14	0.00	0.48
Avail Cap(c_a), veh/h	439	0	1719	632	0	1759	428	0	711	512	0	686
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.5	0.0	11.3	18.3	0.0	14.1	29.7	0.0	21.3	24.4	0.0	22.4
Incr Delay (d2), s/veh	0.6	0.0	0.6	0.2	0.0	2.2	1.4	0.0	0.4	0.2	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	0.0	9.1	0.8	0.0	14.6	4.2	0.0	3.5	1.2	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	0.0	12.0	18.4	0.0	16.2	31.1	0.0	21.7	24.5	0.0	23.2
LnGrp LOS	C	A	B	B	A	B	C	A	C	C	A	C
Approach Vol, veh/h		662			913			297			272	
Approach Delay, s/veh		13.1			16.3			26.2			23.5	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.6		26.2		47.6		26.2				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		36.1		19.2		31.4		10.2				
Green Ext Time (p_c), s		4.5		1.0		7.3		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			17.6									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	588	35	42	837	30	39	7	37	26	3	28
Future Vol, veh/h	26	588	35	42	837	30	39	7	37	26	3	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	2	0	4	2	3	0	0	0	4	0	0
Mvmt Flow	27	600	36	43	854	31	40	7	38	27	3	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	885	0	0	636	0	0	1644	1643	618	1651	1646	870
Stage 1	-	-	-	-	-	-	672	672	-	956	956	-
Stage 2	-	-	-	-	-	-	972	971	-	695	690	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.1	6.5	6.2	7.14	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.5	4	3.3	3.536	4	3.3
Pot Cap-1 Maneuver	773	-	-	938	-	-	81	101	493	78	100	354
Stage 1	-	-	-	-	-	-	449	458	-	307	339	-
Stage 2	-	-	-	-	-	-	306	334	-	429	449	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	773	-	-	938	-	-	65	87	493	60	86	354
Mov Cap-2 Maneuver	-	-	-	-	-	-	65	87	-	60	86	-
Stage 1	-	-	-	-	-	-	425	433	-	290	308	-
Stage 2	-	-	-	-	-	-	253	304	-	369	425	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.4	69.1	76.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	65	283	773	-	-	938	-	-	104
HCM Lane V/C Ratio	0.612	0.159	0.034	-	-	0.046	-	-	0.559
HCM Control Delay (s)	124.4	20.1	9.8	0	-	9	0	-	76.6
HCM Lane LOS	F	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	2.6	0.6	0.1	-	-	0.1	-	-	2.6

Intersection	
Int Delay, s/veh	3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	0	0	26	16	7
Future Vol, veh/h	4	0	0	26	16	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	4	8	3
Mvmt Flow	4	0	0	27	17	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	18	2
Stage 1	-	-	-	-	4	-
Stage 2	-	-	-	-	14	-
Critical Hdwy	-	-	-	-	6.96	6.96
Critical Hdwy Stg 1	-	-	-	-	5.96	-
Critical Hdwy Stg 2	-	-	-	-	5.96	-
Follow-up Hdwy	-	-	-	-	3.58	3.33
Pot Cap-1 Maneuver	-	0	0	-	980	1078
Stage 1	-	0	0	-	1001	-
Stage 2	-	0	0	-	989	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	980	1078
Mov Cap-2 Maneuver	-	-	-	-	980	-
Stage 1	-	-	-	-	1001	-
Stage 2	-	-	-	-	989	-

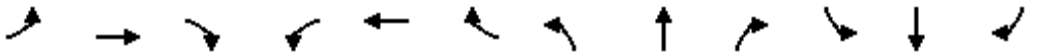
Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	980	1078	-	-
HCM Lane V/C Ratio	0.017	0.007	-	-
HCM Control Delay (s)	8.7	8.4	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	362	14	9	362	20	24
Future Volume (veh/h)	362	14	9	362	20	24
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1648	1900	1885	1633	1900
Adj Flow Rate, veh/h	377	15	9	377	21	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	17	0	1	18	0
Cap, veh/h	1440	1067	802	1440	100	104
Arrive On Green	0.76	0.76	0.76	0.76	0.06	0.06
Sat Flow, veh/h	1885	1397	1008	1885	1555	1610
Grp Volume(v), veh/h	377	15	9	377	21	25
Grp Sat Flow(s),veh/h/ln	1885	1397	1008	1885	1555	1610
Q Serve(g_s), s	4.6	0.2	0.2	4.6	1.0	1.2
Cycle Q Clear(g_c), s	4.6	0.2	4.9	4.6	1.0	1.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1440	1067	802	1440	100	104
V/C Ratio(X)	0.26	0.01	0.01	0.26	0.21	0.24
Avail Cap(c_a), veh/h	1440	1067	802	1440	693	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.7	2.2	3.5	2.7	34.8	34.9
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.4	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	0.0	0.1	1.5	0.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.2	2.2	3.5	3.2	35.9	36.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	392			386	46	
Approach Delay, s/veh	3.1			3.2	36.0	
Approach LOS	A			A	D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	67.0	11.6	67.0
Change Period (Y+Rc), s	7.0	6.5	7.0
Max Green Setting (Gmax), s	60.0	35.0	60.0
Max Q Clear Time (g_c+I1), s	6.6	3.2	6.9
Green Ext Time (p_c), s	2.2	0.1	2.2

Intersection Summary	
HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	578	109	38	618	82	102	218	48	50	150	47
Future Volume (veh/h)	51	578	109	38	618	82	102	218	48	50	150	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1885	1811	1885	1885	1796	1870	1870	1900	1841	1841
Adj Flow Rate, veh/h	54	608	115	40	651	86	107	229	51	53	158	49
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	1	1	6	1	1	7	2	2	0	4	4
Cap, veh/h	307	881	167	310	933	123	263	359	80	219	327	101
Arrive On Green	0.57	0.57	0.57	0.57	0.57	0.57	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	709	1541	292	707	1631	215	1128	1481	330	1117	1348	418
Grp Volume(v), veh/h	54	0	723	40	0	737	107	0	280	53	0	207
Grp Sat Flow(s),veh/h/ln	709	0	1833	707	0	1846	1128	0	1811	1117	0	1765
Q Serve(g_s), s	4.1	0.0	19.5	3.0	0.0	19.9	6.3	0.0	9.7	3.1	0.0	7.0
Cycle Q Clear(g_c), s	24.0	0.0	19.5	22.5	0.0	19.9	13.3	0.0	9.7	12.8	0.0	7.0
Prop In Lane	1.00		0.16	1.00		0.12	1.00		0.18	1.00		0.24
Lane Grp Cap(c), veh/h	307	0	1048	310	0	1056	263	0	439	219	0	428
V/C Ratio(X)	0.18	0.00	0.69	0.13	0.00	0.70	0.41	0.00	0.64	0.24	0.00	0.48
Avail Cap(c_a), veh/h	611	0	1834	613	0	1848	473	0	777	427	0	757
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.2	0.0	10.6	18.5	0.0	10.7	28.5	0.0	23.7	29.5	0.0	22.7
Incr Delay (d2), s/veh	0.3	0.0	0.8	0.2	0.0	0.8	1.0	0.0	1.5	0.6	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.1	0.0	9.5	0.8	0.0	9.7	2.9	0.0	7.0	1.4	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.5	0.0	11.4	18.7	0.0	11.5	29.5	0.0	25.3	30.1	0.0	23.6
LnGrp LOS	B	A	B	B	A	B	C	A	C	C	A	C
Approach Vol, veh/h		777			777			387			260	
Approach Delay, s/veh		12.0			11.9			26.5			24.9	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.0		23.0		47.0		23.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		26.0		15.3		24.5		14.8				
Green Ext Time (p_c), s		5.7		1.6		5.7		1.1				

Intersection Summary												
HCM 6th Ctrl Delay			16.0									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱			↕	
Traffic Vol, veh/h	40	643	42	44	647	22	37	7	41	25	3	36
Future Vol, veh/h	40	643	42	44	647	22	37	7	41	25	3	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	5	1	0	0	2	5	0	0	0	8	0	0
Mvmt Flow	43	684	45	47	688	23	39	7	44	27	3	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	711	0	0	729	0	0	1607	1598	707	1612	1609	700
Stage 1	-	-	-	-	-	-	793	793	-	794	794	-
Stage 2	-	-	-	-	-	-	814	805	-	818	815	-
Critical Hdwy	4.15	-	-	4.1	-	-	7.1	6.5	6.2	7.18	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Follow-up Hdwy	2.245	-	-	2.2	-	-	3.5	4	3.3	3.572	4	3.3
Pot Cap-1 Maneuver	875	-	-	884	-	-	85	107	439	81	106	443
Stage 1	-	-	-	-	-	-	385	403	-	373	403	-
Stage 2	-	-	-	-	-	-	375	398	-	361	394	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	875	-	-	884	-	-	66	89	439	60	89	443
Mov Cap-2 Maneuver	-	-	-	-	-	-	66	89	-	60	89	-
Stage 1	-	-	-	-	-	-	353	370	-	342	368	-
Stage 2	-	-	-	-	-	-	310	363	-	292	361	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.6	64	68.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	66	279	875	-	-	884	-	-	120
HCM Lane V/C Ratio	0.596	0.183	0.049	-	-	0.053	-	-	0.567
HCM Control Delay (s)	120	20.8	9.3	0	-	9.3	0	-	68.6
HCM Lane LOS	F	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	2.5	0.7	0.2	-	-	0.2	-	-	2.8

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	136	0	0	349	173	292
Future Vol, veh/h	136	0	0	349	173	292
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	5	2	2
Mvmt Flow	140	0	0	360	178	301

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	320	70
Stage 1	-	-	-	-	140	-
Stage 2	-	-	-	-	180	-
Critical Hdwy	-	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	-	0	0	-	648	978
Stage 1	-	0	0	-	872	-
Stage 2	-	0	0	-	833	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	648	978
Mov Cap-2 Maneuver	-	-	-	-	648	-
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	833	-

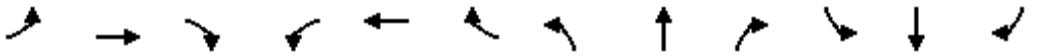
Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	648	978	-	-
HCM Lane V/C Ratio	0.275	0.308	-	-
HCM Control Delay (s)	12.7	10.3	-	-
HCM Lane LOS	B	B	-	-
HCM 95th %tile Q(veh)	1.1	1.3	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	378	60	43	218	35	21
Future Volume (veh/h)	378	60	43	218	35	21
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1722	1678	1767	1278	1248
Adj Flow Rate, veh/h	425	67	48	245	39	24
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	12	15	9	42	44
Cap, veh/h	1355	1101	641	1333	92	80
Arrive On Green	0.75	0.75	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1796	1459	812	1767	1217	1058
Grp Volume(v), veh/h	425	67	48	245	39	24
Grp Sat Flow(s),veh/h/ln	1796	1459	812	1767	1217	1058
Q Serve(g_s), s	6.0	0.9	1.6	3.1	2.4	1.7
Cycle Q Clear(g_c), s	6.0	0.9	7.7	3.1	2.4	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1355	1101	641	1333	92	80
V/C Ratio(X)	0.31	0.06	0.07	0.18	0.42	0.30
Avail Cap(c_a), veh/h	1355	1101	641	1333	536	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.1	2.5	4.4	2.8	35.1	34.8
Incr Delay (d2), s/veh	0.6	0.1	0.2	0.3	3.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.0	0.3	0.4	1.0	1.4	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.7	2.6	4.6	3.1	38.2	36.8
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	492			293	63	
Approach Delay, s/veh	3.6			3.3	37.7	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		12.5		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		8.0		4.4		9.7
Green Ext Time (p_c), s		2.7		0.2		1.6

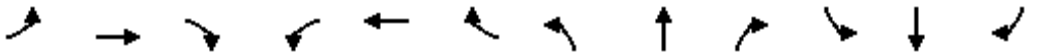
Intersection Summary	
HCM 6th Ctrl Delay	6.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	749	17	36	344	17	10	1	5	19	10	43
Future Volume (veh/h)	15	749	17	36	344	17	10	1	5	19	10	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811	1648	1693	1693	1752	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	16	797	18	38	366	18	11	1	5	20	11	46
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	17	14	14	10	0	0	0	0	0
Cap, veh/h	53	1320	29	483	1214	60	207	23	115	77	31	81
Arrive On Green	0.76	0.76	0.76	0.76	0.76	0.76	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	14	1739	39	591	1600	79	1261	275	1377	288	368	974
Grp Volume(v), veh/h	831	0	0	38	0	384	11	0	6	77	0	0
Grp Sat Flow(s),veh/h/ln	1792	0	0	591	0	1678	1261	0	1652	1631	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	6.1	0.0	0.0	0.3	1.6	0.0	0.0
Cycle Q Clear(g_c), s	17.6	0.0	0.0	2.5	0.0	6.1	0.5	0.0	0.3	3.8	0.0	0.0
Prop In Lane	0.02		0.02	1.00		0.05	1.00		0.83	0.26		0.60
Lane Grp Cap(c), veh/h	1403	0	0	483	0	1274	207	0	138	189	0	0
V/C Ratio(X)	0.59	0.00	0.00	0.08	0.00	0.30	0.05	0.00	0.04	0.41	0.00	0.00
Avail Cap(c_a), veh/h	1403	0	0	483	0	1274	566	0	608	642	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.6	0.0	0.0	2.8	0.0	3.2	36.2	0.0	36.1	37.7	0.0	0.0
Incr Delay (d2), s/veh	1.8	0.0	0.0	0.3	0.0	0.6	0.1	0.0	0.1	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.7	0.0	0.0	0.2	0.0	2.1	0.4	0.0	0.2	2.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.5	0.0	0.0	3.1	0.0	3.8	36.3	0.0	36.2	39.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	A
Approach Vol, veh/h		831			422			17			77	
Approach Delay, s/veh		6.5			3.8			36.3			39.1	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		72.0		13.6		72.0		13.6				
Change Period (Y+Rc), s		7.0		6.5		7.0		6.5				
Max Green Setting (Gmax), s		65.0		31.5		65.0		31.5				
Max Q Clear Time (g_c+I1), s		19.6		2.5		8.1		5.8				
Green Ext Time (p_c), s		6.5		0.0		2.7		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			7.9									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	649	184	37	277	26	135	134	29	42	179	36
Future Volume (veh/h)	23	649	184	37	277	26	135	134	29	42	179	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1796	1796	1411	1693	1693	1737	1678	1678	1767	1826	1826
Adj Flow Rate, veh/h	26	746	211	43	318	30	155	154	33	48	206	41
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	7	7	33	14	14	11	15	15	9	5	5
Cap, veh/h	550	819	232	119	926	87	230	366	78	268	404	80
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	959	1347	381	443	1523	144	1052	1339	287	1130	1479	294
Grp Volume(v), veh/h	26	0	957	43	0	348	155	0	187	48	0	247
Grp Sat Flow(s),veh/h/ln	959	0	1728	443	0	1667	1052	0	1626	1130	0	1773
Q Serve(g_s), s	1.5	0.0	53.4	10.4	0.0	11.3	16.0	0.0	10.4	4.0	0.0	12.9
Cycle Q Clear(g_c), s	12.9	0.0	53.4	63.8	0.0	11.3	28.9	0.0	10.4	14.3	0.0	12.9
Prop In Lane	1.00		0.22	1.00		0.09	1.00		0.18	1.00		0.17
Lane Grp Cap(c), veh/h	550	0	1050	119	0	1013	230	0	445	268	0	485
V/C Ratio(X)	0.05	0.00	0.91	0.36	0.00	0.34	0.67	0.00	0.42	0.18	0.00	0.51
Avail Cap(c_a), veh/h	579	0	1103	133	0	1064	230	0	445	268	0	485
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.8	0.0	18.9	46.9	0.0	10.7	45.8	0.0	32.7	38.6	0.0	33.6
Incr Delay (d2), s/veh	0.0	0.0	10.9	1.8	0.0	0.2	7.6	0.0	0.6	0.3	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.0	28.2	2.1	0.0	6.6	8.0	0.0	7.2	2.0	0.0	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.9	0.0	29.8	48.7	0.0	10.9	53.4	0.0	33.3	38.9	0.0	34.5
LnGrp LOS	B	A	C	D	A	B	D	A	C	D	A	C
Approach Vol, veh/h		983			391			342			295	
Approach Delay, s/veh		29.4			15.0			42.4			35.2	
Approach LOS		C			B			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		73.7		36.0		73.7		36.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		55.4		30.9		65.8		16.3				
Green Ext Time (p_c), s		6.0		0.0		0.9		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			29.7									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	42	0	0	43	70	14
Future Vol, veh/h	42	0	0	43	70	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	14	0	0	9	12	4
Mvmt Flow	46	0	0	47	76	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	70	23
Stage 1	-	-	-	-	46	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	-	-	-	-	7.04	6.98
Critical Hdwy Stg 1	-	-	-	-	6.04	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	-	-	3.62	3.34
Pot Cap-1 Maneuver	-	0	0	-	898	1042
Stage 1	-	0	0	-	942	-
Stage 2	-	0	0	-	967	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	898	1042
Mov Cap-2 Maneuver	-	-	-	-	898	-
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	967	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	898	1042	-	-
HCM Lane V/C Ratio	0.085	0.015	-	-
HCM Control Delay (s)	9.4	8.5	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.3	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	756	17	22	395	2	12
Future Vol, veh/h	756	17	22	395	2	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	0	14	0	42
Mvmt Flow	822	18	24	429	2	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	822	0	1299	822
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	477	-
Critical Hdwy	-	-	4.1	-	6.4	6.62
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.678
Pot Cap-1 Maneuver	-	0	816	-	180	319
Stage 1	-	0	-	-	435	-
Stage 2	-	0	-	-	629	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	816	-	173	319
Mov Cap-2 Maneuver	-	-	-	-	307	-
Stage 1	-	-	-	-	435	-
Stage 2	-	-	-	-	604	-

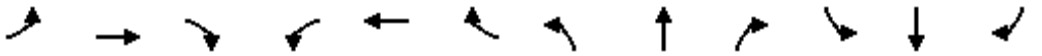
Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	16.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	307	319	-	816	-
HCM Lane V/C Ratio	0.007	0.041	-	0.029	-
HCM Control Delay (s)	16.8	16.8	-	9.5	-
HCM Lane LOS	C	C	-	A	-
HCM 95th %tile Q(veh)	0	0.1	-	0.1	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	301	13	25	483	115	123
Future Volume (veh/h)	301	13	25	483	115	123
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1159	1559	1870	1885	1900
Adj Flow Rate, veh/h	327	14	27	525	125	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	50	23	2	1	0
Cap, veh/h	1364	711	663	1353	204	183
Arrive On Green	0.72	0.72	0.72	0.72	0.11	0.11
Sat Flow, veh/h	1885	982	867	1870	1795	1610
Grp Volume(v), veh/h	327	14	27	525	125	134
Grp Sat Flow(s),veh/h/ln	1885	982	867	1870	1795	1610
Q Serve(g_s), s	4.8	0.3	0.9	8.9	5.5	6.7
Cycle Q Clear(g_c), s	4.8	0.3	5.7	8.9	5.5	6.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1364	711	663	1353	204	183
V/C Ratio(X)	0.24	0.02	0.04	0.39	0.61	0.73
Avail Cap(c_a), veh/h	1364	711	663	1353	758	680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.8	3.2	4.8	4.4	35.0	35.5
Incr Delay (d2), s/veh	0.4	0.1	0.1	0.8	3.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	0.1	0.2	4.0	4.5	5.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.3	3.3	4.9	5.2	38.0	41.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	341			552	259	
Approach Delay, s/veh	4.2			5.2	39.6	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		15.9		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		6.8		8.7		10.9
Green Ext Time (p_c), s		1.8		0.8		3.4

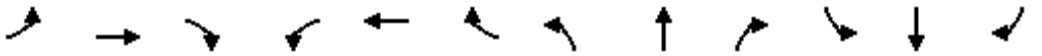
Intersection Summary	
HCM 6th Ctrl Delay	12.6
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	593	35	49	845	30	48	15	37	26	8	28
Future Volume (veh/h)	26	593	35	49	845	30	48	15	37	26	8	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1767	1870	1870	1826	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	27	605	36	50	862	31	49	15	38	27	8	29
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	9	2	2	5	0	0	0	0	0
Cap, veh/h	71	1224	71	611	1330	48	230	45	115	104	38	66
Arrive On Green	0.74	0.74	0.74	0.74	0.74	0.74	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	35	1652	96	744	1794	65	1338	476	1207	445	395	696
Grp Volume(v), veh/h	668	0	0	50	0	893	49	0	53	64	0	0
Grp Sat Flow(s),veh/h/ln	1783	0	0	744	0	1859	1338	0	1683	1536	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	19.7	0.0	0.0	2.4	0.8	0.0	0.0
Cycle Q Clear(g_c), s	12.0	0.0	0.0	2.1	0.0	19.7	2.2	0.0	2.4	3.2	0.0	0.0
Prop In Lane	0.04		0.05	1.00		0.03	1.00		0.72	0.42		0.45
Lane Grp Cap(c), veh/h	1367	0	0	611	0	1377	230	0	160	208	0	0
V/C Ratio(X)	0.49	0.00	0.00	0.08	0.00	0.65	0.21	0.00	0.33	0.31	0.00	0.00
Avail Cap(c_a), veh/h	1367	0	0	611	0	1377	680	0	726	722	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.3	0.0	0.0	3.0	0.0	5.3	34.7	0.0	34.8	35.1	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.3	0.0	2.4	0.5	0.0	1.2	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.9	0.0	0.0	0.3	0.0	8.1	1.7	0.0	1.8	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.6	0.0	0.0	3.3	0.0	7.7	35.1	0.0	36.0	35.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	A
Approach Vol, veh/h		668			943			102			64	
Approach Delay, s/veh		5.6			7.5			35.6			35.9	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		68.0		14.3		68.0		14.3				
Change Period (Y+Rc), s		7.0		6.5		7.0		6.5				
Max Green Setting (Gmax), s		61.0		35.5		61.0		35.5				
Max Q Clear Time (g_c+I1), s		14.0		4.4		21.7		5.2				
Green Ext Time (p_c), s		4.8		0.4		7.7		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			9.4									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	489	152	40	796	40	149	105	43	46	180	35
Future Volume (veh/h)	41	489	152	40	796	40	149	105	43	46	180	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1870	1870	1737	1870	1870	1796	1841	1841	1870	1737	1737
Adj Flow Rate, veh/h	43	509	158	42	829	42	155	109	45	48	188	36
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	2	2	11	2	2	7	4	4	2	11	11
Cap, veh/h	188	754	234	296	972	49	284	349	144	355	399	76
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	621	1369	425	715	1765	89	1111	1238	511	1233	1417	271
Grp Volume(v), veh/h	43	0	667	42	0	871	155	0	154	48	0	224
Grp Sat Flow(s),veh/h/ln	621	0	1794	715	0	1854	1111	0	1749	1233	0	1688
Q Serve(g_s), s	4.9	0.0	20.6	3.5	0.0	30.9	10.4	0.0	5.4	2.5	0.0	8.5
Cycle Q Clear(g_c), s	35.8	0.0	20.6	24.1	0.0	30.9	19.0	0.0	5.4	7.9	0.0	8.5
Prop In Lane	1.00		0.24	1.00		0.05	1.00		0.29	1.00		0.16
Lane Grp Cap(c), veh/h	188	0	988	296	0	1022	284	0	493	355	0	476
V/C Ratio(X)	0.23	0.00	0.67	0.14	0.00	0.85	0.55	0.00	0.31	0.14	0.00	0.47
Avail Cap(c_a), veh/h	405	0	1617	547	0	1671	400	0	675	483	0	652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.9	0.0	12.5	21.1	0.0	14.8	31.0	0.0	22.0	25.1	0.0	23.1
Incr Delay (d2), s/veh	0.6	0.0	0.8	0.2	0.0	2.5	1.6	0.0	0.4	0.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.0	10.7	1.0	0.0	15.7	4.9	0.0	3.7	1.2	0.0	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	0.0	13.3	21.3	0.0	17.2	32.6	0.0	22.3	25.2	0.0	23.8
LnGrp LOS	C	A	B	C	A	B	C	A	C	C	A	C
Approach Vol, veh/h		710			913			309			272	
Approach Delay, s/veh		14.3			17.4			27.5			24.1	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		49.8		27.9		49.8		27.9				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		37.8		21.0		32.9		10.5				
Green Ext Time (p_c), s		5.0		0.9		7.3		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			18.7									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	12	0	0	28	26	7
Future Vol, veh/h	12	0	0	28	26	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	4	13	3
Mvmt Flow	13	0	0	29	27	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	28	7
Stage 1	-	-	-	-	13	-
Stage 2	-	-	-	-	15	-
Critical Hdwy	-	-	-	-	7.06	6.96
Critical Hdwy Stg 1	-	-	-	-	6.06	-
Critical Hdwy Stg 2	-	-	-	-	6.06	-
Follow-up Hdwy	-	-	-	-	3.63	3.33
Pot Cap-1 Maneuver	-	0	0	-	952	1070
Stage 1	-	0	0	-	977	-
Stage 2	-	0	0	-	974	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	952	1070
Mov Cap-2 Maneuver	-	-	-	-	952	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	974	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	952	1070	-	-
HCM Lane V/C Ratio	0.028	0.007	-	-
HCM Control Delay (s)	8.9	8.4	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	651	5	5	916	8	46
Future Vol, veh/h	651	5	5	916	8	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	20	0	2	0	11
Mvmt Flow	708	5	5	996	9	50

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	708	0	1714	708
Stage 1	-	-	-	-	708	-
Stage 2	-	-	-	-	1006	-
Critical Hdwy	-	-	4.1	-	6.4	6.31
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.399
Pot Cap-1 Maneuver	-	0	900	-	100	420
Stage 1	-	0	-	-	492	-
Stage 2	-	0	-	-	357	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	900	-	99	420
Mov Cap-2 Maneuver	-	-	-	-	231	-
Stage 1	-	-	-	-	492	-
Stage 2	-	-	-	-	353	-

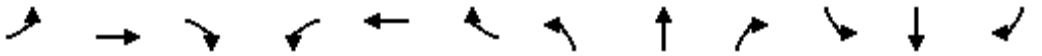
Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	231	420	-	900	-
HCM Lane V/C Ratio	0.038	0.119	-	0.006	-
HCM Control Delay (s)	21.2	14.7	-	9	-
HCM Lane LOS	C	B	-	A	-
HCM 95th %tile Q(veh)	0.1	0.4	-	0	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	369	14	9	377	20	24
Future Volume (veh/h)	369	14	9	377	20	24
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1648	1900	1885	1633	1900
Adj Flow Rate, veh/h	384	15	9	393	21	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	17	0	1	18	0
Cap, veh/h	1440	1067	796	1440	100	104
Arrive On Green	0.76	0.76	0.76	0.76	0.06	0.06
Sat Flow, veh/h	1885	1397	1001	1885	1555	1610
Grp Volume(v), veh/h	384	15	9	393	21	25
Grp Sat Flow(s),veh/h/ln	1885	1397	1001	1885	1555	1610
Q Serve(g_s), s	4.7	0.2	0.2	4.9	1.0	1.2
Cycle Q Clear(g_c), s	4.7	0.2	5.0	4.9	1.0	1.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1440	1067	796	1440	100	104
V/C Ratio(X)	0.27	0.01	0.01	0.27	0.21	0.24
Avail Cap(c_a), veh/h	1440	1067	796	1440	693	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.8	2.2	3.5	2.8	34.8	34.9
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.5	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	0.0	0.1	1.6	0.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.2	2.2	3.5	3.2	35.9	36.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	399			402	46	
Approach Delay, s/veh	3.2			3.2	36.0	
Approach LOS	A			A	D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	67.0	11.6	67.0
Change Period (Y+Rc), s	7.0	6.5	7.0
Max Green Setting (Gmax), s	60.0	35.0	60.0
Max Q Clear Time (g_c+I1), s	6.7	3.2	7.0
Green Ext Time (p_c), s	2.2	0.1	2.3

Intersection Summary	
HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	650	42	56	654	22	45	15	41	25	7	36
Future Volume (veh/h)	40	650	42	56	654	22	45	15	41	25	7	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1826	1870	1870	1870	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	43	691	45	60	696	23	48	16	44	27	7	38
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	5	2	2	2	0	0	0	0	0
Cap, veh/h	89	1198	76	565	1333	44	235	43	118	96	31	74
Arrive On Green	0.74	0.74	0.74	0.74	0.74	0.74	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	58	1617	103	704	1800	59	1361	448	1231	372	322	776
Grp Volume(v), veh/h	779	0	0	60	0	719	48	0	60	72	0	0
Grp Sat Flow(s),veh/h/ln	1777	0	0	704	0	1860	1361	0	1678	1471	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	13.5	0.0	0.0	2.8	1.2	0.0	0.0
Cycle Q Clear(g_c), s	15.3	0.0	0.0	3.1	0.0	13.5	2.1	0.0	2.8	4.0	0.0	0.0
Prop In Lane	0.06		0.06	1.00		0.03	1.00		0.73	0.37		0.53
Lane Grp Cap(c), veh/h	1362	0	0	565	0	1377	235	0	160	201	0	0
V/C Ratio(X)	0.57	0.00	0.00	0.11	0.00	0.52	0.20	0.00	0.37	0.36	0.00	0.00
Avail Cap(c_a), veh/h	1362	0	0	565	0	1377	692	0	723	714	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.8	0.0	0.0	3.2	0.0	4.5	34.7	0.0	34.9	35.4	0.0	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	0.4	0.0	1.4	0.4	0.0	1.4	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.3	0.0	0.0	0.4	0.0	5.5	1.6	0.0	2.1	2.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.5	0.0	0.0	3.6	0.0	5.9	35.1	0.0	36.4	36.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	A
Approach Vol, veh/h		779			779			108			72	
Approach Delay, s/veh		6.5			5.8			35.8			36.4	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		68.0		14.4		68.0		14.4				
Change Period (Y+Rc), s		7.0		6.5		7.0		6.5				
Max Green Setting (Gmax), s		61.0		35.5		61.0		35.5				
Max Q Clear Time (g_c+I1), s		17.3		4.8		15.5		6.0				
Green Ext Time (p_c), s		6.1		0.5		5.7		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			9.2									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	578	153	38	618	82	123	218	48	50	150	47
Future Volume (veh/h)	51	578	153	38	618	82	123	218	48	50	150	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1885	1811	1885	1885	1781	1870	1870	1900	1841	1841
Adj Flow Rate, veh/h	54	608	161	40	651	86	129	229	51	53	158	49
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	1	1	6	1	1	8	2	2	0	4	4
Cap, veh/h	290	804	213	261	912	121	280	383	85	238	349	108
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	709	1436	380	677	1631	215	1119	1481	330	1117	1348	418
Grp Volume(v), veh/h	54	0	769	40	0	737	129	0	280	53	0	207
Grp Sat Flow(s),veh/h/ln	709	0	1817	677	0	1846	1119	0	1811	1117	0	1765
Q Serve(g_s), s	4.3	0.0	23.1	3.4	0.0	20.9	7.8	0.0	9.7	3.1	0.0	7.0
Cycle Q Clear(g_c), s	25.2	0.0	23.1	26.5	0.0	20.9	14.9	0.0	9.7	12.8	0.0	7.0
Prop In Lane	1.00		0.21	1.00		0.12	1.00		0.18	1.00		0.24
Lane Grp Cap(c), veh/h	290	0	1016	261	0	1033	280	0	469	238	0	457
V/C Ratio(X)	0.19	0.00	0.76	0.15	0.00	0.71	0.46	0.00	0.60	0.22	0.00	0.45
Avail Cap(c_a), veh/h	588	0	1779	545	0	1808	460	0	760	418	0	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.8	0.0	12.0	22.2	0.0	11.5	28.5	0.0	23.2	28.9	0.0	22.3
Incr Delay (d2), s/veh	0.3	0.0	1.2	0.3	0.0	0.9	1.2	0.0	1.2	0.5	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	0.0	11.3	0.9	0.0	10.5	3.6	0.0	6.9	1.4	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	0.0	13.2	22.4	0.0	12.5	29.7	0.0	24.5	29.3	0.0	23.0
LnGrp LOS	C	A	B	C	A	B	C	A	C	C	A	C
Approach Vol, veh/h		823			777			409			260	
Approach Delay, s/veh		13.7			13.0			26.1			24.3	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	47.0	24.5	47.0	24.5
Change Period (Y+Rc), s	7.0	6.0	7.0	6.0
Max Green Setting (Gmax), s	70.0	30.0	70.0	30.0
Max Q Clear Time (g_c+I1), s	27.2	16.9	28.5	14.8
Green Ext Time (p_c), s	6.3	1.6	5.7	1.1

Intersection Summary	
HCM 6th Ctrl Delay	16.9
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	5.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	144	0	0	353	190	292
Future Vol, veh/h	144	0	0	353	190	292
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	5	3	2
Mvmt Flow	148	0	0	364	196	301

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	330	74
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	182	-
Critical Hdwy	-	-	-	-	6.86	6.94
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	-	-	3.53	3.32
Pot Cap-1 Maneuver	-	0	0	-	637	973
Stage 1	-	0	0	-	861	-
Stage 2	-	0	0	-	828	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	637	973
Mov Cap-2 Maneuver	-	-	-	-	637	-
Stage 1	-	-	-	-	861	-
Stage 2	-	-	-	-	828	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	637	973	-	-
HCM Lane V/C Ratio	0.307	0.309	-	-
HCM Control Delay (s)	13.1	10.3	-	-
HCM Lane LOS	B	B	-	-
HCM 95th %tile Q(veh)	1.3	1.3	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	709	7	9	725	7	44
Future Vol, veh/h	709	7	9	725	7	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	14	0	2	0	11
Mvmt Flow	771	8	10	788	8	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	771	0	1579	771
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	808	-
Critical Hdwy	-	-	4.1	-	6.4	6.31
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.399
Pot Cap-1 Maneuver	-	0	853	-	122	386
Stage 1	-	0	-	-	460	-
Stage 2	-	0	-	-	442	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	853	-	119	386
Mov Cap-2 Maneuver	-	-	-	-	258	-
Stage 1	-	-	-	-	460	-
Stage 2	-	-	-	-	433	-

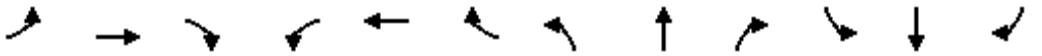
Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	16.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	258	386	-	853	-
HCM Lane V/C Ratio	0.029	0.124	-	0.011	-
HCM Control Delay (s)	19.4	15.6	-	9.3	-
HCM Lane LOS	C	C	-	A	-
HCM 95th %tile Q(veh)	0.1	0.4	-	0	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	378	60	43	218	35	21
Future Volume (veh/h)	378	60	43	218	35	21
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1722	1678	1767	1278	1248
Adj Flow Rate, veh/h	425	67	48	245	39	24
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	12	15	9	42	44
Cap, veh/h	1355	1101	641	1333	92	80
Arrive On Green	0.75	0.75	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1796	1459	812	1767	1217	1058
Grp Volume(v), veh/h	425	67	48	245	39	24
Grp Sat Flow(s),veh/h/ln	1796	1459	812	1767	1217	1058
Q Serve(g_s), s	6.0	0.9	1.6	3.1	2.4	1.7
Cycle Q Clear(g_c), s	6.0	0.9	7.7	3.1	2.4	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1355	1101	641	1333	92	80
V/C Ratio(X)	0.31	0.06	0.07	0.18	0.42	0.30
Avail Cap(c_a), veh/h	1355	1101	641	1333	536	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.1	2.5	4.4	2.8	35.1	34.8
Incr Delay (d2), s/veh	0.6	0.1	0.2	0.3	3.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.0	0.3	0.4	1.0	1.4	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.7	2.6	4.6	3.1	38.2	36.8
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	492			293	63	
Approach Delay, s/veh	3.6			3.3	37.7	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		12.5		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		8.0		4.4		9.7
Green Ext Time (p_c), s		2.7		0.2		1.6

Intersection Summary	
HCM 6th Ctrl Delay	6.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	649	184	37	277	26	135	134	29	42	179	36
Future Volume (veh/h)	23	649	184	37	277	26	135	134	29	42	179	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1796	1796	1411	1693	1693	1737	1678	1678	1767	1826	1826
Adj Flow Rate, veh/h	26	746	211	43	318	30	155	154	33	48	206	41
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	7	7	33	14	14	11	15	15	9	5	5
Cap, veh/h	550	819	232	119	926	87	230	366	78	268	404	80
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	959	1347	381	443	1523	144	1052	1339	287	1130	1479	294
Grp Volume(v), veh/h	26	0	957	43	0	348	155	0	187	48	0	247
Grp Sat Flow(s),veh/h/ln	959	0	1728	443	0	1667	1052	0	1626	1130	0	1773
Q Serve(g_s), s	1.5	0.0	53.4	10.4	0.0	11.3	16.0	0.0	10.4	4.0	0.0	12.9
Cycle Q Clear(g_c), s	12.9	0.0	53.4	63.8	0.0	11.3	28.9	0.0	10.4	14.3	0.0	12.9
Prop In Lane	1.00		0.22	1.00		0.09	1.00		0.18	1.00		0.17
Lane Grp Cap(c), veh/h	550	0	1050	119	0	1013	230	0	445	268	0	485
V/C Ratio(X)	0.05	0.00	0.91	0.36	0.00	0.34	0.67	0.00	0.42	0.18	0.00	0.51
Avail Cap(c_a), veh/h	579	0	1103	133	0	1064	230	0	445	268	0	485
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.8	0.0	18.9	46.9	0.0	10.7	45.8	0.0	32.7	38.6	0.0	33.6
Incr Delay (d2), s/veh	0.0	0.0	10.9	1.8	0.0	0.2	7.6	0.0	0.6	0.3	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.0	28.2	2.1	0.0	6.6	8.0	0.0	7.2	2.0	0.0	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.9	0.0	29.8	48.7	0.0	10.9	53.4	0.0	33.3	38.9	0.0	34.5
LnGrp LOS	B	A	C	D	A	B	D	A	C	D	A	C
Approach Vol, veh/h		983			391			342			295	
Approach Delay, s/veh		29.4			15.0			42.4			35.2	
Approach LOS		C			B			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		73.7		36.0		73.7		36.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		55.4		30.9		65.8		16.3				
Green Ext Time (p_c), s		6.0		0.0		0.9		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			29.7									
HCM 6th LOS			C									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	756	26	47	370	5	12
Future Volume (veh/h)	756	26	47	370	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1811	1693	1693	1604	1278
Adj Flow Rate, veh/h	822	28	51	402	5	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	14	14	20	42
Cap, veh/h	1370	47	145	1067	51	36
Arrive On Green	0.79	0.79	0.79	0.79	0.03	0.03
Sat Flow, veh/h	1741	59	116	1357	1527	1083
Grp Volume(v), veh/h	0	850	453	0	5	13
Grp Sat Flow(s),veh/h/ln	0	1800	1473	0	1527	1083
Q Serve(g_s), s	0.0	14.3	0.0	0.0	0.2	0.9
Cycle Q Clear(g_c), s	0.0	14.3	5.8	0.0	0.2	0.9
Prop In Lane		0.03	0.11		1.00	1.00
Lane Grp Cap(c), veh/h	0	1416	1212	0	51	36
V/C Ratio(X)	0.00	0.60	0.37	0.00	0.10	0.36
Avail Cap(c_a), veh/h	0	1416	1212	0	733	520
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	3.2	2.3	0.0	35.2	35.5
Incr Delay (d2), s/veh	0.0	1.9	0.9	0.0	0.8	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	3.3	1.3	0.0	0.2	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.1	3.2	0.0	36.0	41.4
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	850			453	18	
Approach Delay, s/veh	5.1			3.2	39.9	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		66.0		9.0		66.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		59.0		36.0		59.0
Max Q Clear Time (g_c+I1), s		16.3		2.9		7.8
Green Ext Time (p_c), s		6.7		0.0		3.2

Intersection Summary	
HCM 6th Ctrl Delay	4.9
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	749	17	11	346	18	8	0	5	28	1	43
Future Vol, veh/h	15	749	17	11	346	18	8	0	5	28	1	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	6	10	20	14	14	0	0	50	0	0	0
Mvmt Flow	16	797	18	12	368	19	9	0	5	30	1	46

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	387	0	0	815	0	0	1263	1249	806	1243	1249	378
Stage 1	-	-	-	-	-	-	838	838	-	402	402	-
Stage 2	-	-	-	-	-	-	425	411	-	841	847	-
Critical Hdwy	4.1	-	-	4.3	-	-	7.1	6.5	6.7	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.38	-	-	3.5	4	3.75	3.5	4	3.3
Pot Cap-1 Maneuver	1183	-	-	739	-	-	148	175	317	153	175	673
Stage 1	-	-	-	-	-	-	364	384	-	629	604	-
Stage 2	-	-	-	-	-	-	611	598	-	362	381	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1183	-	-	739	-	-	132	167	317	145	167	673
Mov Cap-2 Maneuver	-	-	-	-	-	-	132	167	-	145	167	-
Stage 1	-	-	-	-	-	-	355	374	-	613	591	-
Stage 2	-	-	-	-	-	-	557	585	-	347	371	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	27.4	23.2
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	132	317	1183	-	-	739	-	-	274
HCM Lane V/C Ratio	0.064	0.017	0.013	-	-	0.016	-	-	0.28
HCM Control Delay (s)	34.1	16.6	8.1	0	-	9.9	0	-	23.2
HCM Lane LOS	D	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0.1	0	-	-	0	-	-	1.1

Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	42	0	0	43	70	14
Future Vol, veh/h	42	0	0	43	70	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	14	0	0	9	12	4
Mvmt Flow	46	0	0	47	76	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	70	23
Stage 1	-	-	-	-	46	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	-	-	-	-	7.04	6.98
Critical Hdwy Stg 1	-	-	-	-	6.04	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	-	-	3.62	3.34
Pot Cap-1 Maneuver	-	0	0	-	898	1042
Stage 1	-	0	0	-	942	-
Stage 2	-	0	0	-	967	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	898	1042
Mov Cap-2 Maneuver	-	-	-	-	898	-
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	967	-

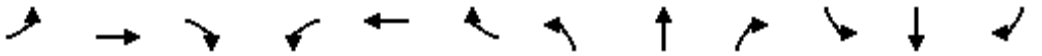
Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	898	1042	-	-
HCM Lane V/C Ratio	0.085	0.015	-	-
HCM Control Delay (s)	9.4	8.5	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.3	0	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	301	13	25	483	115	123
Future Volume (veh/h)	301	13	25	483	115	123
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1159	1559	1870	1885	1900
Adj Flow Rate, veh/h	327	14	27	525	125	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	50	23	2	1	0
Cap, veh/h	1364	711	663	1353	204	183
Arrive On Green	0.72	0.72	0.72	0.72	0.11	0.11
Sat Flow, veh/h	1885	982	867	1870	1795	1610
Grp Volume(v), veh/h	327	14	27	525	125	134
Grp Sat Flow(s),veh/h/ln	1885	982	867	1870	1795	1610
Q Serve(g_s), s	4.8	0.3	0.9	8.9	5.5	6.7
Cycle Q Clear(g_c), s	4.8	0.3	5.7	8.9	5.5	6.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1364	711	663	1353	204	183
V/C Ratio(X)	0.24	0.02	0.04	0.39	0.61	0.73
Avail Cap(c_a), veh/h	1364	711	663	1353	758	680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.8	3.2	4.8	4.4	35.0	35.5
Incr Delay (d2), s/veh	0.4	0.1	0.1	0.8	3.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	0.1	0.2	4.0	4.5	5.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.3	3.3	4.9	5.2	38.0	41.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	341			552	259	
Approach Delay, s/veh	4.2			5.2	39.6	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		15.9		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		6.8		8.7		10.9
Green Ext Time (p_c), s		1.8		0.8		3.4

Intersection Summary		
HCM 6th Ctrl Delay	12.6	
HCM 6th LOS	B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	489	152	40	796	40	149	105	43	46	180	35
Future Volume (veh/h)	41	489	152	40	796	40	149	105	43	46	180	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1870	1870	1737	1870	1870	1796	1841	1841	1870	1737	1737
Adj Flow Rate, veh/h	43	509	158	42	829	42	155	109	45	48	188	36
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	2	2	11	2	2	7	4	4	2	11	11
Cap, veh/h	188	754	234	296	972	49	284	349	144	355	399	76
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	621	1369	425	715	1765	89	1111	1238	511	1233	1417	271
Grp Volume(v), veh/h	43	0	667	42	0	871	155	0	154	48	0	224
Grp Sat Flow(s),veh/h/ln	621	0	1794	715	0	1854	1111	0	1749	1233	0	1688
Q Serve(g_s), s	4.9	0.0	20.6	3.5	0.0	30.9	10.4	0.0	5.4	2.5	0.0	8.5
Cycle Q Clear(g_c), s	35.8	0.0	20.6	24.1	0.0	30.9	19.0	0.0	5.4	7.9	0.0	8.5
Prop In Lane	1.00		0.24	1.00		0.05	1.00		0.29	1.00		0.16
Lane Grp Cap(c), veh/h	188	0	988	296	0	1022	284	0	493	355	0	476
V/C Ratio(X)	0.23	0.00	0.67	0.14	0.00	0.85	0.55	0.00	0.31	0.14	0.00	0.47
Avail Cap(c_a), veh/h	405	0	1617	547	0	1671	400	0	675	483	0	652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.9	0.0	12.5	21.1	0.0	14.8	31.0	0.0	22.0	25.1	0.0	23.1
Incr Delay (d2), s/veh	0.6	0.0	0.8	0.2	0.0	2.5	1.6	0.0	0.4	0.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.0	10.7	1.0	0.0	15.7	4.9	0.0	3.7	1.2	0.0	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	0.0	13.3	21.3	0.0	17.2	32.6	0.0	22.3	25.2	0.0	23.8
LnGrp LOS	C	A	B	C	A	B	C	A	C	C	A	C
Approach Vol, veh/h		710			913			309			272	
Approach Delay, s/veh		14.3			17.4			27.5			24.1	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		49.8		27.9		49.8		27.9				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		37.8		21.0		32.9		10.5				
Green Ext Time (p_c), s		5.0		0.9		7.3		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			18.7									
HCM 6th LOS			B									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	651	7	12	909	25	46
Future Volume (veh/h)	651	7	12	909	25	46
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1841	1737
Adj Flow Rate, veh/h	708	8	13	988	27	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	4	11
Cap, veh/h	1383	16	52	1385	144	121
Arrive On Green	0.75	0.75	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1846	21	9	1849	1753	1472
Grp Volume(v), veh/h	0	716	1001	0	27	50
Grp Sat Flow(s),veh/h/ln	0	1867	1857	0	1753	1472
Q Serve(g_s), s	0.0	12.5	0.0	0.0	1.1	2.6
Cycle Q Clear(g_c), s	0.0	12.5	23.1	0.0	1.1	2.6
Prop In Lane		0.01	0.01		1.00	1.00
Lane Grp Cap(c), veh/h	0	1399	1437	0	144	121
V/C Ratio(X)	0.00	0.51	0.70	0.00	0.19	0.41
Avail Cap(c_a), veh/h	0	1399	1437	0	766	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.1	5.4	0.0	34.3	34.9
Incr Delay (d2), s/veh	0.0	1.3	2.8	0.0	0.6	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	4.7	8.6	0.0	0.9	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.4	8.2	0.0	34.9	37.2
LnGrp LOS	A	A	A	A	C	D
Approach Vol, veh/h	716			1001	77	
Approach Delay, s/veh	5.4			8.2	36.4	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		13.1		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		14.5		4.6		25.1
Green Ext Time (p_c), s		5.0		0.2		8.8

Intersection Summary	
HCM 6th Ctrl Delay	8.3
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱			↕	
Traffic Vol, veh/h	26	593	35	42	854	38	39	7	37	28	6	28
Future Vol, veh/h	26	593	35	42	854	38	39	7	37	28	6	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	2	0	4	2	3	0	0	0	4	0	0
Mvmt Flow	27	605	36	43	871	39	40	7	38	29	6	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	910	0	0	641	0	0	1671	1673	623	1677	1672	891
Stage 1	-	-	-	-	-	-	677	677	-	977	977	-
Stage 2	-	-	-	-	-	-	994	996	-	700	695	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.1	6.5	6.2	7.14	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.5	4	3.3	3.536	4	3.3
Pot Cap-1 Maneuver	757	-	-	934	-	-	77	97	490	75	97	344
Stage 1	-	-	-	-	-	-	446	455	-	299	332	-
Stage 2	-	-	-	-	-	-	298	325	-	427	447	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	757	-	-	934	-	-	59	83	490	58	83	344
Mov Cap-2 Maneuver	-	-	-	-	-	-	59	83	-	58	83	-
Stage 1	-	-	-	-	-	-	421	430	-	282	301	-
Stage 2	-	-	-	-	-	-	243	294	-	366	422	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.4	80.1	94.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	59	275	757	-	-	934	-	-	97
HCM Lane V/C Ratio	0.675	0.163	0.035	-	-	0.046	-	-	0.652
HCM Control Delay (s)	147.3	20.6	9.9	0	-	9	0	-	94.3
HCM Lane LOS	F	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	2.8	0.6	0.1	-	-	0.1	-	-	3.2

Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	12	0	0	28	26	7
Future Vol, veh/h	12	0	0	28	26	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	4	13	3
Mvmt Flow	13	0	0	29	27	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	28	7
Stage 1	-	-	-	-	13	-
Stage 2	-	-	-	-	15	-
Critical Hdwy	-	-	-	-	7.06	6.96
Critical Hdwy Stg 1	-	-	-	-	6.06	-
Critical Hdwy Stg 2	-	-	-	-	6.06	-
Follow-up Hdwy	-	-	-	-	3.63	3.33
Pot Cap-1 Maneuver	-	0	0	-	952	1070
Stage 1	-	0	0	-	977	-
Stage 2	-	0	0	-	974	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	952	1070
Mov Cap-2 Maneuver	-	-	-	-	952	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	974	-

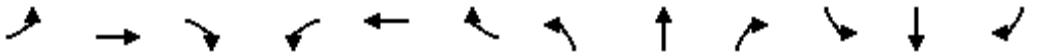
Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	952	1070	-	-
HCM Lane V/C Ratio	0.028	0.007	-	-
HCM Control Delay (s)	8.9	8.4	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	369	14	9	377	20	24
Future Volume (veh/h)	369	14	9	377	20	24
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1648	1900	1885	1633	1900
Adj Flow Rate, veh/h	384	15	9	393	21	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	17	0	1	18	0
Cap, veh/h	1440	1067	796	1440	100	104
Arrive On Green	0.76	0.76	0.76	0.76	0.06	0.06
Sat Flow, veh/h	1885	1397	1001	1885	1555	1610
Grp Volume(v), veh/h	384	15	9	393	21	25
Grp Sat Flow(s),veh/h/ln	1885	1397	1001	1885	1555	1610
Q Serve(g_s), s	4.7	0.2	0.2	4.9	1.0	1.2
Cycle Q Clear(g_c), s	4.7	0.2	5.0	4.9	1.0	1.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1440	1067	796	1440	100	104
V/C Ratio(X)	0.27	0.01	0.01	0.27	0.21	0.24
Avail Cap(c_a), veh/h	1440	1067	796	1440	693	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.8	2.2	3.5	2.8	34.8	34.9
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.5	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	0.0	0.1	1.6	0.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.2	2.2	3.5	3.2	35.9	36.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	399			402	46	
Approach Delay, s/veh	3.2			3.2	36.0	
Approach LOS	A			A	D	

Timer - Assigned Phs	2		4		6
Phs Duration (G+Y+Rc), s	67.0		11.6		67.0
Change Period (Y+Rc), s	7.0		6.5		7.0
Max Green Setting (Gmax), s	60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s	6.7		3.2		7.0
Green Ext Time (p_c), s	2.2		0.1		2.3

Intersection Summary	
HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	578	153	38	618	82	123	218	48	50	150	47
Future Volume (veh/h)	51	578	153	38	618	82	123	218	48	50	150	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1885	1811	1885	1885	1781	1870	1870	1900	1841	1841
Adj Flow Rate, veh/h	54	608	161	40	651	86	129	229	51	53	158	49
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	1	1	6	1	1	8	2	2	0	4	4
Cap, veh/h	290	804	213	261	912	121	280	383	85	238	349	108
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	709	1436	380	677	1631	215	1119	1481	330	1117	1348	418
Grp Volume(v), veh/h	54	0	769	40	0	737	129	0	280	53	0	207
Grp Sat Flow(s),veh/h/ln	709	0	1817	677	0	1846	1119	0	1811	1117	0	1765
Q Serve(g_s), s	4.3	0.0	23.1	3.4	0.0	20.9	7.8	0.0	9.7	3.1	0.0	7.0
Cycle Q Clear(g_c), s	25.2	0.0	23.1	26.5	0.0	20.9	14.9	0.0	9.7	12.8	0.0	7.0
Prop In Lane	1.00		0.21	1.00		0.12	1.00		0.18	1.00		0.24
Lane Grp Cap(c), veh/h	290	0	1016	261	0	1033	280	0	469	238	0	457
V/C Ratio(X)	0.19	0.00	0.76	0.15	0.00	0.71	0.46	0.00	0.60	0.22	0.00	0.45
Avail Cap(c_a), veh/h	588	0	1779	545	0	1808	460	0	760	418	0	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.8	0.0	12.0	22.2	0.0	11.5	28.5	0.0	23.2	28.9	0.0	22.3
Incr Delay (d2), s/veh	0.3	0.0	1.2	0.3	0.0	0.9	1.2	0.0	1.2	0.5	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	0.0	11.3	0.9	0.0	10.5	3.6	0.0	6.9	1.4	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	0.0	13.2	22.4	0.0	12.5	29.7	0.0	24.5	29.3	0.0	23.0
LnGrp LOS	C	A	B	C	A	B	C	A	C	C	A	C
Approach Vol, veh/h		823			777			409			260	
Approach Delay, s/veh		13.7			13.0			26.1			24.3	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.0		24.5		47.0		24.5				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		27.2		16.9		28.5		14.8				
Green Ext Time (p_c), s		6.3		1.6		5.7		1.1				

Intersection Summary												
HCM 6th Ctrl Delay			16.9									
HCM 6th LOS			B									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	709	11	21	713	23	44
Future Volume (veh/h)	709	11	21	713	23	44
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1885	1870	1870	1841	1737
Adj Flow Rate, veh/h	771	12	23	775	25	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	2	2	4	11
Cap, veh/h	1390	22	64	1356	141	118
Arrive On Green	0.75	0.75	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1851	29	24	1806	1753	1472
Grp Volume(v), veh/h	0	783	798	0	25	48
Grp Sat Flow(s),veh/h/ln	0	1880	1830	0	1753	1472
Q Serve(g_s), s	0.0	14.2	0.0	0.0	1.1	2.5
Cycle Q Clear(g_c), s	0.0	14.2	14.8	0.0	1.1	2.5
Prop In Lane		0.02	0.03		1.00	1.00
Lane Grp Cap(c), veh/h	0	1411	1420	0	141	118
V/C Ratio(X)	0.00	0.55	0.56	0.00	0.18	0.41
Avail Cap(c_a), veh/h	0	1411	1420	0	768	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.3	4.3	0.0	34.3	34.9
Incr Delay (d2), s/veh	0.0	1.6	1.6	0.0	0.6	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	5.3	5.5	0.0	0.8	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.8	5.9	0.0	34.9	37.2
LnGrp LOS	A	A	A	A	C	D
Approach Vol, veh/h	783			798	73	
Approach Delay, s/veh	5.8			5.9	36.4	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		12.9		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		16.2		4.5		16.8
Green Ext Time (p_c), s		5.7		0.2		6.1

Intersection Summary	
HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱			↕	
Traffic Vol, veh/h	40	650	42	44	662	30	37	7	41	29	3	36
Future Vol, veh/h	40	650	42	44	662	30	37	7	41	29	3	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	5	1	0	0	2	5	0	0	0	8	0	0
Mvmt Flow	43	691	45	47	704	32	39	7	44	31	3	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	736	0	0	736	0	0	1635	1630	714	1639	1636	720
Stage 1	-	-	-	-	-	-	800	800	-	814	814	-
Stage 2	-	-	-	-	-	-	835	830	-	825	822	-
Critical Hdwy	4.15	-	-	4.1	-	-	7.1	6.5	6.2	7.18	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Follow-up Hdwy	2.245	-	-	2.2	-	-	3.5	4	3.3	3.572	4	3.3
Pot Cap-1 Maneuver	856	-	-	879	-	-	82	103	435	78	102	431
Stage 1	-	-	-	-	-	-	382	400	-	363	394	-
Stage 2	-	-	-	-	-	-	365	388	-	358	391	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	856	-	-	879	-	-	63	86	435	57	85	431
Mov Cap-2 Maneuver	-	-	-	-	-	-	63	86	-	57	85	-
Stage 1	-	-	-	-	-	-	349	366	-	332	358	-
Stage 2	-	-	-	-	-	-	300	353	-	288	357	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.6	68.6	88.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	63	273	856	-	-	879	-	-	108
HCM Lane V/C Ratio	0.625	0.187	0.05	-	-	0.053	-	-	0.67
HCM Control Delay (s)	130	21.2	9.4	0	-	9.3	0	-	88.8
HCM Lane LOS	F	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	2.6	0.7	0.2	-	-	0.2	-	-	3.4

Intersection	
Int Delay, s/veh	5.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	144	0	0	353	190	292
Future Vol, veh/h	144	0	0	353	190	292
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	5	3	2
Mvmt Flow	148	0	0	364	196	301

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	330	74
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	182	-
Critical Hdwy	-	-	-	-	6.86	6.94
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	-	-	3.53	3.32
Pot Cap-1 Maneuver	-	0	0	-	637	973
Stage 1	-	0	0	-	861	-
Stage 2	-	0	0	-	828	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	637	973
Mov Cap-2 Maneuver	-	-	-	-	637	-
Stage 1	-	-	-	-	861	-
Stage 2	-	-	-	-	828	-

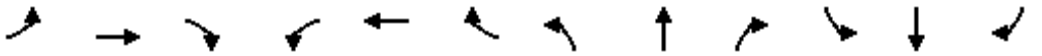
Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	637	973	-	-
HCM Lane V/C Ratio	0.307	0.309	-	-
HCM Control Delay (s)	13.1	10.3	-	-
HCM Lane LOS	B	B	-	-
HCM 95th %tile Q(veh)	1.3	1.3	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	378	60	43	218	35	21
Future Volume (veh/h)	378	60	43	218	35	21
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1722	1678	1767	1278	1248
Adj Flow Rate, veh/h	425	67	48	245	39	24
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	12	15	9	42	44
Cap, veh/h	1355	1101	641	1333	92	80
Arrive On Green	0.75	0.75	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1796	1459	812	1767	1217	1058
Grp Volume(v), veh/h	425	67	48	245	39	24
Grp Sat Flow(s),veh/h/ln	1796	1459	812	1767	1217	1058
Q Serve(g_s), s	6.0	0.9	1.6	3.1	2.4	1.7
Cycle Q Clear(g_c), s	6.0	0.9	7.7	3.1	2.4	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1355	1101	641	1333	92	80
V/C Ratio(X)	0.31	0.06	0.07	0.18	0.42	0.30
Avail Cap(c_a), veh/h	1355	1101	641	1333	536	466
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.1	2.5	4.4	2.8	35.1	34.8
Incr Delay (d2), s/veh	0.6	0.1	0.2	0.3	3.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.0	0.3	0.4	1.0	1.4	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.7	2.6	4.6	3.1	38.2	36.8
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	492			293	63	
Approach Delay, s/veh	3.6			3.3	37.7	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		12.5		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		8.0		4.4		9.7
Green Ext Time (p_c), s		2.7		0.2		1.6

Intersection Summary	
HCM 6th Ctrl Delay	6.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	649	184	37	277	26	135	134	29	42	179	36
Future Volume (veh/h)	23	649	184	37	277	26	135	134	29	42	179	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1796	1796	1411	1693	1693	1737	1678	1678	1767	1826	1826
Adj Flow Rate, veh/h	26	746	211	43	318	30	155	154	33	48	206	41
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	7	7	33	14	14	11	15	15	9	5	5
Cap, veh/h	550	819	232	119	926	87	230	366	78	268	404	80
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	959	1347	381	443	1523	144	1052	1339	287	1130	1479	294
Grp Volume(v), veh/h	26	0	957	43	0	348	155	0	187	48	0	247
Grp Sat Flow(s),veh/h/ln	959	0	1728	443	0	1667	1052	0	1626	1130	0	1773
Q Serve(g_s), s	1.5	0.0	53.4	10.4	0.0	11.3	16.0	0.0	10.4	4.0	0.0	12.9
Cycle Q Clear(g_c), s	12.9	0.0	53.4	63.8	0.0	11.3	28.9	0.0	10.4	14.3	0.0	12.9
Prop In Lane	1.00		0.22	1.00		0.09	1.00		0.18	1.00		0.17
Lane Grp Cap(c), veh/h	550	0	1050	119	0	1013	230	0	445	268	0	485
V/C Ratio(X)	0.05	0.00	0.91	0.36	0.00	0.34	0.67	0.00	0.42	0.18	0.00	0.51
Avail Cap(c_a), veh/h	579	0	1103	133	0	1064	230	0	445	268	0	485
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.8	0.0	18.9	46.9	0.0	10.7	45.8	0.0	32.7	38.6	0.0	33.6
Incr Delay (d2), s/veh	0.0	0.0	10.9	1.8	0.0	0.2	7.6	0.0	0.6	0.3	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.0	28.2	2.1	0.0	6.6	8.0	0.0	7.2	2.0	0.0	9.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.9	0.0	29.8	48.7	0.0	10.9	53.4	0.0	33.3	38.9	0.0	34.5
LnGrp LOS	B	A	C	D	A	B	D	A	C	D	A	C
Approach Vol, veh/h		983			391			342			295	
Approach Delay, s/veh		29.4			15.0			42.4			35.2	
Approach LOS		C			B			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		73.7		36.0		73.7		36.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		55.4		30.9		65.8		16.3				
Green Ext Time (p_c), s		6.0		0.0		0.9		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			29.7									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱		↰	↱			↕	
Traffic Vol, veh/h	15	749	17	11	346	18	8	0	5	28	1	43
Future Vol, veh/h	15	749	17	11	346	18	8	0	5	28	1	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	6	10	20	14	14	0	0	50	0	0	0
Mvmt Flow	16	797	18	12	368	19	9	0	5	30	1	46

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	387	0	0	815	0	0	1263	1249	806	1243	1249	378
Stage 1	-	-	-	-	-	-	838	838	-	402	402	-
Stage 2	-	-	-	-	-	-	425	411	-	841	847	-
Critical Hdwy	4.1	-	-	4.3	-	-	7.1	6.5	6.7	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.38	-	-	3.5	4	3.75	3.5	4	3.3
Pot Cap-1 Maneuver	1183	-	-	739	-	-	148	175	317	153	175	673
Stage 1	-	-	-	-	-	-	364	384	-	629	604	-
Stage 2	-	-	-	-	-	-	611	598	-	362	381	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1183	-	-	739	-	-	133	168	317	146	168	673
Mov Cap-2 Maneuver	-	-	-	-	-	-	133	168	-	146	168	-
Stage 1	-	-	-	-	-	-	355	374	-	613	594	-
Stage 2	-	-	-	-	-	-	559	588	-	347	371	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	27.2	23.1
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	133	317	1183	-	-	739	-	-	275
HCM Lane V/C Ratio	0.064	0.017	0.013	-	-	0.016	-	-	0.279
HCM Control Delay (s)	33.9	16.6	8.1	0	-	9.9	-	-	23.1
HCM Lane LOS	D	C	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	0	-	-	0	-	-	1.1

Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	42	0	0	43	70	14
Future Vol, veh/h	42	0	0	43	70	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	14	0	0	9	12	4
Mvmt Flow	46	0	0	47	76	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	70	23
Stage 1	-	-	-	-	46	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	-	-	-	-	7.04	6.98
Critical Hdwy Stg 1	-	-	-	-	6.04	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	-	-	3.62	3.34
Pot Cap-1 Maneuver	-	0	0	-	898	1042
Stage 1	-	0	0	-	942	-
Stage 2	-	0	0	-	967	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	898	1042
Mov Cap-2 Maneuver	-	-	-	-	898	-
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	967	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	898	1042	-	-
HCM Lane V/C Ratio	0.085	0.015	-	-
HCM Control Delay (s)	9.4	8.5	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.3	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	756	26	47	370	5	12
Future Vol, veh/h	756	26	47	370	5	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	4	9	14	20	42
Mvmt Flow	822	28	51	402	5	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	822	0	1326	822
Stage 1	-	-	-	-	822	-
Stage 2	-	-	-	-	504	-
Critical Hdwy	-	-	4.19	-	6.6	6.62
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	5.6	-
Follow-up Hdwy	-	-	2.281	-	3.68	3.678
Pot Cap-1 Maneuver	-	0	778	-	157	319
Stage 1	-	0	-	-	403	-
Stage 2	-	0	-	-	572	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	778	-	144	319
Mov Cap-2 Maneuver	-	-	-	-	272	-
Stage 1	-	-	-	-	403	-
Stage 2	-	-	-	-	524	-

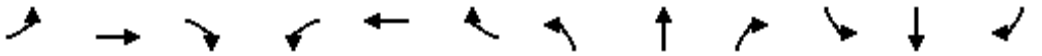
Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	17.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	272	319	-	778	-
HCM Lane V/C Ratio	0.02	0.041	-	0.066	-
HCM Control Delay (s)	18.5	16.8	-	10	-
HCM Lane LOS	C	C	-	A	-
HCM 95th %tile Q(veh)	0.1	0.1	-	0.2	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	301	13	25	483	115	123
Future Volume (veh/h)	301	13	25	483	115	123
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1159	1559	1870	1885	1900
Adj Flow Rate, veh/h	327	14	27	525	125	134
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	50	23	2	1	0
Cap, veh/h	1364	711	663	1353	204	183
Arrive On Green	0.72	0.72	0.72	0.72	0.11	0.11
Sat Flow, veh/h	1885	982	867	1870	1795	1610
Grp Volume(v), veh/h	327	14	27	525	125	134
Grp Sat Flow(s),veh/h/ln	1885	982	867	1870	1795	1610
Q Serve(g_s), s	4.8	0.3	0.9	8.9	5.5	6.7
Cycle Q Clear(g_c), s	4.8	0.3	5.7	8.9	5.5	6.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1364	711	663	1353	204	183
V/C Ratio(X)	0.24	0.02	0.04	0.39	0.61	0.73
Avail Cap(c_a), veh/h	1364	711	663	1353	758	680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.8	3.2	4.8	4.4	35.0	35.5
Incr Delay (d2), s/veh	0.4	0.1	0.1	0.8	3.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	0.1	0.2	4.0	4.5	5.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.3	3.3	4.9	5.2	38.0	41.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	341			552	259	
Approach Delay, s/veh	4.2			5.2	39.6	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		15.9		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		6.8		8.7		10.9
Green Ext Time (p_c), s		1.8		0.8		3.4

Intersection Summary	
HCM 6th Ctrl Delay	12.6
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	489	152	40	796	40	149	105	43	46	180	35
Future Volume (veh/h)	41	489	152	40	796	40	149	105	43	46	180	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1870	1870	1737	1870	1870	1796	1841	1841	1870	1737	1737
Adj Flow Rate, veh/h	43	509	158	42	829	42	155	109	45	48	188	36
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	2	2	11	2	2	7	4	4	2	11	11
Cap, veh/h	188	754	234	296	972	49	284	349	144	355	399	76
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	621	1369	425	715	1765	89	1111	1238	511	1233	1417	271
Grp Volume(v), veh/h	43	0	667	42	0	871	155	0	154	48	0	224
Grp Sat Flow(s),veh/h/ln	621	0	1794	715	0	1854	1111	0	1749	1233	0	1688
Q Serve(g_s), s	4.9	0.0	20.6	3.5	0.0	30.9	10.4	0.0	5.4	2.5	0.0	8.5
Cycle Q Clear(g_c), s	35.8	0.0	20.6	24.1	0.0	30.9	19.0	0.0	5.4	7.9	0.0	8.5
Prop In Lane	1.00		0.24	1.00		0.05	1.00		0.29	1.00		0.16
Lane Grp Cap(c), veh/h	188	0	988	296	0	1022	284	0	493	355	0	476
V/C Ratio(X)	0.23	0.00	0.67	0.14	0.00	0.85	0.55	0.00	0.31	0.14	0.00	0.47
Avail Cap(c_a), veh/h	405	0	1617	547	0	1671	400	0	675	483	0	652
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.9	0.0	12.5	21.1	0.0	14.8	31.0	0.0	22.0	25.1	0.0	23.1
Incr Delay (d2), s/veh	0.6	0.0	0.8	0.2	0.0	2.5	1.6	0.0	0.4	0.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.0	10.7	1.0	0.0	15.7	4.9	0.0	3.7	1.2	0.0	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	0.0	13.3	21.3	0.0	17.2	32.6	0.0	22.3	25.2	0.0	23.8
LnGrp LOS	C	A	B	C	A	B	C	A	C	C	A	C
Approach Vol, veh/h		710			913			309			272	
Approach Delay, s/veh		14.3			17.4			27.5			24.1	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		49.8		27.9		49.8		27.9				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		37.8		21.0		32.9		10.5				
Green Ext Time (p_c), s		5.0		0.9		7.3		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			18.7									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↑		↰	↑			↕	
Traffic Vol, veh/h	26	593	35	42	854	38	39	7	37	28	6	28
Future Vol, veh/h	26	593	35	42	854	38	39	7	37	28	6	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	2	0	4	2	3	0	0	0	4	0	0
Mvmt Flow	27	605	36	43	871	39	40	7	38	29	6	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	910	0	0	641	0	0	1671	1673	623	1677	1672	891
Stage 1	-	-	-	-	-	-	677	677	-	977	977	-
Stage 2	-	-	-	-	-	-	994	996	-	700	695	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.1	6.5	6.2	7.14	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.5	4	3.3	3.536	4	3.3
Pot Cap-1 Maneuver	757	-	-	934	-	-	77	97	490	75	97	344
Stage 1	-	-	-	-	-	-	446	455	-	299	332	-
Stage 2	-	-	-	-	-	-	298	325	-	427	447	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	757	-	-	934	-	-	62	87	490	60	87	344
Mov Cap-2 Maneuver	-	-	-	-	-	-	62	87	-	60	87	-
Stage 1	-	-	-	-	-	-	421	430	-	282	317	-
Stage 2	-	-	-	-	-	-	256	310	-	366	422	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.4	74.1	89
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	62	282	757	-	-	934	-	-	100
HCM Lane V/C Ratio	0.642	0.159	0.035	-	-	0.046	-	-	0.633
HCM Control Delay (s)	135	20.2	9.9	0	-	9	-	-	89
HCM Lane LOS	F	C	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	2.7	0.6	0.1	-	-	0.1	-	-	3.1

Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	12	0	0	28	26	7
Future Vol, veh/h	12	0	0	28	26	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	4	13	3
Mvmt Flow	13	0	0	29	27	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	28	7
Stage 1	-	-	-	-	13	-
Stage 2	-	-	-	-	15	-
Critical Hdwy	-	-	-	-	7.06	6.96
Critical Hdwy Stg 1	-	-	-	-	6.06	-
Critical Hdwy Stg 2	-	-	-	-	6.06	-
Follow-up Hdwy	-	-	-	-	3.63	3.33
Pot Cap-1 Maneuver	-	0	0	-	952	1070
Stage 1	-	0	0	-	977	-
Stage 2	-	0	0	-	974	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	952	1070
Mov Cap-2 Maneuver	-	-	-	-	952	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	974	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	952	1070	-	-
HCM Lane V/C Ratio	0.028	0.007	-	-
HCM Control Delay (s)	8.9	8.4	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	651	7	12	909	25	46
Future Vol, veh/h	651	7	12	909	25	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	4	17	2	4	11
Mvmt Flow	708	8	13	988	27	50

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	708	0	1722	708
Stage 1	-	-	-	-	708	-
Stage 2	-	-	-	-	1014	-
Critical Hdwy	-	-	4.27	-	6.44	6.31
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.353	-	3.536	3.399
Pot Cap-1 Maneuver	-	0	825	-	97	420
Stage 1	-	0	-	-	485	-
Stage 2	-	0	-	-	347	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	825	-	94	420
Mov Cap-2 Maneuver	-	-	-	-	222	-
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	335	-

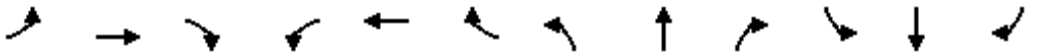
Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	17.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	222	420	-	825	-
HCM Lane V/C Ratio	0.122	0.119	-	0.016	-
HCM Control Delay (s)	23.5	14.7	-	9.4	-
HCM Lane LOS	C	B	-	A	-
HCM 95th %tile Q(veh)	0.4	0.4	-	0	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	369	14	9	377	20	24
Future Volume (veh/h)	369	14	9	377	20	24
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1648	1900	1885	1633	1900
Adj Flow Rate, veh/h	384	15	9	393	21	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	17	0	1	18	0
Cap, veh/h	1440	1067	796	1440	100	104
Arrive On Green	0.76	0.76	0.76	0.76	0.06	0.06
Sat Flow, veh/h	1885	1397	1001	1885	1555	1610
Grp Volume(v), veh/h	384	15	9	393	21	25
Grp Sat Flow(s),veh/h/ln	1885	1397	1001	1885	1555	1610
Q Serve(g_s), s	4.7	0.2	0.2	4.9	1.0	1.2
Cycle Q Clear(g_c), s	4.7	0.2	5.0	4.9	1.0	1.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1440	1067	796	1440	100	104
V/C Ratio(X)	0.27	0.01	0.01	0.27	0.21	0.24
Avail Cap(c_a), veh/h	1440	1067	796	1440	693	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.8	2.2	3.5	2.8	34.8	34.9
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.5	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	0.0	0.1	1.6	0.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.2	2.2	3.5	3.2	35.9	36.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	399			402	46	
Approach Delay, s/veh	3.2			3.2	36.0	
Approach LOS	A			A	D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	67.0	11.6	67.0
Change Period (Y+Rc), s	7.0	6.5	7.0
Max Green Setting (Gmax), s	60.0	35.0	60.0
Max Q Clear Time (g_c+I1), s	6.7	3.2	7.0
Green Ext Time (p_c), s	2.2	0.1	2.3

Intersection Summary	
HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	578	153	38	618	82	123	218	48	50	150	47
Future Volume (veh/h)	51	578	153	38	618	82	123	218	48	50	150	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1885	1811	1885	1885	1781	1870	1870	1900	1841	1841
Adj Flow Rate, veh/h	54	608	161	40	651	86	129	229	51	53	158	49
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	1	1	6	1	1	8	2	2	0	4	4
Cap, veh/h	290	804	213	261	912	121	280	383	85	238	349	108
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	709	1436	380	677	1631	215	1119	1481	330	1117	1348	418
Grp Volume(v), veh/h	54	0	769	40	0	737	129	0	280	53	0	207
Grp Sat Flow(s),veh/h/ln	709	0	1817	677	0	1846	1119	0	1811	1117	0	1765
Q Serve(g_s), s	4.3	0.0	23.1	3.4	0.0	20.9	7.8	0.0	9.7	3.1	0.0	7.0
Cycle Q Clear(g_c), s	25.2	0.0	23.1	26.5	0.0	20.9	14.9	0.0	9.7	12.8	0.0	7.0
Prop In Lane	1.00		0.21	1.00		0.12	1.00		0.18	1.00		0.24
Lane Grp Cap(c), veh/h	290	0	1016	261	0	1033	280	0	469	238	0	457
V/C Ratio(X)	0.19	0.00	0.76	0.15	0.00	0.71	0.46	0.00	0.60	0.22	0.00	0.45
Avail Cap(c_a), veh/h	588	0	1779	545	0	1808	460	0	760	418	0	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.8	0.0	12.0	22.2	0.0	11.5	28.5	0.0	23.2	28.9	0.0	22.3
Incr Delay (d2), s/veh	0.3	0.0	1.2	0.3	0.0	0.9	1.2	0.0	1.2	0.5	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	0.0	11.3	0.9	0.0	10.5	3.6	0.0	6.9	1.4	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	0.0	13.2	22.4	0.0	12.5	29.7	0.0	24.5	29.3	0.0	23.0
LnGrp LOS	C	A	B	C	A	B	C	A	C	C	A	C
Approach Vol, veh/h		823			777			409			260	
Approach Delay, s/veh		13.7			13.0			26.1			24.3	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.0		24.5		47.0		24.5				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		27.2		16.9		28.5		14.8				
Green Ext Time (p_c), s		6.3		1.6		5.7		1.1				

Intersection Summary												
HCM 6th Ctrl Delay			16.9									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱		↰	↱			↕	
Traffic Vol, veh/h	40	650	42	44	662	30	37	7	41	29	3	36
Future Vol, veh/h	40	650	42	44	662	30	37	7	41	29	3	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	5	1	0	0	2	5	0	0	0	8	0	0
Mvmt Flow	43	691	45	47	704	32	39	7	44	31	3	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	736	0	0	736	0	0	1635	1630	714	1639	1636	720
Stage 1	-	-	-	-	-	-	800	800	-	814	814	-
Stage 2	-	-	-	-	-	-	835	830	-	825	822	-
Critical Hdwy	4.15	-	-	4.1	-	-	7.1	6.5	6.2	7.18	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Follow-up Hdwy	2.245	-	-	2.2	-	-	3.5	4	3.3	3.572	4	3.3
Pot Cap-1 Maneuver	856	-	-	879	-	-	82	103	435	78	102	431
Stage 1	-	-	-	-	-	-	382	400	-	363	394	-
Stage 2	-	-	-	-	-	-	365	388	-	358	391	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	856	-	-	879	-	-	65	89	435	59	88	431
Mov Cap-2 Maneuver	-	-	-	-	-	-	65	89	-	59	88	-
Stage 1	-	-	-	-	-	-	349	366	-	332	373	-
Stage 2	-	-	-	-	-	-	312	367	-	288	357	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.6	65.4	82.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	65	278	856	-	-	879	-	-	112
HCM Lane V/C Ratio	0.606	0.184	0.05	-	-	0.053	-	-	0.646
HCM Control Delay (s)	123.2	20.8	9.4	0	-	9.3	-	-	82.7
HCM Lane LOS	F	C	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	2.6	0.7	0.2	-	-	0.2	-	-	3.3

Intersection	
Int Delay, s/veh	5.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	144	0	0	353	190	292
Future Vol, veh/h	144	0	0	353	190	292
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	5	3	2
Mvmt Flow	148	0	0	364	196	301

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	330	74
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	182	-
Critical Hdwy	-	-	-	-	6.86	6.94
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	-	-	3.53	3.32
Pot Cap-1 Maneuver	-	0	0	-	637	973
Stage 1	-	0	0	-	861	-
Stage 2	-	0	0	-	828	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	637	973
Mov Cap-2 Maneuver	-	-	-	-	637	-
Stage 1	-	-	-	-	861	-
Stage 2	-	-	-	-	828	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	637	973	-	-
HCM Lane V/C Ratio	0.307	0.309	-	-
HCM Control Delay (s)	13.1	10.3	-	-
HCM Lane LOS	B	B	-	-
HCM 95th %tile Q(veh)	1.3	1.3	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	709	11	21	713	23	44
Future Vol, veh/h	709	11	21	713	23	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	9	14	2	4	11
Mvmt Flow	771	12	23	775	25	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	771	0	1592	771
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	821	-
Critical Hdwy	-	-	4.24	-	6.44	6.31
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.326	-	3.536	3.399
Pot Cap-1 Maneuver	-	0	793	-	117	386
Stage 1	-	0	-	-	453	-
Stage 2	-	0	-	-	429	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	793	-	111	386
Mov Cap-2 Maneuver	-	-	-	-	246	-
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	407	-

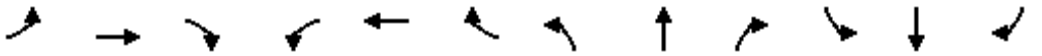
Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	17.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	246	386	-	793	-
HCM Lane V/C Ratio	0.102	0.124	-	0.029	-
HCM Control Delay (s)	21.3	15.6	-	9.7	-
HCM Lane LOS	C	C	-	A	-
HCM 95th %tile Q(veh)	0.3	0.4	-	0.1	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	386	61	44	222	36	21
Future Volume (veh/h)	386	61	44	222	36	21
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1722	1678	1767	1278	1248
Adj Flow Rate, veh/h	434	69	49	249	40	24
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	12	15	9	42	44
Cap, veh/h	1355	1101	633	1332	93	80
Arrive On Green	0.75	0.75	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1796	1459	803	1767	1217	1058
Grp Volume(v), veh/h	434	69	49	249	40	24
Grp Sat Flow(s),veh/h/ln	1796	1459	803	1767	1217	1058
Q Serve(g_s), s	6.2	1.0	1.7	3.2	2.5	1.7
Cycle Q Clear(g_c), s	6.2	1.0	7.9	3.2	2.5	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1355	1101	633	1332	93	80
V/C Ratio(X)	0.32	0.06	0.08	0.19	0.43	0.30
Avail Cap(c_a), veh/h	1355	1101	633	1332	535	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.2	2.5	4.5	2.8	35.1	34.7
Incr Delay (d2), s/veh	0.6	0.1	0.2	0.3	3.2	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	0.3	0.4	1.1	1.5	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.8	2.6	4.7	3.1	38.3	36.8
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	503			298	64	
Approach Delay, s/veh	3.6			3.4	37.7	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		12.6		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		8.2		4.5		9.9
Green Ext Time (p_c), s		2.8		0.2		1.7

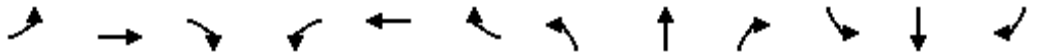
Intersection Summary	
HCM 6th Ctrl Delay	6.1
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	764	17	36	351	17	10	1	5	19	10	44
Future Volume (veh/h)	15	764	17	36	351	17	10	1	5	19	10	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811	1752	1693	1693	1693	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	16	813	18	38	373	18	11	1	5	20	11	47
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	10	14	14	14	0	0	0	0	0
Cap, veh/h	53	1321	29	498	1215	59	203	23	115	77	30	82
Arrive On Green	0.76	0.76	0.76	0.76	0.76	0.76	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	14	1741	38	618	1601	77	1217	275	1377	284	364	982
Grp Volume(v), veh/h	847	0	0	38	0	391	11	0	6	78	0	0
Grp Sat Flow(s),veh/h/ln	1792	0	0	618	0	1679	1217	0	1652	1630	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	6.3	0.0	0.0	0.3	1.7	0.0	0.0
Cycle Q Clear(g_c), s	18.3	0.0	0.0	2.5	0.0	6.3	0.5	0.0	0.3	3.9	0.0	0.0
Prop In Lane	0.02		0.02	1.00		0.05	1.00		0.83	0.26		0.60
Lane Grp Cap(c), veh/h	1403	0	0	498	0	1274	203	0	138	189	0	0
V/C Ratio(X)	0.60	0.00	0.00	0.08	0.00	0.31	0.05	0.00	0.04	0.41	0.00	0.00
Avail Cap(c_a), veh/h	1403	0	0	498	0	1274	549	0	608	642	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.7	0.0	0.0	2.8	0.0	3.2	36.2	0.0	36.1	37.7	0.0	0.0
Incr Delay (d2), s/veh	1.9	0.0	0.0	0.3	0.0	0.6	0.1	0.0	0.1	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.9	0.0	0.0	0.2	0.0	2.2	0.4	0.0	0.2	2.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	0.0	0.0	3.1	0.0	3.9	36.3	0.0	36.2	39.1	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	A
Approach Vol, veh/h		847			429			17			78	
Approach Delay, s/veh		6.6			3.8			36.3			39.1	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		72.0		13.7		72.0		13.7				
Change Period (Y+Rc), s		7.0		6.5		7.0		6.5				
Max Green Setting (Gmax), s		65.0		31.5		65.0		31.5				
Max Q Clear Time (g_c+I1), s		20.3		2.5		8.3		5.9				
Green Ext Time (p_c), s		6.7		0.0		2.7		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			8.0									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	662	188	38	283	27	138	137	30	43	183	37
Future Volume (veh/h)	23	662	188	38	283	27	138	137	30	43	183	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1796	1796	1411	1693	1693	1737	1678	1678	1767	1826	1826
Adj Flow Rate, veh/h	26	761	216	44	325	31	159	157	34	49	210	43
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	7	7	33	14	14	11	15	15	9	5	5
Cap, veh/h	553	831	236	116	939	90	216	357	77	255	393	80
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	952	1346	382	434	1521	145	1046	1336	289	1126	1471	301
Grp Volume(v), veh/h	26	0	977	44	0	356	159	0	191	49	0	253
Grp Sat Flow(s),veh/h/ln	952	0	1728	434	0	1666	1046	0	1626	1126	0	1772
Q Serve(g_s), s	1.5	0.0	56.0	11.2	0.0	11.7	16.3	0.0	11.0	4.2	0.0	13.7
Cycle Q Clear(g_c), s	13.2	0.0	56.0	67.1	0.0	11.7	30.0	0.0	11.0	15.2	0.0	13.7
Prop In Lane	1.00		0.22	1.00		0.09	1.00		0.18	1.00		0.17
Lane Grp Cap(c), veh/h	553	0	1066	116	0	1029	216	0	434	255	0	473
V/C Ratio(X)	0.05	0.00	0.92	0.38	0.00	0.35	0.74	0.00	0.44	0.19	0.00	0.53
Avail Cap(c_a), veh/h	558	0	1076	118	0	1038	216	0	434	255	0	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.7	0.0	18.9	48.5	0.0	10.5	48.4	0.0	34.2	40.5	0.0	35.2
Incr Delay (d2), s/veh	0.0	0.0	12.0	2.0	0.0	0.2	12.5	0.0	0.7	0.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.0	29.5	2.2	0.0	6.7	8.8	0.0	7.6	2.1	0.0	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.7	0.0	30.9	50.6	0.0	10.7	60.9	0.0	34.9	40.9	0.0	36.4
LnGrp LOS	B	A	C	D	A	B	E	A	C	D	A	D
Approach Vol, veh/h		1003			400			350			302	
Approach Delay, s/veh		30.5			15.1			46.7			37.1	
Approach LOS		C			B			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		76.4		36.0		76.4		36.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		58.0		32.0		69.1		17.2				
Green Ext Time (p_c), s		5.5		0.0		0.2		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			31.2									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	43	0	0	44	71	14
Future Vol, veh/h	43	0	0	44	71	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	14	0	0	9	12	4
Mvmt Flow	47	0	0	48	77	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	71	24
Stage 1	-	-	-	-	47	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	-	-	-	-	7.04	6.98
Critical Hdwy Stg 1	-	-	-	-	6.04	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	-	-	3.62	3.34
Pot Cap-1 Maneuver	-	0	0	-	897	1040
Stage 1	-	0	0	-	941	-
Stage 2	-	0	0	-	967	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	897	1040
Mov Cap-2 Maneuver	-	-	-	-	897	-
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	967	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	897	1040	-	-
HCM Lane V/C Ratio	0.086	0.015	-	-
HCM Control Delay (s)	9.4	8.5	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.3	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	771	17	22	402	2	12
Future Vol, veh/h	771	17	22	402	2	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	0	14	0	42
Mvmt Flow	838	18	24	437	2	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	838	0	1323	838
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	485	-
Critical Hdwy	-	-	4.1	-	6.4	6.62
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.678
Pot Cap-1 Maneuver	-	0	805	-	174	312
Stage 1	-	0	-	-	428	-
Stage 2	-	0	-	-	623	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	805	-	167	312
Mov Cap-2 Maneuver	-	-	-	-	301	-
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	599	-

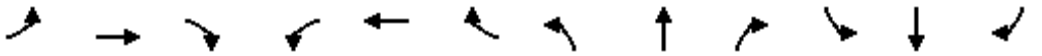
Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	17
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	301	312	-	805	-
HCM Lane V/C Ratio	0.007	0.042	-	0.03	-
HCM Control Delay (s)	17	17	-	9.6	-
HCM Lane LOS	C	C	-	A	-
HCM 95th %tile Q(veh)	0	0.1	-	0.1	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	307	13	26	493	117	125
Future Volume (veh/h)	307	13	26	493	117	125
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1159	1559	1870	1885	1900
Adj Flow Rate, veh/h	334	14	28	536	127	136
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	50	23	2	1	0
Cap, veh/h	1362	710	657	1351	207	185
Arrive On Green	0.72	0.72	0.72	0.72	0.12	0.12
Sat Flow, veh/h	1885	982	861	1870	1795	1610
Grp Volume(v), veh/h	334	14	28	536	127	136
Grp Sat Flow(s),veh/h/ln	1885	982	861	1870	1795	1610
Q Serve(g_s), s	5.0	0.3	0.9	9.3	5.6	6.8
Cycle Q Clear(g_c), s	5.0	0.3	5.9	9.3	5.6	6.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1362	710	657	1351	207	185
V/C Ratio(X)	0.25	0.02	0.04	0.40	0.61	0.73
Avail Cap(c_a), veh/h	1362	710	657	1351	757	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.9	3.2	4.9	4.5	35.0	35.5
Incr Delay (d2), s/veh	0.4	0.1	0.1	0.9	3.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.1	0.2	4.1	4.6	5.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.3	3.3	5.0	5.4	38.0	41.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	348			564	263	
Approach Delay, s/veh	4.3			5.3	39.6	
Approach LOS	A			A	D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	67.0	16.1	67.0
Change Period (Y+Rc), s	7.0	6.5	7.0
Max Green Setting (Gmax), s	60.0	35.0	60.0
Max Q Clear Time (g_c+I1), s	7.0	8.8	11.3
Green Ext Time (p_c), s	1.9	0.8	3.5

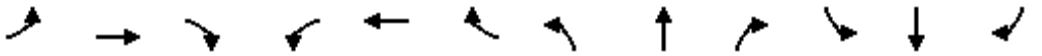
Intersection Summary	
HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	605	35	49	862	31	48	15	37	27	8	29
Future Volume (veh/h)	27	605	35	49	862	31	48	15	37	27	8	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1767	1870	1870	1856	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	28	617	36	50	880	32	49	15	38	28	8	30
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	9	2	2	3	0	0	0	0	0
Cap, veh/h	72	1222	70	603	1329	48	233	45	115	105	36	66
Arrive On Green	0.74	0.74	0.74	0.74	0.74	0.74	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	36	1650	94	736	1793	65	1359	476	1207	447	383	692
Grp Volume(v), veh/h	681	0	0	50	0	912	49	0	53	66	0	0
Grp Sat Flow(s),veh/h/ln	1780	0	0	736	0	1859	1359	0	1683	1522	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	20.5	0.0	0.0	2.4	1.0	0.0	0.0
Cycle Q Clear(g_c), s	12.4	0.0	0.0	2.2	0.0	20.5	2.1	0.0	2.4	3.4	0.0	0.0
Prop In Lane	0.04		0.05	1.00		0.04	1.00		0.72	0.42		0.45
Lane Grp Cap(c), veh/h	1364	0	0	603	0	1377	233	0	160	207	0	0
V/C Ratio(X)	0.50	0.00	0.00	0.08	0.00	0.66	0.21	0.00	0.33	0.32	0.00	0.00
Avail Cap(c_a), veh/h	1364	0	0	603	0	1377	690	0	726	720	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.4	0.0	0.0	3.0	0.0	5.4	34.7	0.0	34.8	35.1	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.3	0.0	2.5	0.4	0.0	1.2	0.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.0	0.0	0.0	0.3	0.0	8.4	1.7	0.0	1.8	2.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.7	0.0	0.0	3.3	0.0	7.9	35.1	0.0	36.0	36.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	A
Approach Vol, veh/h		681			962			102			66	
Approach Delay, s/veh		5.7			7.7			35.6			36.0	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		68.0		14.3		68.0		14.3				
Change Period (Y+Rc), s		7.0		6.5		7.0		6.5				
Max Green Setting (Gmax), s		61.0		35.5		61.0		35.5				
Max Q Clear Time (g_c+I1), s		14.4		4.4		22.5		5.4				
Green Ext Time (p_c), s		5.0		0.4		8.0		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			9.5									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	499	155	41	812	41	152	107	44	47	184	36
Future Volume (veh/h)	42	499	155	41	812	41	152	107	44	47	184	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1870	1870	1737	1870	1870	1796	1841	1841	1870	1737	1737
Adj Flow Rate, veh/h	44	520	161	43	846	43	158	111	46	49	192	38
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	2	2	11	2	2	7	4	4	2	11	11
Cap, veh/h	179	765	237	290	985	50	277	352	146	351	401	79
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	610	1370	424	705	1765	90	1105	1236	512	1230	1408	279
Grp Volume(v), veh/h	44	0	681	43	0	889	158	0	157	49	0	230
Grp Sat Flow(s),veh/h/ln	610	0	1794	705	0	1854	1105	0	1749	1230	0	1687
Q Serve(g_s), s	5.5	0.0	22.4	3.8	0.0	33.7	11.4	0.0	5.8	2.7	0.0	9.4
Cycle Q Clear(g_c), s	39.2	0.0	22.4	26.2	0.0	33.7	20.8	0.0	5.8	8.5	0.0	9.4
Prop In Lane	1.00		0.24	1.00		0.05	1.00		0.29	1.00		0.17
Lane Grp Cap(c), veh/h	179	0	1001	290	0	1035	277	0	498	351	0	481
V/C Ratio(X)	0.25	0.00	0.68	0.15	0.00	0.86	0.57	0.00	0.32	0.14	0.00	0.48
Avail Cap(c_a), veh/h	354	0	1516	492	0	1566	362	0	633	445	0	611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.2	0.0	13.0	22.4	0.0	15.5	33.1	0.0	23.3	26.6	0.0	24.5
Incr Delay (d2), s/veh	0.7	0.0	0.8	0.2	0.0	3.2	1.8	0.0	0.4	0.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.0	11.7	1.1	0.0	17.5	5.4	0.0	4.1	1.4	0.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.9	0.0	13.9	22.6	0.0	18.8	35.0	0.0	23.6	26.8	0.0	25.3
LnGrp LOS	C	A	B	C	A	B	C	A	C	C	A	C
Approach Vol, veh/h		725			932			315			279	
Approach Delay, s/veh		15.0			19.0			29.3			25.5	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		53.2		29.6		53.2		29.6				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		41.2		22.8		35.7		11.4				
Green Ext Time (p_c), s		5.1		0.8		7.4		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			20.0									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	12	0	0	29	27	7
Future Vol, veh/h	12	0	0	29	27	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	4	13	3
Mvmt Flow	13	0	0	30	28	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	28	7
Stage 1	-	-	-	-	13	-
Stage 2	-	-	-	-	15	-
Critical Hdwy	-	-	-	-	7.06	6.96
Critical Hdwy Stg 1	-	-	-	-	6.06	-
Critical Hdwy Stg 2	-	-	-	-	6.06	-
Follow-up Hdwy	-	-	-	-	3.63	3.33
Pot Cap-1 Maneuver	-	0	0	-	952	1070
Stage 1	-	0	0	-	977	-
Stage 2	-	0	0	-	974	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	952	1070
Mov Cap-2 Maneuver	-	-	-	-	952	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	974	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	952	1070	-	-
HCM Lane V/C Ratio	0.03	0.007	-	-
HCM Control Delay (s)	8.9	8.4	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	664	5	5	934	8	46
Future Vol, veh/h	664	5	5	934	8	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	20	0	2	0	11
Mvmt Flow	722	5	5	1015	9	50

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	722	0	1747	722
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	1025	-
Critical Hdwy	-	-	4.1	-	6.4	6.31
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.399
Pot Cap-1 Maneuver	-	0	889	-	96	412
Stage 1	-	0	-	-	485	-
Stage 2	-	0	-	-	349	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	889	-	95	412
Mov Cap-2 Maneuver	-	-	-	-	225	-
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	344	-

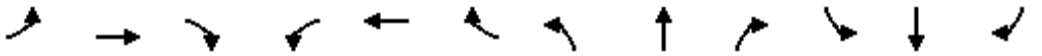
Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	225	412	-	889	-
HCM Lane V/C Ratio	0.039	0.121	-	0.006	-
HCM Control Delay (s)	21.6	14.9	-	9.1	-
HCM Lane LOS	C	B	-	A	-
HCM 95th %tile Q(veh)	0.1	0.4	-	0	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	376	14	9	385	20	24
Future Volume (veh/h)	376	14	9	385	20	24
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1648	1900	1885	1633	1900
Adj Flow Rate, veh/h	392	15	9	401	21	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	17	0	1	18	0
Cap, veh/h	1440	1067	789	1440	100	104
Arrive On Green	0.76	0.76	0.76	0.76	0.06	0.06
Sat Flow, veh/h	1885	1397	994	1885	1555	1610
Grp Volume(v), veh/h	392	15	9	401	21	25
Grp Sat Flow(s),veh/h/ln	1885	1397	994	1885	1555	1610
Q Serve(g_s), s	4.9	0.2	0.2	5.0	1.0	1.2
Cycle Q Clear(g_c), s	4.9	0.2	5.1	5.0	1.0	1.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1440	1067	789	1440	100	104
V/C Ratio(X)	0.27	0.01	0.01	0.28	0.21	0.24
Avail Cap(c_a), veh/h	1440	1067	789	1440	693	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.8	2.2	3.5	2.8	34.8	34.9
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.5	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	0.0	0.1	1.6	0.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.2	2.2	3.6	3.3	35.9	36.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	407			410	46	
Approach Delay, s/veh	3.2			3.3	36.0	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		11.6		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		6.9		3.2		7.1
Green Ext Time (p_c), s		2.3		0.1		2.3

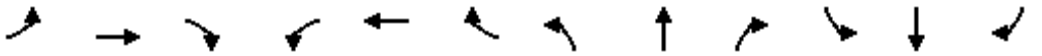
Intersection Summary	
HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	663	42	56	667	22	45	15	41	26	7	37
Future Volume (veh/h)	41	663	42	56	667	22	45	15	41	26	7	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1826	1870	1870	1841	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	44	705	45	60	710	23	48	16	44	28	7	39
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	5	2	2	4	0	0	0	0	0
Cap, veh/h	89	1197	74	556	1334	43	231	43	118	96	30	73
Arrive On Green	0.74	0.74	0.74	0.74	0.74	0.74	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	58	1616	101	695	1801	58	1338	448	1231	375	314	768
Grp Volume(v), veh/h	794	0	0	60	0	733	48	0	60	74	0	0
Grp Sat Flow(s),veh/h/ln	1775	0	0	695	0	1860	1338	0	1678	1457	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	13.9	0.0	0.0	2.8	1.4	0.0	0.0
Cycle Q Clear(g_c), s	15.8	0.0	0.0	3.2	0.0	13.9	2.2	0.0	2.8	4.2	0.0	0.0
Prop In Lane	0.06		0.06	1.00		0.03	1.00		0.73	0.38		0.53
Lane Grp Cap(c), veh/h	1360	0	0	556	0	1377	231	0	160	200	0	0
V/C Ratio(X)	0.58	0.00	0.00	0.11	0.00	0.53	0.21	0.00	0.37	0.37	0.00	0.00
Avail Cap(c_a), veh/h	1360	0	0	556	0	1377	680	0	723	712	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.8	0.0	0.0	3.2	0.0	4.6	34.7	0.0	34.9	35.4	0.0	0.0
Incr Delay (d2), s/veh	1.8	0.0	0.0	0.4	0.0	1.5	0.4	0.0	1.4	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.6	0.0	0.0	0.4	0.0	5.7	1.6	0.0	2.1	2.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.7	0.0	0.0	3.6	0.0	6.1	35.1	0.0	36.4	36.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	A
Approach Vol, veh/h		794			793			108			74	
Approach Delay, s/veh		6.7			5.9			35.8			36.6	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		68.0		14.4		68.0		14.4				
Change Period (Y+Rc), s		7.0		6.5		7.0		6.5				
Max Green Setting (Gmax), s		61.0		35.5		61.0		35.5				
Max Q Clear Time (g_c+I1), s		17.8		4.8		15.9		6.2				
Green Ext Time (p_c), s		6.3		0.5		5.8		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			9.3									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	590	156	39	630	84	125	222	49	51	153	48
Future Volume (veh/h)	52	590	156	39	630	84	125	222	49	51	153	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1885	1811	1885	1885	1781	1870	1870	1900	1841	1841
Adj Flow Rate, veh/h	55	621	164	41	663	88	132	234	52	54	161	51
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	1	1	6	1	1	8	2	2	0	4	4
Cap, veh/h	276	799	211	245	906	120	282	391	87	240	353	112
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	700	1437	380	667	1630	216	1114	1482	329	1110	1340	424
Grp Volume(v), veh/h	55	0	785	41	0	751	132	0	286	54	0	212
Grp Sat Flow(s),veh/h/ln	700	0	1817	667	0	1846	1114	0	1811	1110	0	1764
Q Serve(g_s), s	4.6	0.0	24.3	3.7	0.0	21.9	8.1	0.0	9.9	3.2	0.0	7.2
Cycle Q Clear(g_c), s	26.5	0.0	24.3	28.0	0.0	21.9	15.3	0.0	9.9	13.2	0.0	7.2
Prop In Lane	1.00		0.21	1.00		0.12	1.00		0.18	1.00		0.24
Lane Grp Cap(c), veh/h	276	0	1009	245	0	1026	282	0	478	240	0	465
V/C Ratio(X)	0.20	0.00	0.78	0.17	0.00	0.73	0.47	0.00	0.60	0.23	0.00	0.46
Avail Cap(c_a), veh/h	568	0	1767	523	0	1795	452	0	755	409	0	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.9	0.0	12.5	23.5	0.0	12.0	28.6	0.0	23.2	28.9	0.0	22.2
Incr Delay (d2), s/veh	0.4	0.0	1.3	0.3	0.0	1.0	1.2	0.0	1.2	0.5	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.0	11.9	1.0	0.0	11.0	3.7	0.0	7.1	1.5	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.3	0.0	13.8	23.8	0.0	13.0	29.8	0.0	24.4	29.4	0.0	22.9
LnGrp LOS	C	A	B	C	A	B	C	A	C	C	A	C
Approach Vol, veh/h		840			792			418			266	
Approach Delay, s/veh		14.4			13.6			26.1			24.2	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.0		25.0		47.0		25.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		28.5		17.3		30.0		15.2				
Green Ext Time (p_c), s		6.5		1.7		5.9		1.1				

Intersection Summary												
HCM 6th Ctrl Delay			17.3									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	5.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	147	0	0	360	194	298
Future Vol, veh/h	147	0	0	360	194	298
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	5	3	2
Mvmt Flow	152	0	0	371	200	307

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	338	76
Stage 1	-	-	-	-	152	-
Stage 2	-	-	-	-	186	-
Critical Hdwy	-	-	-	-	6.86	6.94
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	-	-	3.53	3.32
Pot Cap-1 Maneuver	-	0	0	-	629	970
Stage 1	-	0	0	-	857	-
Stage 2	-	0	0	-	824	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	629	970
Mov Cap-2 Maneuver	-	-	-	-	629	-
Stage 1	-	-	-	-	857	-
Stage 2	-	-	-	-	824	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	629	970	-	-
HCM Lane V/C Ratio	0.318	0.317	-	-
HCM Control Delay (s)	13.4	10.4	-	-
HCM Lane LOS	B	B	-	-
HCM 95th %tile Q(veh)	1.4	1.4	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	723	7	9	738	7	44
Future Vol, veh/h	723	7	9	738	7	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	14	0	2	0	11
Mvmt Flow	786	8	10	802	8	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	786	0	1608	786
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	822	-
Critical Hdwy	-	-	4.1	-	6.4	6.31
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.399
Pot Cap-1 Maneuver	-	0	842	-	117	378
Stage 1	-	0	-	-	453	-
Stage 2	-	0	-	-	435	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	842	-	115	378
Mov Cap-2 Maneuver	-	-	-	-	253	-
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	426	-

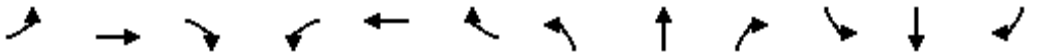
Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	16.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	253	378	-	842	-
HCM Lane V/C Ratio	0.03	0.127	-	0.012	-
HCM Control Delay (s)	19.7	15.9	-	9.3	-
HCM Lane LOS	C	C	-	A	-
HCM 95th %tile Q(veh)	0.1	0.4	-	0	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	386	61	44	222	36	21
Future Volume (veh/h)	386	61	44	222	36	21
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1722	1678	1767	1278	1248
Adj Flow Rate, veh/h	434	69	49	249	40	24
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	12	15	9	42	44
Cap, veh/h	1355	1101	633	1332	93	80
Arrive On Green	0.75	0.75	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1796	1459	803	1767	1217	1058
Grp Volume(v), veh/h	434	69	49	249	40	24
Grp Sat Flow(s),veh/h/ln	1796	1459	803	1767	1217	1058
Q Serve(g_s), s	6.2	1.0	1.7	3.2	2.5	1.7
Cycle Q Clear(g_c), s	6.2	1.0	7.9	3.2	2.5	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1355	1101	633	1332	93	80
V/C Ratio(X)	0.32	0.06	0.08	0.19	0.43	0.30
Avail Cap(c_a), veh/h	1355	1101	633	1332	535	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.2	2.5	4.5	2.8	35.1	34.7
Incr Delay (d2), s/veh	0.6	0.1	0.2	0.3	3.2	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	0.3	0.4	1.1	1.5	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.8	2.6	4.7	3.1	38.3	36.8
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	503			298	64	
Approach Delay, s/veh	3.6			3.4	37.7	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		12.6		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		8.2		4.5		9.9
Green Ext Time (p_c), s		2.8		0.2		1.7

Intersection Summary	
HCM 6th Ctrl Delay	6.1
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	662	188	38	283	27	138	137	30	43	183	37
Future Volume (veh/h)	23	662	188	38	283	27	138	137	30	43	183	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1796	1796	1411	1693	1693	1737	1678	1678	1767	1826	1826
Adj Flow Rate, veh/h	26	761	216	44	325	31	159	157	34	49	210	43
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	7	7	33	14	14	11	15	15	9	5	5
Cap, veh/h	553	831	236	116	939	90	216	357	77	255	393	80
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	952	1346	382	434	1521	145	1046	1336	289	1126	1471	301
Grp Volume(v), veh/h	26	0	977	44	0	356	159	0	191	49	0	253
Grp Sat Flow(s),veh/h/ln	952	0	1728	434	0	1666	1046	0	1626	1126	0	1772
Q Serve(g_s), s	1.5	0.0	56.0	11.2	0.0	11.7	16.3	0.0	11.0	4.2	0.0	13.7
Cycle Q Clear(g_c), s	13.2	0.0	56.0	67.1	0.0	11.7	30.0	0.0	11.0	15.2	0.0	13.7
Prop In Lane	1.00		0.22	1.00		0.09	1.00		0.18	1.00		0.17
Lane Grp Cap(c), veh/h	553	0	1066	116	0	1029	216	0	434	255	0	473
V/C Ratio(X)	0.05	0.00	0.92	0.38	0.00	0.35	0.74	0.00	0.44	0.19	0.00	0.53
Avail Cap(c_a), veh/h	558	0	1076	118	0	1038	216	0	434	255	0	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.7	0.0	18.9	48.5	0.0	10.5	48.4	0.0	34.2	40.5	0.0	35.2
Incr Delay (d2), s/veh	0.0	0.0	12.0	2.0	0.0	0.2	12.5	0.0	0.7	0.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.0	29.5	2.2	0.0	6.7	8.8	0.0	7.6	2.1	0.0	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.7	0.0	30.9	50.6	0.0	10.7	60.9	0.0	34.9	40.9	0.0	36.4
LnGrp LOS	B	A	C	D	A	B	E	A	C	D	A	D
Approach Vol, veh/h		1003			400			350			302	
Approach Delay, s/veh		30.5			15.1			46.7			37.1	
Approach LOS		C			B			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		76.4		36.0		76.4		36.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		58.0		32.0		69.1		17.2				
Green Ext Time (p_c), s		5.5		0.0		0.2		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			31.2									
HCM 6th LOS			C									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	772	26	47	377	5	12
Future Volume (veh/h)	772	26	47	377	5	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1811	1693	1693	1604	1278
Adj Flow Rate, veh/h	839	28	51	410	5	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	14	14	20	42
Cap, veh/h	1371	46	143	1070	51	36
Arrive On Green	0.79	0.79	0.79	0.79	0.03	0.03
Sat Flow, veh/h	1742	58	114	1360	1527	1083
Grp Volume(v), veh/h	0	867	461	0	5	13
Grp Sat Flow(s),veh/h/ln	0	1801	1473	0	1527	1083
Q Serve(g_s), s	0.0	14.9	0.0	0.0	0.2	0.9
Cycle Q Clear(g_c), s	0.0	14.9	6.0	0.0	0.2	0.9
Prop In Lane		0.03	0.11		1.00	1.00
Lane Grp Cap(c), veh/h	0	1416	1212	0	51	36
V/C Ratio(X)	0.00	0.61	0.38	0.00	0.10	0.36
Avail Cap(c_a), veh/h	0	1416	1212	0	733	520
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	3.3	2.3	0.0	35.2	35.5
Incr Delay (d2), s/veh	0.0	2.0	0.9	0.0	0.8	5.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	3.4	1.3	0.0	0.2	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.3	3.3	0.0	36.0	41.4
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	867			461	18	
Approach Delay, s/veh	5.3			3.3	39.9	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		66.0		9.0		66.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		59.0		36.0		59.0
Max Q Clear Time (g_c+I1), s		16.9		2.9		8.0
Green Ext Time (p_c), s		6.9		0.0		3.2

Intersection Summary	
HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	764	17	11	353	18	8	0	5	29	1	44
Future Vol, veh/h	15	764	17	11	353	18	8	0	5	29	1	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	6	10	20	14	14	0	0	50	0	0	0
Mvmt Flow	16	813	18	12	376	19	9	0	5	31	1	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	395	0	0	831	0	0	1288	1273	822	1267	1273	386
Stage 1	-	-	-	-	-	-	854	854	-	410	410	-
Stage 2	-	-	-	-	-	-	434	419	-	857	863	-
Critical Hdwy	4.1	-	-	4.3	-	-	7.1	6.5	6.7	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.38	-	-	3.5	4	3.75	3.5	4	3.3
Pot Cap-1 Maneuver	1175	-	-	729	-	-	142	169	309	147	169	666
Stage 1	-	-	-	-	-	-	356	378	-	623	599	-
Stage 2	-	-	-	-	-	-	604	593	-	355	374	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1175	-	-	729	-	-	127	161	309	140	161	666
Mov Cap-2 Maneuver	-	-	-	-	-	-	127	161	-	140	161	-
Stage 1	-	-	-	-	-	-	347	369	-	607	586	-
Stage 2	-	-	-	-	-	-	549	581	-	340	365	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	28.3	24.2
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	127	309	1175	-	-	729	-	-	265
HCM Lane V/C Ratio	0.067	0.017	0.014	-	-	0.016	-	-	0.297
HCM Control Delay (s)	35.4	16.9	8.1	0	-	10	0	-	24.2
HCM Lane LOS	E	C	A	A	-	B	A	-	C
HCM 95th %tile Q(veh)	0.2	0.1	0	-	-	0	-	-	1.2

Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	43	0	0	44	71	14
Future Vol, veh/h	43	0	0	44	71	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	14	0	0	9	12	4
Mvmt Flow	47	0	0	48	77	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	71	24
Stage 1	-	-	-	-	47	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	-	-	-	-	7.04	6.98
Critical Hdwy Stg 1	-	-	-	-	6.04	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	-	-	3.62	3.34
Pot Cap-1 Maneuver	-	0	0	-	897	1040
Stage 1	-	0	0	-	941	-
Stage 2	-	0	0	-	967	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	897	1040
Mov Cap-2 Maneuver	-	-	-	-	897	-
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	967	-

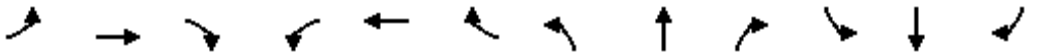
Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	897	1040	-	-
HCM Lane V/C Ratio	0.086	0.015	-	-
HCM Control Delay (s)	9.4	8.5	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.3	0	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	307	13	26	493	117	125
Future Volume (veh/h)	307	13	26	493	117	125
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1159	1559	1870	1885	1900
Adj Flow Rate, veh/h	334	14	28	536	127	136
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	50	23	2	1	0
Cap, veh/h	1362	710	657	1351	207	185
Arrive On Green	0.72	0.72	0.72	0.72	0.12	0.12
Sat Flow, veh/h	1885	982	861	1870	1795	1610
Grp Volume(v), veh/h	334	14	28	536	127	136
Grp Sat Flow(s),veh/h/ln	1885	982	861	1870	1795	1610
Q Serve(g_s), s	5.0	0.3	0.9	9.3	5.6	6.8
Cycle Q Clear(g_c), s	5.0	0.3	5.9	9.3	5.6	6.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1362	710	657	1351	207	185
V/C Ratio(X)	0.25	0.02	0.04	0.40	0.61	0.73
Avail Cap(c_a), veh/h	1362	710	657	1351	757	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.9	3.2	4.9	4.5	35.0	35.5
Incr Delay (d2), s/veh	0.4	0.1	0.1	0.9	3.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.1	0.2	4.1	4.6	5.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.3	3.3	5.0	5.4	38.0	41.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	348			564	263	
Approach Delay, s/veh	4.3			5.3	39.6	
Approach LOS	A			A	D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	67.0	16.1	67.0
Change Period (Y+Rc), s	7.0	6.5	7.0
Max Green Setting (Gmax), s	60.0	35.0	60.0
Max Q Clear Time (g_c+I1), s	7.0	8.8	11.3
Green Ext Time (p_c), s	1.9	0.8	3.5

Intersection Summary	
HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	499	155	41	812	41	152	107	44	47	184	36
Future Volume (veh/h)	42	499	155	41	812	41	152	107	44	47	184	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1870	1870	1737	1870	1870	1796	1841	1841	1870	1737	1737
Adj Flow Rate, veh/h	44	520	161	43	846	43	158	111	46	49	192	38
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	2	2	11	2	2	7	4	4	2	11	11
Cap, veh/h	179	765	237	290	985	50	277	352	146	351	401	79
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	610	1370	424	705	1765	90	1105	1236	512	1230	1408	279
Grp Volume(v), veh/h	44	0	681	43	0	889	158	0	157	49	0	230
Grp Sat Flow(s),veh/h/ln	610	0	1794	705	0	1854	1105	0	1749	1230	0	1687
Q Serve(g_s), s	5.5	0.0	22.4	3.8	0.0	33.7	11.4	0.0	5.8	2.7	0.0	9.4
Cycle Q Clear(g_c), s	39.2	0.0	22.4	26.2	0.0	33.7	20.8	0.0	5.8	8.5	0.0	9.4
Prop In Lane	1.00		0.24	1.00		0.05	1.00		0.29	1.00		0.17
Lane Grp Cap(c), veh/h	179	0	1001	290	0	1035	277	0	498	351	0	481
V/C Ratio(X)	0.25	0.00	0.68	0.15	0.00	0.86	0.57	0.00	0.32	0.14	0.00	0.48
Avail Cap(c_a), veh/h	354	0	1516	492	0	1566	362	0	633	445	0	611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.2	0.0	13.0	22.4	0.0	15.5	33.1	0.0	23.3	26.6	0.0	24.5
Incr Delay (d2), s/veh	0.7	0.0	0.8	0.2	0.0	3.2	1.8	0.0	0.4	0.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.0	11.7	1.1	0.0	17.5	5.4	0.0	4.1	1.4	0.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.9	0.0	13.9	22.6	0.0	18.8	35.0	0.0	23.6	26.8	0.0	25.3
LnGrp LOS	C	A	B	C	A	B	C	A	C	C	A	C
Approach Vol, veh/h		725			932			315			279	
Approach Delay, s/veh		15.0			19.0			29.3			25.5	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		53.2		29.6		53.2		29.6				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		41.2		22.8		35.7		11.4				
Green Ext Time (p_c), s		5.1		0.8		7.4		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			20.0									
HCM 6th LOS			B									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	664	7	12	927	25	46
Future Volume (veh/h)	664	7	12	927	25	46
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1841	1737
Adj Flow Rate, veh/h	722	8	13	1008	27	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	4	11
Cap, veh/h	1384	15	52	1386	144	121
Arrive On Green	0.75	0.75	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1846	20	8	1849	1753	1472
Grp Volume(v), veh/h	0	730	1021	0	27	50
Grp Sat Flow(s),veh/h/ln	0	1867	1857	0	1753	1472
Q Serve(g_s), s	0.0	12.9	0.0	0.0	1.1	2.6
Cycle Q Clear(g_c), s	0.0	12.9	24.1	0.0	1.1	2.6
Prop In Lane		0.01	0.01		1.00	1.00
Lane Grp Cap(c), veh/h	0	1399	1437	0	144	121
V/C Ratio(X)	0.00	0.52	0.71	0.00	0.19	0.41
Avail Cap(c_a), veh/h	0	1399	1437	0	766	644
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.1	5.5	0.0	34.3	34.9
Incr Delay (d2), s/veh	0.0	1.4	3.0	0.0	0.6	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	4.8	9.0	0.0	0.9	1.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	5.5	8.5	0.0	34.9	37.2
LnGrp LOS	A	A	A	A	C	D
Approach Vol, veh/h	730			1021	77	
Approach Delay, s/veh	5.5			8.5	36.4	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		13.1		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		14.9		4.6		26.1
Green Ext Time (p_c), s		5.1		0.2		9.1

Intersection Summary		
HCM 6th Ctrl Delay		8.5
HCM 6th LOS		A

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	605	35	42	871	39	39	7	37	29	6	29
Future Vol, veh/h	27	605	35	42	871	39	39	7	37	29	6	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	2	0	4	2	3	0	0	0	4	0	0
Mvmt Flow	28	617	36	43	889	40	40	7	38	30	6	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	929	0	0	653	0	0	1704	1706	635	1709	1704	909
Stage 1	-	-	-	-	-	-	691	691	-	995	995	-
Stage 2	-	-	-	-	-	-	1013	1015	-	714	709	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.1	6.5	6.2	7.14	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.5	4	3.3	3.536	4	3.3
Pot Cap-1 Maneuver	744	-	-	924	-	-	73	92	482	71	93	336
Stage 1	-	-	-	-	-	-	438	449	-	292	325	-
Stage 2	-	-	-	-	-	-	291	318	-	419	440	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	744	-	-	924	-	-	55	78	482	54	79	336
Mov Cap-2 Maneuver	-	-	-	-	-	-	55	78	-	54	79	-
Stage 1	-	-	-	-	-	-	412	423	-	275	293	-
Stage 2	-	-	-	-	-	-	235	287	-	357	414	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.4	89.8	108.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	55	264	744	-	-	924	-	-	92
HCM Lane V/C Ratio	0.724	0.17	0.037	-	-	0.046	-	-	0.71
HCM Control Delay (s)	166.9	21.4	10	0	-	9.1	0	-	108.3
HCM Lane LOS	F	C	B	A	-	A	A	-	F
HCM 95th %tile Q(veh)	3	0.6	0.1	-	-	0.1	-	-	3.6

Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	12	0	0	29	27	7
Future Vol, veh/h	12	0	0	29	27	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	4	13	3
Mvmt Flow	13	0	0	30	28	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	28	7
Stage 1	-	-	-	-	13	-
Stage 2	-	-	-	-	15	-
Critical Hdwy	-	-	-	-	7.06	6.96
Critical Hdwy Stg 1	-	-	-	-	6.06	-
Critical Hdwy Stg 2	-	-	-	-	6.06	-
Follow-up Hdwy	-	-	-	-	3.63	3.33
Pot Cap-1 Maneuver	-	0	0	-	952	1070
Stage 1	-	0	0	-	977	-
Stage 2	-	0	0	-	974	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	952	1070
Mov Cap-2 Maneuver	-	-	-	-	952	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	974	-

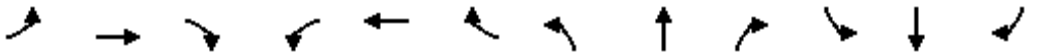
Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	952	1070	-	-
HCM Lane V/C Ratio	0.03	0.007	-	-
HCM Control Delay (s)	8.9	8.4	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	376	14	9	385	20	24
Future Volume (veh/h)	376	14	9	385	20	24
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1648	1900	1885	1633	1900
Adj Flow Rate, veh/h	392	15	9	401	21	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	17	0	1	18	0
Cap, veh/h	1440	1067	789	1440	100	104
Arrive On Green	0.76	0.76	0.76	0.76	0.06	0.06
Sat Flow, veh/h	1885	1397	994	1885	1555	1610
Grp Volume(v), veh/h	392	15	9	401	21	25
Grp Sat Flow(s),veh/h/ln	1885	1397	994	1885	1555	1610
Q Serve(g_s), s	4.9	0.2	0.2	5.0	1.0	1.2
Cycle Q Clear(g_c), s	4.9	0.2	5.1	5.0	1.0	1.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1440	1067	789	1440	100	104
V/C Ratio(X)	0.27	0.01	0.01	0.28	0.21	0.24
Avail Cap(c_a), veh/h	1440	1067	789	1440	693	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.8	2.2	3.5	2.8	34.8	34.9
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.5	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	0.0	0.1	1.6	0.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.2	2.2	3.6	3.3	35.9	36.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	407			410	46	
Approach Delay, s/veh	3.2			3.3	36.0	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		11.6		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		6.9		3.2		7.1
Green Ext Time (p_c), s		2.3		0.1		2.3

Intersection Summary	
HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	590	156	39	630	84	125	222	49	51	153	48
Future Volume (veh/h)	52	590	156	39	630	84	125	222	49	51	153	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1885	1811	1885	1885	1781	1870	1870	1900	1841	1841
Adj Flow Rate, veh/h	55	621	164	41	663	88	132	234	52	54	161	51
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	1	1	6	1	1	8	2	2	0	4	4
Cap, veh/h	276	799	211	245	906	120	282	391	87	240	353	112
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	700	1437	380	667	1630	216	1114	1482	329	1110	1340	424
Grp Volume(v), veh/h	55	0	785	41	0	751	132	0	286	54	0	212
Grp Sat Flow(s),veh/h/ln	700	0	1817	667	0	1846	1114	0	1811	1110	0	1764
Q Serve(g_s), s	4.6	0.0	24.3	3.7	0.0	21.9	8.1	0.0	9.9	3.2	0.0	7.2
Cycle Q Clear(g_c), s	26.5	0.0	24.3	28.0	0.0	21.9	15.3	0.0	9.9	13.2	0.0	7.2
Prop In Lane	1.00		0.21	1.00		0.12	1.00		0.18	1.00		0.24
Lane Grp Cap(c), veh/h	276	0	1009	245	0	1026	282	0	478	240	0	465
V/C Ratio(X)	0.20	0.00	0.78	0.17	0.00	0.73	0.47	0.00	0.60	0.23	0.00	0.46
Avail Cap(c_a), veh/h	568	0	1767	523	0	1795	452	0	755	409	0	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.9	0.0	12.5	23.5	0.0	12.0	28.6	0.0	23.2	28.9	0.0	22.2
Incr Delay (d2), s/veh	0.4	0.0	1.3	0.3	0.0	1.0	1.2	0.0	1.2	0.5	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.0	11.9	1.0	0.0	11.0	3.7	0.0	7.1	1.5	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.3	0.0	13.8	23.8	0.0	13.0	29.8	0.0	24.4	29.4	0.0	22.9
LnGrp LOS	C	A	B	C	A	B	C	A	C	C	A	C
Approach Vol, veh/h		840			792			418			266	
Approach Delay, s/veh		14.4			13.6			26.1			24.2	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.0		25.0		47.0		25.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		28.5		17.3		30.0		15.2				
Green Ext Time (p_c), s		6.5		1.7		5.9		1.1				

Intersection Summary												
HCM 6th Ctrl Delay			17.3									
HCM 6th LOS			B									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	723	11	21	727	23	44
Future Volume (veh/h)	723	11	21	727	23	44
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1885	1870	1870	1841	1737
Adj Flow Rate, veh/h	786	12	23	790	25	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	2	2	4	11
Cap, veh/h	1390	21	64	1356	141	118
Arrive On Green	0.75	0.75	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1852	28	23	1806	1753	1472
Grp Volume(v), veh/h	0	798	813	0	25	48
Grp Sat Flow(s),veh/h/ln	0	1880	1829	0	1753	1472
Q Serve(g_s), s	0.0	14.7	0.0	0.0	1.1	2.5
Cycle Q Clear(g_c), s	0.0	14.7	15.3	0.0	1.1	2.5
Prop In Lane		0.02	0.03		1.00	1.00
Lane Grp Cap(c), veh/h	0	1412	1420	0	141	118
V/C Ratio(X)	0.00	0.57	0.57	0.00	0.18	0.41
Avail Cap(c_a), veh/h	0	1412	1420	0	768	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.3	4.4	0.0	34.3	34.9
Incr Delay (d2), s/veh	0.0	1.6	1.7	0.0	0.6	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	5.5	5.7	0.0	0.8	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.0	6.1	0.0	34.9	37.2
LnGrp LOS	A	A	A	A	C	D
Approach Vol, veh/h	798			813	73	
Approach Delay, s/veh	6.0			6.1	36.4	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		12.9		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		16.7		4.5		17.3
Green Ext Time (p_c), s		5.9		0.2		6.3

Intersection Summary	
HCM 6th Ctrl Delay	7.3
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱			↕	
Traffic Vol, veh/h	41	663	42	44	675	31	37	7	41	30	3	37
Future Vol, veh/h	41	663	42	44	675	31	37	7	41	30	3	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	5	1	0	0	2	5	0	0	0	8	0	0
Mvmt Flow	44	705	45	47	718	33	39	7	44	32	3	39

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	751	0	0	750	0	0	1666	1661	728	1670	1667	735
Stage 1	-	-	-	-	-	-	816	816	-	829	829	-
Stage 2	-	-	-	-	-	-	850	845	-	841	838	-
Critical Hdwy	4.15	-	-	4.1	-	-	7.1	6.5	6.2	7.18	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Follow-up Hdwy	2.245	-	-	2.2	-	-	3.5	4	3.3	3.572	4	3.3
Pot Cap-1 Maneuver	845	-	-	868	-	-	78	98	427	74	97	423
Stage 1	-	-	-	-	-	-	374	393	-	356	388	-
Stage 2	-	-	-	-	-	-	358	382	-	351	384	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	845	-	-	868	-	-	59	81	427	54	80	423
Mov Cap-2 Maneuver	-	-	-	-	-	-	59	81	-	54	80	-
Stage 1	-	-	-	-	-	-	340	358	-	324	352	-
Stage 2	-	-	-	-	-	-	291	346	-	281	349	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.6	75.9	101.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	59	263	845	-	-	868	-	-	103
HCM Lane V/C Ratio	0.667	0.194	0.052	-	-	0.054	-	-	0.723
HCM Control Delay (s)	145.8	22	9.5	0	-	9.4	0	-	101.1
HCM Lane LOS	F	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	2.8	0.7	0.2	-	-	0.2	-	-	3.8

Intersection	
Int Delay, s/veh	5.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	147	0	0	360	194	298
Future Vol, veh/h	147	0	0	360	194	298
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	5	3	2
Mvmt Flow	152	0	0	371	200	307

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	338	76
Stage 1	-	-	-	-	152	-
Stage 2	-	-	-	-	186	-
Critical Hdwy	-	-	-	-	6.86	6.94
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	-	-	3.53	3.32
Pot Cap-1 Maneuver	-	0	0	-	629	970
Stage 1	-	0	0	-	857	-
Stage 2	-	0	0	-	824	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	629	970
Mov Cap-2 Maneuver	-	-	-	-	629	-
Stage 1	-	-	-	-	857	-
Stage 2	-	-	-	-	824	-

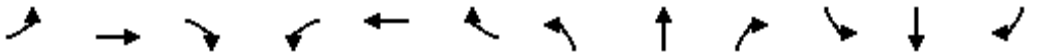
Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	629	970	-	-
HCM Lane V/C Ratio	0.318	0.317	-	-
HCM Control Delay (s)	13.4	10.4	-	-
HCM Lane LOS	B	B	-	-
HCM 95th %tile Q(veh)	1.4	1.4	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	386	61	44	222	36	21
Future Volume (veh/h)	386	61	44	222	36	21
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1722	1678	1767	1278	1248
Adj Flow Rate, veh/h	434	69	49	249	40	24
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	12	15	9	42	44
Cap, veh/h	1355	1101	633	1332	93	80
Arrive On Green	0.75	0.75	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1796	1459	803	1767	1217	1058
Grp Volume(v), veh/h	434	69	49	249	40	24
Grp Sat Flow(s),veh/h/ln	1796	1459	803	1767	1217	1058
Q Serve(g_s), s	6.2	1.0	1.7	3.2	2.5	1.7
Cycle Q Clear(g_c), s	6.2	1.0	7.9	3.2	2.5	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1355	1101	633	1332	93	80
V/C Ratio(X)	0.32	0.06	0.08	0.19	0.43	0.30
Avail Cap(c_a), veh/h	1355	1101	633	1332	535	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.2	2.5	4.5	2.8	35.1	34.7
Incr Delay (d2), s/veh	0.6	0.1	0.2	0.3	3.2	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	0.3	0.4	1.1	1.5	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.8	2.6	4.7	3.1	38.3	36.8
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	503			298	64	
Approach Delay, s/veh	3.6			3.4	37.7	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		12.6		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		8.2		4.5		9.9
Green Ext Time (p_c), s		2.8		0.2		1.7

Intersection Summary	
HCM 6th Ctrl Delay	6.1
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	662	188	38	283	27	138	137	30	43	183	37
Future Volume (veh/h)	23	662	188	38	283	27	138	137	30	43	183	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1796	1796	1411	1693	1693	1737	1678	1678	1767	1826	1826
Adj Flow Rate, veh/h	26	761	216	44	325	31	159	157	34	49	210	43
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	7	7	33	14	14	11	15	15	9	5	5
Cap, veh/h	553	831	236	116	939	90	216	357	77	255	393	80
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	952	1346	382	434	1521	145	1046	1336	289	1126	1471	301
Grp Volume(v), veh/h	26	0	977	44	0	356	159	0	191	49	0	253
Grp Sat Flow(s),veh/h/ln	952	0	1728	434	0	1666	1046	0	1626	1126	0	1772
Q Serve(g_s), s	1.5	0.0	56.0	11.2	0.0	11.7	16.3	0.0	11.0	4.2	0.0	13.7
Cycle Q Clear(g_c), s	13.2	0.0	56.0	67.1	0.0	11.7	30.0	0.0	11.0	15.2	0.0	13.7
Prop In Lane	1.00		0.22	1.00		0.09	1.00		0.18	1.00		0.17
Lane Grp Cap(c), veh/h	553	0	1066	116	0	1029	216	0	434	255	0	473
V/C Ratio(X)	0.05	0.00	0.92	0.38	0.00	0.35	0.74	0.00	0.44	0.19	0.00	0.53
Avail Cap(c_a), veh/h	558	0	1076	118	0	1038	216	0	434	255	0	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.7	0.0	18.9	48.5	0.0	10.5	48.4	0.0	34.2	40.5	0.0	35.2
Incr Delay (d2), s/veh	0.0	0.0	12.0	2.0	0.0	0.2	12.5	0.0	0.7	0.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.0	29.5	2.2	0.0	6.7	8.8	0.0	7.6	2.1	0.0	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.7	0.0	30.9	50.6	0.0	10.7	60.9	0.0	34.9	40.9	0.0	36.4
LnGrp LOS	B	A	C	D	A	B	E	A	C	D	A	D
Approach Vol, veh/h		1003			400			350			302	
Approach Delay, s/veh		30.5			15.1			46.7			37.1	
Approach LOS		C			B			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		76.4		36.0		76.4		36.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		58.0		32.0		69.1		17.2				
Green Ext Time (p_c), s		5.5		0.0		0.2		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			31.2									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱		↰	↱			↕	
Traffic Vol, veh/h	15	764	17	11	353	18	8	0	5	29	1	44
Future Vol, veh/h	15	764	17	11	353	18	8	0	5	29	1	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	6	10	20	14	14	0	0	50	0	0	0
Mvmt Flow	16	813	18	12	376	19	9	0	5	31	1	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	395	0	0	831	0	0	1288	1273	822	1267	1273	386
Stage 1	-	-	-	-	-	-	854	854	-	410	410	-
Stage 2	-	-	-	-	-	-	434	419	-	857	863	-
Critical Hdwy	4.1	-	-	4.3	-	-	7.1	6.5	6.7	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.38	-	-	3.5	4	3.75	3.5	4	3.3
Pot Cap-1 Maneuver	1175	-	-	729	-	-	142	169	309	147	169	666
Stage 1	-	-	-	-	-	-	356	378	-	623	599	-
Stage 2	-	-	-	-	-	-	604	593	-	355	374	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1175	-	-	729	-	-	127	162	309	140	162	666
Mov Cap-2 Maneuver	-	-	-	-	-	-	127	162	-	140	162	-
Stage 1	-	-	-	-	-	-	347	369	-	607	589	-
Stage 2	-	-	-	-	-	-	551	584	-	340	365	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	28.3	24.2
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	127	309	1175	-	-	729	-	-	265
HCM Lane V/C Ratio	0.067	0.017	0.014	-	-	0.016	-	-	0.297
HCM Control Delay (s)	35.4	16.9	8.1	0	-	10	-	-	24.2
HCM Lane LOS	E	C	A	A	-	B	-	-	C
HCM 95th %tile Q(veh)	0.2	0.1	0	-	-	0	-	-	1.2

Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	43	0	0	44	71	14
Future Vol, veh/h	43	0	0	44	71	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	14	0	0	9	12	4
Mvmt Flow	47	0	0	48	77	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	71	24
Stage 1	-	-	-	-	47	-
Stage 2	-	-	-	-	24	-
Critical Hdwy	-	-	-	-	7.04	6.98
Critical Hdwy Stg 1	-	-	-	-	6.04	-
Critical Hdwy Stg 2	-	-	-	-	6.04	-
Follow-up Hdwy	-	-	-	-	3.62	3.34
Pot Cap-1 Maneuver	-	0	0	-	897	1040
Stage 1	-	0	0	-	941	-
Stage 2	-	0	0	-	967	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	897	1040
Mov Cap-2 Maneuver	-	-	-	-	897	-
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	967	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	897	1040	-	-
HCM Lane V/C Ratio	0.086	0.015	-	-
HCM Control Delay (s)	9.4	8.5	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.3	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	772	26	47	377	5	12
Future Vol, veh/h	772	26	47	377	5	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	4	9	14	20	42
Mvmt Flow	839	28	51	410	5	13

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	839	0	1351	839
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	512	-
Critical Hdwy	-	-	4.19	-	6.6	6.62
Critical Hdwy Stg 1	-	-	-	-	5.6	-
Critical Hdwy Stg 2	-	-	-	-	5.6	-
Follow-up Hdwy	-	-	2.281	-	3.68	3.678
Pot Cap-1 Maneuver	-	0	766	-	152	312
Stage 1	-	0	-	-	395	-
Stage 2	-	0	-	-	567	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	766	-	139	312
Mov Cap-2 Maneuver	-	-	-	-	266	-
Stage 1	-	-	-	-	395	-
Stage 2	-	-	-	-	518	-

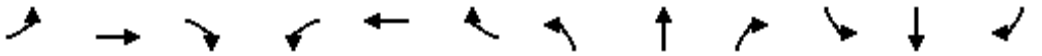
Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	17.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	266	312	-	766	-
HCM Lane V/C Ratio	0.02	0.042	-	0.067	-
HCM Control Delay (s)	18.8	17	-	10	-
HCM Lane LOS	C	C	-	B	-
HCM 95th %tile Q(veh)	0.1	0.1	-	0.2	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	307	13	26	493	117	125
Future Volume (veh/h)	307	13	26	493	117	125
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1159	1559	1870	1885	1900
Adj Flow Rate, veh/h	334	14	28	536	127	136
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	50	23	2	1	0
Cap, veh/h	1362	710	657	1351	207	185
Arrive On Green	0.72	0.72	0.72	0.72	0.12	0.12
Sat Flow, veh/h	1885	982	861	1870	1795	1610
Grp Volume(v), veh/h	334	14	28	536	127	136
Grp Sat Flow(s),veh/h/ln	1885	982	861	1870	1795	1610
Q Serve(g_s), s	5.0	0.3	0.9	9.3	5.6	6.8
Cycle Q Clear(g_c), s	5.0	0.3	5.9	9.3	5.6	6.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1362	710	657	1351	207	185
V/C Ratio(X)	0.25	0.02	0.04	0.40	0.61	0.73
Avail Cap(c_a), veh/h	1362	710	657	1351	757	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.9	3.2	4.9	4.5	35.0	35.5
Incr Delay (d2), s/veh	0.4	0.1	0.1	0.9	3.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.1	0.2	4.1	4.6	5.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.3	3.3	5.0	5.4	38.0	41.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	348			564	263	
Approach Delay, s/veh	4.3			5.3	39.6	
Approach LOS	A			A	D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	67.0	16.1	67.0
Change Period (Y+Rc), s	7.0	6.5	7.0
Max Green Setting (Gmax), s	60.0	35.0	60.0
Max Q Clear Time (g_c+I1), s	7.0	8.8	11.3
Green Ext Time (p_c), s	1.9	0.8	3.5

Intersection Summary	
HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	499	155	41	812	41	152	107	44	47	184	36
Future Volume (veh/h)	42	499	155	41	812	41	152	107	44	47	184	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1870	1870	1737	1870	1870	1796	1841	1841	1870	1737	1737
Adj Flow Rate, veh/h	44	520	161	43	846	43	158	111	46	49	192	38
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	2	2	11	2	2	7	4	4	2	11	11
Cap, veh/h	179	765	237	290	985	50	277	352	146	351	401	79
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	610	1370	424	705	1765	90	1105	1236	512	1230	1408	279
Grp Volume(v), veh/h	44	0	681	43	0	889	158	0	157	49	0	230
Grp Sat Flow(s),veh/h/ln	610	0	1794	705	0	1854	1105	0	1749	1230	0	1687
Q Serve(g_s), s	5.5	0.0	22.4	3.8	0.0	33.7	11.4	0.0	5.8	2.7	0.0	9.4
Cycle Q Clear(g_c), s	39.2	0.0	22.4	26.2	0.0	33.7	20.8	0.0	5.8	8.5	0.0	9.4
Prop In Lane	1.00		0.24	1.00		0.05	1.00		0.29	1.00		0.17
Lane Grp Cap(c), veh/h	179	0	1001	290	0	1035	277	0	498	351	0	481
V/C Ratio(X)	0.25	0.00	0.68	0.15	0.00	0.86	0.57	0.00	0.32	0.14	0.00	0.48
Avail Cap(c_a), veh/h	354	0	1516	492	0	1566	362	0	633	445	0	611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.2	0.0	13.0	22.4	0.0	15.5	33.1	0.0	23.3	26.6	0.0	24.5
Incr Delay (d2), s/veh	0.7	0.0	0.8	0.2	0.0	3.2	1.8	0.0	0.4	0.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.0	11.7	1.1	0.0	17.5	5.4	0.0	4.1	1.4	0.0	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.9	0.0	13.9	22.6	0.0	18.8	35.0	0.0	23.6	26.8	0.0	25.3
LnGrp LOS	C	A	B	C	A	B	C	A	C	C	A	C
Approach Vol, veh/h		725			932			315			279	
Approach Delay, s/veh		15.0			19.0			29.3			25.5	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		53.2		29.6		53.2		29.6				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		41.2		22.8		35.7		11.4				
Green Ext Time (p_c), s		5.1		0.8		7.4		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			20.0									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	7.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↑			↑			↕	
Traffic Vol, veh/h	27	605	35	42	871	39	39	7	37	29	6	29
Future Vol, veh/h	27	605	35	42	871	39	39	7	37	29	6	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	2	0	4	2	3	0	0	0	4	0	0
Mvmt Flow	28	617	36	43	889	40	40	7	38	30	6	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	929	0	0	653	0	0	1704	1706	635	1709	1704	909
Stage 1	-	-	-	-	-	-	691	691	-	995	995	-
Stage 2	-	-	-	-	-	-	1013	1015	-	714	709	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.1	6.5	6.2	7.14	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.5	4	3.3	3.536	4	3.3
Pot Cap-1 Maneuver	744	-	-	924	-	-	73	92	482	71	93	336
Stage 1	-	-	-	-	-	-	438	449	-	292	325	-
Stage 2	-	-	-	-	-	-	291	318	-	419	440	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	744	-	-	924	-	-	58	83	482	56	83	336
Mov Cap-2 Maneuver	-	-	-	-	-	-	58	83	-	56	83	-
Stage 1	-	-	-	-	-	-	412	423	-	275	310	-
Stage 2	-	-	-	-	-	-	248	303	-	357	414	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.4	82.4	101.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	58	273	744	-	-	924	-	-	95
HCM Lane V/C Ratio	0.686	0.164	0.037	-	-	0.046	-	-	0.687
HCM Control Delay (s)	151.9	20.8	10	0	-	9.1	-	-	101.7
HCM Lane LOS	F	C	B	A	-	A	-	-	F
HCM 95th %tile Q(veh)	2.9	0.6	0.1	-	-	0.1	-	-	3.4

Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	12	0	0	29	27	7
Future Vol, veh/h	12	0	0	29	27	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	4	13	3
Mvmt Flow	13	0	0	30	28	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	28	7
Stage 1	-	-	-	-	13	-
Stage 2	-	-	-	-	15	-
Critical Hdwy	-	-	-	-	7.06	6.96
Critical Hdwy Stg 1	-	-	-	-	6.06	-
Critical Hdwy Stg 2	-	-	-	-	6.06	-
Follow-up Hdwy	-	-	-	-	3.63	3.33
Pot Cap-1 Maneuver	-	0	0	-	952	1070
Stage 1	-	0	0	-	977	-
Stage 2	-	0	0	-	974	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	952	1070
Mov Cap-2 Maneuver	-	-	-	-	952	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	974	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	952	1070	-	-
HCM Lane V/C Ratio	0.03	0.007	-	-
HCM Control Delay (s)	8.9	8.4	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	664	7	12	927	25	46
Future Vol, veh/h	664	7	12	927	25	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	4	17	2	4	11
Mvmt Flow	722	8	13	1008	27	50

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	722	0	1756	722
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	1034	-
Critical Hdwy	-	-	4.27	-	6.44	6.31
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.353	-	3.536	3.399
Pot Cap-1 Maneuver	-	0	815	-	92	412
Stage 1	-	0	-	-	477	-
Stage 2	-	0	-	-	340	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	815	-	89	412
Mov Cap-2 Maneuver	-	-	-	-	216	-
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	328	-

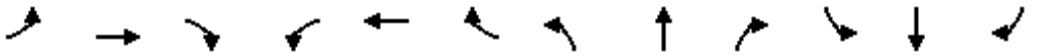
Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	18.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	216	412	-	815	-
HCM Lane V/C Ratio	0.126	0.121	-	0.016	-
HCM Control Delay (s)	24.1	14.9	-	9.5	-
HCM Lane LOS	C	B	-	A	-
HCM 95th %tile Q(veh)	0.4	0.4	-	0	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	376	14	9	385	20	24
Future Volume (veh/h)	376	14	9	385	20	24
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1648	1900	1885	1633	1900
Adj Flow Rate, veh/h	392	15	9	401	21	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	17	0	1	18	0
Cap, veh/h	1440	1067	789	1440	100	104
Arrive On Green	0.76	0.76	0.76	0.76	0.06	0.06
Sat Flow, veh/h	1885	1397	994	1885	1555	1610
Grp Volume(v), veh/h	392	15	9	401	21	25
Grp Sat Flow(s),veh/h/ln	1885	1397	994	1885	1555	1610
Q Serve(g_s), s	4.9	0.2	0.2	5.0	1.0	1.2
Cycle Q Clear(g_c), s	4.9	0.2	5.1	5.0	1.0	1.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1440	1067	789	1440	100	104
V/C Ratio(X)	0.27	0.01	0.01	0.28	0.21	0.24
Avail Cap(c_a), veh/h	1440	1067	789	1440	693	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.8	2.2	3.5	2.8	34.8	34.9
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.5	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	0.0	0.1	1.6	0.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.2	2.2	3.6	3.3	35.9	36.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	407			410	46	
Approach Delay, s/veh	3.2			3.3	36.0	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		11.6		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		6.9		3.2		7.1
Green Ext Time (p_c), s		2.3		0.1		2.3

Intersection Summary	
HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	590	156	39	630	84	125	222	49	51	153	48
Future Volume (veh/h)	52	590	156	39	630	84	125	222	49	51	153	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1885	1811	1885	1885	1781	1870	1870	1900	1841	1841
Adj Flow Rate, veh/h	55	621	164	41	663	88	132	234	52	54	161	51
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	1	1	6	1	1	8	2	2	0	4	4
Cap, veh/h	276	799	211	245	906	120	282	391	87	240	353	112
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	700	1437	380	667	1630	216	1114	1482	329	1110	1340	424
Grp Volume(v), veh/h	55	0	785	41	0	751	132	0	286	54	0	212
Grp Sat Flow(s),veh/h/ln	700	0	1817	667	0	1846	1114	0	1811	1110	0	1764
Q Serve(g_s), s	4.6	0.0	24.3	3.7	0.0	21.9	8.1	0.0	9.9	3.2	0.0	7.2
Cycle Q Clear(g_c), s	26.5	0.0	24.3	28.0	0.0	21.9	15.3	0.0	9.9	13.2	0.0	7.2
Prop In Lane	1.00		0.21	1.00		0.12	1.00		0.18	1.00		0.24
Lane Grp Cap(c), veh/h	276	0	1009	245	0	1026	282	0	478	240	0	465
V/C Ratio(X)	0.20	0.00	0.78	0.17	0.00	0.73	0.47	0.00	0.60	0.23	0.00	0.46
Avail Cap(c_a), veh/h	568	0	1767	523	0	1795	452	0	755	409	0	735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.9	0.0	12.5	23.5	0.0	12.0	28.6	0.0	23.2	28.9	0.0	22.2
Incr Delay (d2), s/veh	0.4	0.0	1.3	0.3	0.0	1.0	1.2	0.0	1.2	0.5	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.0	11.9	1.0	0.0	11.0	3.7	0.0	7.1	1.5	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.3	0.0	13.8	23.8	0.0	13.0	29.8	0.0	24.4	29.4	0.0	22.9
LnGrp LOS	C	A	B	C	A	B	C	A	C	C	A	C
Approach Vol, veh/h		840			792			418			266	
Approach Delay, s/veh		14.4			13.6			26.1			24.2	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.0		25.0		47.0		25.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		28.5		17.3		30.0		15.2				
Green Ext Time (p_c), s		6.5		1.7		5.9		1.1				

Intersection Summary												
HCM 6th Ctrl Delay			17.3									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	8.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	663	42	44	675	31	37	7	41	30	3	37
Future Vol, veh/h	41	663	42	44	675	31	37	7	41	30	3	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	5	1	0	0	2	5	0	0	0	8	0	0
Mvmt Flow	44	705	45	47	718	33	39	7	44	32	3	39

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	751	0	0	750	0	0	1666	1661	728	1670	1667	735
Stage 1	-	-	-	-	-	-	816	816	-	829	829	-
Stage 2	-	-	-	-	-	-	850	845	-	841	838	-
Critical Hdwy	4.15	-	-	4.1	-	-	7.1	6.5	6.2	7.18	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Follow-up Hdwy	2.245	-	-	2.2	-	-	3.5	4	3.3	3.572	4	3.3
Pot Cap-1 Maneuver	845	-	-	868	-	-	78	98	427	74	97	423
Stage 1	-	-	-	-	-	-	374	393	-	356	388	-
Stage 2	-	-	-	-	-	-	358	382	-	351	384	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	845	-	-	868	-	-	61	84	427	55	84	423
Mov Cap-2 Maneuver	-	-	-	-	-	-	61	84	-	55	84	-
Stage 1	-	-	-	-	-	-	340	358	-	324	367	-
Stage 2	-	-	-	-	-	-	304	361	-	281	349	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.6	72.1	97.2
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	61	268	845	-	-	868	-	-	105
HCM Lane V/C Ratio	0.645	0.191	0.052	-	-	0.054	-	-	0.709
HCM Control Delay (s)	137.5	21.6	9.5	0	-	9.4	-	-	97.2
HCM Lane LOS	F	C	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	2.7	0.7	0.2	-	-	0.2	-	-	3.7

Intersection	
Int Delay, s/veh	5.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	147	0	0	360	194	298
Future Vol, veh/h	147	0	0	360	194	298
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	5	3	2
Mvmt Flow	152	0	0	371	200	307

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	338	76
Stage 1	-	-	-	-	152	-
Stage 2	-	-	-	-	186	-
Critical Hdwy	-	-	-	-	6.86	6.94
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	-	-	-	-	3.53	3.32
Pot Cap-1 Maneuver	-	0	0	-	629	970
Stage 1	-	0	0	-	857	-
Stage 2	-	0	0	-	824	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	629	970
Mov Cap-2 Maneuver	-	-	-	-	629	-
Stage 1	-	-	-	-	857	-
Stage 2	-	-	-	-	824	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	629	970	-	-
HCM Lane V/C Ratio	0.318	0.317	-	-
HCM Control Delay (s)	13.4	10.4	-	-
HCM Lane LOS	B	B	-	-
HCM 95th %tile Q(veh)	1.4	1.4	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	723	11	21	727	23	44
Future Vol, veh/h	723	11	21	727	23	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	9	14	2	4	11
Mvmt Flow	786	12	23	790	25	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	786	0	1622	786
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	836	-
Critical Hdwy	-	-	4.24	-	6.44	6.31
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.326	-	3.536	3.399
Pot Cap-1 Maneuver	-	0	782	-	112	378
Stage 1	-	0	-	-	446	-
Stage 2	-	0	-	-	422	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	782	-	106	378
Mov Cap-2 Maneuver	-	-	-	-	241	-
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	400	-

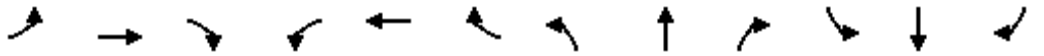
Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	17.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	241	378	-	782	-
HCM Lane V/C Ratio	0.104	0.127	-	0.029	-
HCM Control Delay (s)	21.7	15.9	-	9.7	-
HCM Lane LOS	C	C	-	A	-
HCM 95th %tile Q(veh)	0.3	0.4	-	0.1	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	401	61	44	225	36	21
Future Volume (veh/h)	401	61	44	225	36	21
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1722	1678	1767	1278	1248
Adj Flow Rate, veh/h	451	69	49	253	40	24
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	12	15	9	42	44
Cap, veh/h	1355	1101	622	1332	93	80
Arrive On Green	0.75	0.75	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1796	1459	791	1767	1217	1058
Grp Volume(v), veh/h	451	69	49	253	40	24
Grp Sat Flow(s),veh/h/ln	1796	1459	791	1767	1217	1058
Q Serve(g_s), s	6.6	1.0	1.7	3.3	2.5	1.7
Cycle Q Clear(g_c), s	6.6	1.0	8.3	3.3	2.5	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1355	1101	622	1332	93	80
V/C Ratio(X)	0.33	0.06	0.08	0.19	0.43	0.30
Avail Cap(c_a), veh/h	1355	1101	622	1332	535	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.2	2.5	4.6	2.8	35.1	34.7
Incr Delay (d2), s/veh	0.7	0.1	0.2	0.3	3.2	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.3	0.4	1.1	1.5	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.9	2.6	4.8	3.1	38.3	36.8
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	520			302	64	
Approach Delay, s/veh	3.7			3.4	37.7	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		12.6		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		8.6		4.5		10.3
Green Ext Time (p_c), s		2.9		0.2		1.7

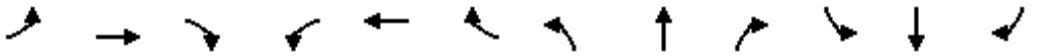
Intersection Summary	
HCM 6th Ctrl Delay	6.1
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	779	17	56	352	17	12	2	5	19	17	44
Future Volume (veh/h)	15	779	17	56	352	17	12	2	5	19	17	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811	1722	1693	1693	1574	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	16	829	18	60	374	18	13	2	5	20	18	47
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	12	14	14	22	0	0	0	0	0
Cap, veh/h	53	1319	28	479	1213	58	193	41	103	74	41	78
Arrive On Green	0.76	0.76	0.76	0.76	0.76	0.76	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	13	1742	37	599	1602	77	1125	481	1203	262	476	912
Grp Volume(v), veh/h	863	0	0	60	0	392	13	0	7	85	0	0
Grp Sat Flow(s),veh/h/ln	1793	0	0	599	0	1679	1125	0	1684	1650	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	6.4	0.0	0.0	0.3	1.9	0.0	0.0
Cycle Q Clear(g_c), s	19.1	0.0	0.0	4.5	0.0	6.4	0.7	0.0	0.3	4.2	0.0	0.0
Prop In Lane	0.02		0.02	1.00		0.05	1.00		0.71	0.24		0.55
Lane Grp Cap(c), veh/h	1400	0	0	479	0	1271	193	0	144	193	0	0
V/C Ratio(X)	0.62	0.00	0.00	0.13	0.00	0.31	0.07	0.00	0.05	0.44	0.00	0.00
Avail Cap(c_a), veh/h	1400	0	0	479	0	1271	509	0	618	647	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.9	0.0	0.0	3.1	0.0	3.3	36.2	0.0	36.0	37.8	0.0	0.0
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.5	0.0	0.6	0.1	0.0	0.1	1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.4	0.0	0.0	0.4	0.0	2.2	0.5	0.0	0.2	3.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.9	0.0	0.0	3.6	0.0	3.9	36.4	0.0	36.2	39.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	A
Approach Vol, veh/h		863			452			20			85	
Approach Delay, s/veh		6.9			3.9			36.3			39.4	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		72.0		13.8		72.0		13.8				
Change Period (Y+Rc), s		7.0		6.5		7.0		6.5				
Max Green Setting (Gmax), s		65.0		31.5		65.0		31.5				
Max Q Clear Time (g_c+I1), s		21.1		2.7		8.4		6.2				
Green Ext Time (p_c), s		6.9		0.0		3.0		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			8.3									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	662	198	38	283	27	176	137	30	43	183	37
Future Volume (veh/h)	23	662	198	38	283	27	176	137	30	43	183	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1796	1796	1411	1693	1693	1752	1678	1678	1767	1826	1826
Adj Flow Rate, veh/h	26	761	228	44	325	31	202	157	34	49	210	43
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	7	7	33	14	14	10	15	15	9	5	5
Cap, veh/h	555	822	246	110	942	90	215	355	77	253	390	80
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	952	1327	398	429	1521	145	1055	1336	289	1126	1471	301
Grp Volume(v), veh/h	26	0	989	44	0	356	202	0	191	49	0	253
Grp Sat Flow(s),veh/h/ln	952	0	1725	429	0	1666	1055	0	1626	1126	0	1772
Q Serve(g_s), s	1.5	0.0	57.8	11.5	0.0	11.7	16.2	0.0	11.1	4.3	0.0	13.8
Cycle Q Clear(g_c), s	13.2	0.0	57.8	69.3	0.0	11.7	30.0	0.0	11.1	15.3	0.0	13.8
Prop In Lane	1.00		0.23	1.00		0.09	1.00		0.18	1.00		0.17
Lane Grp Cap(c), veh/h	555	0	1068	110	0	1032	215	0	432	253	0	470
V/C Ratio(X)	0.05	0.00	0.93	0.40	0.00	0.34	0.94	0.00	0.44	0.19	0.00	0.54
Avail Cap(c_a), veh/h	555	0	1068	110	0	1032	215	0	432	253	0	470
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	0.0	19.2	50.1	0.0	10.4	50.5	0.0	34.5	40.9	0.0	35.6
Incr Delay (d2), s/veh	0.0	0.0	13.3	2.3	0.0	0.2	44.9	0.0	0.7	0.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.0	30.7	2.3	0.0	6.7	13.0	0.0	7.7	2.1	0.0	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	0.0	32.5	52.4	0.0	10.6	95.4	0.0	35.3	41.3	0.0	36.8
LnGrp LOS	B	A	C	D	A	B	F	A	D	D	A	D
Approach Vol, veh/h		1015			400			393			302	
Approach Delay, s/veh		32.0			15.2			66.2			37.5	
Approach LOS		C			B			E			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		77.0		36.0		77.0		36.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		59.8		32.0		71.3		17.3				
Green Ext Time (p_c), s		5.0		0.0		0.0		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			36.0									
HCM 6th LOS			D									

Intersection	
Int Delay, s/veh	5.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	44	0	0	51	102	14
Future Vol, veh/h	44	0	0	51	102	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	14	0	0	9	11	4
Mvmt Flow	48	0	0	55	111	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	76	24
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	28	-
Critical Hdwy	-	-	-	-	7.02	6.98
Critical Hdwy Stg 1	-	-	-	-	6.02	-
Critical Hdwy Stg 2	-	-	-	-	6.02	-
Follow-up Hdwy	-	-	-	-	3.61	3.34
Pot Cap-1 Maneuver	-	0	0	-	893	1040
Stage 1	-	0	0	-	943	-
Stage 2	-	0	0	-	965	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	893	1040
Mov Cap-2 Maneuver	-	-	-	-	893	-
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	965	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	893	1040	-	-
HCM Lane V/C Ratio	0.124	0.015	-	-
HCM Control Delay (s)	9.6	8.5	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.4	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	771	32	40	422	3	22
Future Vol, veh/h	771	32	40	422	3	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	6	0	14	0	41
Mvmt Flow	838	35	43	459	3	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	838	0	1383	838
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	545	-
Critical Hdwy	-	-	4.1	-	6.4	6.61
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.669
Pot Cap-1 Maneuver	-	0	805	-	160	313
Stage 1	-	0	-	-	428	-
Stage 2	-	0	-	-	585	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	805	-	148	313
Mov Cap-2 Maneuver	-	-	-	-	285	-
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	543	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	17.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	285	313	-	805	-
HCM Lane V/C Ratio	0.011	0.076	-	0.054	-
HCM Control Delay (s)	17.8	17.5	-	9.7	-
HCM Lane LOS	C	C	-	A	-
HCM 95th %tile Q(veh)	0	0.2	-	0.2	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	310	13	26	507	117	125
Future Volume (veh/h)	310	13	26	507	117	125
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1159	1559	1870	1885	1900
Adj Flow Rate, veh/h	337	14	28	551	127	136
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	50	23	2	1	0
Cap, veh/h	1362	710	655	1351	207	185
Arrive On Green	0.72	0.72	0.72	0.72	0.12	0.12
Sat Flow, veh/h	1885	982	859	1870	1795	1610
Grp Volume(v), veh/h	337	14	28	551	127	136
Grp Sat Flow(s),veh/h/ln	1885	982	859	1870	1795	1610
Q Serve(g_s), s	5.0	0.3	0.9	9.6	5.6	6.8
Cycle Q Clear(g_c), s	5.0	0.3	6.0	9.6	5.6	6.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1362	710	655	1351	207	185
V/C Ratio(X)	0.25	0.02	0.04	0.41	0.61	0.73
Avail Cap(c_a), veh/h	1362	710	655	1351	757	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.9	3.2	4.9	4.5	35.0	35.5
Incr Delay (d2), s/veh	0.4	0.1	0.1	0.9	3.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.1	0.2	4.3	4.6	5.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.3	3.3	5.0	5.5	38.0	41.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	351			579	263	
Approach Delay, s/veh	4.3			5.4	39.6	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		16.1		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		7.0		8.8		11.6
Green Ext Time (p_c), s		1.9		0.8		3.6

Intersection Summary		
HCM 6th Ctrl Delay	12.6	
HCM 6th LOS	B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	608	35	55	869	31	55	22	37	27	10	29
Future Volume (veh/h)	27	608	35	55	869	31	55	22	37	27	10	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1722	1870	1870	1826	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	28	620	36	56	887	32	56	22	38	28	10	30
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	12	2	2	5	0	0	0	0	0
Cap, veh/h	72	1222	69	588	1328	48	234	60	103	101	39	62
Arrive On Green	0.74	0.74	0.74	0.74	0.74	0.74	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	36	1650	94	716	1794	65	1335	625	1080	413	411	651
Grp Volume(v), veh/h	684	0	0	56	0	919	56	0	60	68	0	0
Grp Sat Flow(s),veh/h/ln	1779	0	0	716	0	1859	1335	0	1706	1475	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	20.9	0.0	0.0	2.7	1.0	0.0	0.0
Cycle Q Clear(g_c), s	12.5	0.0	0.0	2.6	0.0	20.9	2.5	0.0	2.7	3.8	0.0	0.0
Prop In Lane	0.04		0.05	1.00		0.03	1.00		0.63	0.41		0.44
Lane Grp Cap(c), veh/h	1363	0	0	588	0	1376	234	0	163	203	0	0
V/C Ratio(X)	0.50	0.00	0.00	0.10	0.00	0.67	0.24	0.00	0.37	0.34	0.00	0.00
Avail Cap(c_a), veh/h	1363	0	0	588	0	1376	681	0	735	716	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.4	0.0	0.0	3.1	0.0	5.5	34.8	0.0	34.9	35.2	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.3	0.0	2.6	0.5	0.0	1.4	1.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.1	0.0	0.0	0.3	0.0	8.5	1.9	0.0	2.1	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.7	0.0	0.0	3.4	0.0	8.1	35.3	0.0	36.3	36.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	A
Approach Vol, veh/h		684			975			116			68	
Approach Delay, s/veh		5.7			7.8			35.8			36.2	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		68.0		14.4		68.0		14.4				
Change Period (Y+Rc), s		7.0		6.5		7.0		6.5				
Max Green Setting (Gmax), s		61.0		35.5		61.0		35.5				
Max Q Clear Time (g_c+I1), s		14.5		4.7		22.9		5.8				
Green Ext Time (p_c), s		5.0		0.5		8.1		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			9.8									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	499	193	41	812	41	162	107	44	47	184	36
Future Volume (veh/h)	42	499	193	41	812	41	162	107	44	47	184	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1870	1870	1737	1870	1870	1781	1841	1841	1870	1737	1737
Adj Flow Rate, veh/h	44	520	201	43	846	43	169	111	46	49	192	38
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	2	2	11	2	2	8	4	4	2	11	11
Cap, veh/h	175	717	277	258	985	50	281	361	150	356	411	81
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	610	1284	497	680	1765	90	1096	1236	512	1230	1408	279
Grp Volume(v), veh/h	44	0	721	43	0	889	169	0	157	49	0	230
Grp Sat Flow(s),veh/h/ln	610	0	1781	680	0	1854	1096	0	1749	1230	0	1687
Q Serve(g_s), s	5.7	0.0	26.1	4.4	0.0	35.3	13.0	0.0	6.1	2.8	0.0	9.7
Cycle Q Clear(g_c), s	41.1	0.0	26.1	30.5	0.0	35.3	22.7	0.0	6.1	8.9	0.0	9.7
Prop In Lane	1.00		0.28	1.00		0.05	1.00		0.29	1.00		0.17
Lane Grp Cap(c), veh/h	175	0	994	258	0	1035	281	0	511	356	0	493
V/C Ratio(X)	0.25	0.00	0.73	0.17	0.00	0.86	0.60	0.00	0.31	0.14	0.00	0.47
Avail Cap(c_a), veh/h	326	0	1435	426	0	1494	339	0	604	422	0	583
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.7	0.0	14.2	25.5	0.0	16.3	34.5	0.0	23.9	27.4	0.0	25.2
Incr Delay (d2), s/veh	0.7	0.0	1.0	0.3	0.0	3.7	2.1	0.0	0.3	0.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	0.0	13.4	1.2	0.0	18.6	6.1	0.0	4.3	1.4	0.0	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	0.0	15.3	25.8	0.0	19.9	36.6	0.0	24.2	27.5	0.0	25.9
LnGrp LOS	C	A	B	C	A	B	D	A	C	C	A	C
Approach Vol, veh/h		765			932			326			279	
Approach Delay, s/veh		16.4			20.2			30.6			26.2	
Approach LOS		B			C			C			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	55.5	31.4	55.5	31.4
Change Period (Y+Rc), s	7.0	6.0	7.0	6.0
Max Green Setting (Gmax), s	70.0	30.0	70.0	30.0
Max Q Clear Time (g_c+I1), s	43.1	24.7	37.3	11.7
Green Ext Time (p_c), s	5.4	0.7	7.4	1.2

Intersection Summary	
HCM 6th Ctrl Delay	21.1
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	19	0	0	31	35	7
Future Vol, veh/h	19	0	0	31	35	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	4	15	3
Mvmt Flow	20	0	0	32	36	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	36	10
Stage 1	-	-	-	-	20	-
Stage 2	-	-	-	-	16	-
Critical Hdwy	-	-	-	-	7.1	6.96
Critical Hdwy Stg 1	-	-	-	-	6.1	-
Critical Hdwy Stg 2	-	-	-	-	6.1	-
Follow-up Hdwy	-	-	-	-	3.65	3.33
Pot Cap-1 Maneuver	-	0	0	-	936	1065
Stage 1	-	0	0	-	963	-
Stage 2	-	0	0	-	968	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	936	1065
Mov Cap-2 Maneuver	-	-	-	-	936	-
Stage 1	-	-	-	-	963	-
Stage 2	-	-	-	-	968	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	936	1065	-	-
HCM Lane V/C Ratio	0.039	0.007	-	-
HCM Control Delay (s)	9	8.4	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	664	8	9	940	15	84
Future Vol, veh/h	664	8	9	940	15	84
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	20	0	2	0	11
Mvmt Flow	722	9	10	1022	16	91

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	722	0	1764	722
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	1042	-
Critical Hdwy	-	-	4.1	-	6.4	6.31
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.399
Pot Cap-1 Maneuver	-	0	889	-	93	412
Stage 1	-	0	-	-	485	-
Stage 2	-	0	-	-	343	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	889	-	91	412
Mov Cap-2 Maneuver	-	-	-	-	220	-
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	334	-

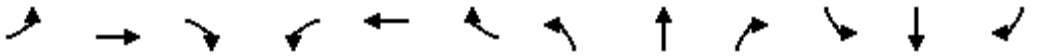
Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	17.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	220	412	-	889	-
HCM Lane V/C Ratio	0.074	0.222	-	0.011	-
HCM Control Delay (s)	22.7	16.2	-	9.1	-
HCM Lane LOS	C	C	-	A	-
HCM 95th %tile Q(veh)	0.2	0.8	-	0	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	382	14	9	399	20	24
Future Volume (veh/h)	382	14	9	399	20	24
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1648	1900	1885	1633	1900
Adj Flow Rate, veh/h	398	15	9	416	21	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	17	0	1	18	0
Cap, veh/h	1440	1067	784	1440	100	104
Arrive On Green	0.76	0.76	0.76	0.76	0.06	0.06
Sat Flow, veh/h	1885	1397	988	1885	1555	1610
Grp Volume(v), veh/h	398	15	9	416	21	25
Grp Sat Flow(s),veh/h/ln	1885	1397	988	1885	1555	1610
Q Serve(g_s), s	5.0	0.2	0.2	5.3	1.0	1.2
Cycle Q Clear(g_c), s	5.0	0.2	5.2	5.3	1.0	1.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1440	1067	784	1440	100	104
V/C Ratio(X)	0.28	0.01	0.01	0.29	0.21	0.24
Avail Cap(c_a), veh/h	1440	1067	784	1440	693	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.8	2.2	3.6	2.8	34.8	34.9
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.5	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	0.0	0.1	1.7	0.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.3	2.2	3.6	3.3	35.9	36.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	413			425	46	
Approach Delay, s/veh	3.2			3.3	36.0	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		11.6		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		7.0		3.2		7.3
Green Ext Time (p_c), s		2.3		0.1		2.4

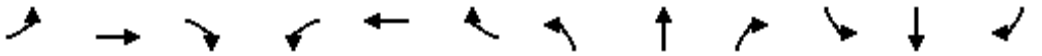
Intersection Summary	
HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	669	42	65	674	22	52	21	41	26	10	37
Future Volume (veh/h)	41	669	42	65	674	22	52	21	41	26	10	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1796	1870	1870	1811	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	44	712	45	69	717	23	55	22	44	28	11	39
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	7	2	2	6	0	0	0	0	0
Cap, veh/h	89	1197	74	544	1334	43	224	54	109	92	35	68
Arrive On Green	0.74	0.74	0.74	0.74	0.74	0.74	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	58	1618	100	680	1802	58	1312	565	1131	342	369	711
Grp Volume(v), veh/h	801	0	0	69	0	740	55	0	66	78	0	0
Grp Sat Flow(s),veh/h/ln	1775	0	0	680	0	1860	1312	0	1696	1423	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	14.2	0.0	0.0	3.0	1.6	0.0	0.0
Cycle Q Clear(g_c), s	16.1	0.0	0.0	4.0	0.0	14.2	2.8	0.0	3.0	4.6	0.0	0.0
Prop In Lane	0.05		0.06	1.00		0.03	1.00		0.67	0.36		0.50
Lane Grp Cap(c), veh/h	1360	0	0	544	0	1377	224	0	163	196	0	0
V/C Ratio(X)	0.59	0.00	0.00	0.13	0.00	0.54	0.25	0.00	0.41	0.40	0.00	0.00
Avail Cap(c_a), veh/h	1360	0	0	544	0	1377	663	0	731	711	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.9	0.0	0.0	3.3	0.0	4.6	35.0	0.0	35.0	35.6	0.0	0.0
Incr Delay (d2), s/veh	1.9	0.0	0.0	0.5	0.0	1.5	0.6	0.0	1.6	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.8	0.0	0.0	0.4	0.0	5.8	1.9	0.0	2.3	2.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.8	0.0	0.0	3.8	0.0	6.1	35.5	0.0	36.7	36.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	A
Approach Vol, veh/h		801			809			121			78	
Approach Delay, s/veh		6.8			5.9			36.1			36.9	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		68.0		14.4		68.0		14.4				
Change Period (Y+Rc), s		7.0		6.5		7.0		6.5				
Max Green Setting (Gmax), s		61.0		35.5		61.0		35.5				
Max Q Clear Time (g_c+I1), s		18.1		5.0		16.2		6.6				
Green Ext Time (p_c), s		6.4		0.5		6.0		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			9.7									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	590	192	39	630	84	142	222	49	51	153	48
Future Volume (veh/h)	52	590	192	39	630	84	142	222	49	51	153	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1885	1811	1885	1885	1781	1870	1870	1900	1841	1841
Adj Flow Rate, veh/h	55	621	202	41	663	88	149	234	52	54	161	51
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	1	1	6	1	1	8	2	2	0	4	4
Cap, veh/h	263	745	242	206	891	118	295	409	91	254	369	117
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	700	1362	443	644	1630	216	1114	1482	329	1110	1340	424
Grp Volume(v), veh/h	55	0	823	41	0	751	149	0	286	54	0	212
Grp Sat Flow(s),veh/h/ln	700	0	1805	644	0	1846	1114	0	1811	1110	0	1764
Q Serve(g_s), s	4.8	0.0	27.8	4.1	0.0	22.8	9.3	0.0	9.9	3.2	0.0	7.2
Cycle Q Clear(g_c), s	27.5	0.0	27.8	31.9	0.0	22.8	16.5	0.0	9.9	13.2	0.0	7.2
Prop In Lane	1.00		0.25	1.00		0.12	1.00		0.18	1.00		0.24
Lane Grp Cap(c), veh/h	263	0	987	206	0	1009	295	0	499	254	0	486
V/C Ratio(X)	0.21	0.00	0.83	0.20	0.00	0.74	0.50	0.00	0.57	0.21	0.00	0.44
Avail Cap(c_a), veh/h	551	0	1727	470	0	1766	445	0	742	403	0	723
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.2	0.0	13.8	27.1	0.0	12.7	28.6	0.0	22.8	28.4	0.0	21.8
Incr Delay (d2), s/veh	0.4	0.0	1.9	0.5	0.0	1.1	1.3	0.0	1.0	0.4	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.0	13.6	1.1	0.0	11.6	4.3	0.0	7.1	1.5	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	0.0	15.8	27.6	0.0	13.8	30.0	0.0	23.8	28.9	0.0	22.4
LnGrp LOS	C	A	B	C	A	B	C	A	C	C	A	C
Approach Vol, veh/h		878			792			435			266	
Approach Delay, s/veh		16.2			14.5			25.9			23.7	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.0		26.2		47.0		26.2				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		29.8		18.5		33.9		15.2				
Green Ext Time (p_c), s		7.1		1.6		5.8		1.1				

Intersection Summary												
HCM 6th Ctrl Delay			18.3									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	5.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	153	0	0	363	208	298
Future Vol, veh/h	153	0	0	363	208	298
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	5	4	2
Mvmt Flow	158	0	0	374	214	307

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	345	79
Stage 1	-	-	-	-	158	-
Stage 2	-	-	-	-	187	-
Critical Hdwy	-	-	-	-	6.88	6.94
Critical Hdwy Stg 1	-	-	-	-	5.88	-
Critical Hdwy Stg 2	-	-	-	-	5.88	-
Follow-up Hdwy	-	-	-	-	3.54	3.32
Pot Cap-1 Maneuver	-	0	0	-	620	965
Stage 1	-	0	0	-	848	-
Stage 2	-	0	0	-	820	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	620	965
Mov Cap-2 Maneuver	-	-	-	-	620	-
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	820	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	620	965	-	-
HCM Lane V/C Ratio	0.346	0.318	-	-
HCM Control Delay (s)	13.8	10.5	-	-
HCM Lane LOS	B	B	-	-
HCM 95th %tile Q(veh)	1.5	1.4	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	723	13	17	747	14	80
Future Vol, veh/h	723	13	17	747	14	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	14	0	2	0	11
Mvmt Flow	786	14	18	812	15	87

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	786	0	1634	786
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	848	-
Critical Hdwy	-	-	4.1	-	6.4	6.31
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.399
Pot Cap-1 Maneuver	-	0	842	-	112	378
Stage 1	-	0	-	-	453	-
Stage 2	-	0	-	-	423	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	842	-	108	378
Mov Cap-2 Maneuver	-	-	-	-	245	-
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	407	-

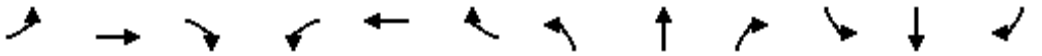
Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	17.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	245	378	-	842	-
HCM Lane V/C Ratio	0.062	0.23	-	0.022	-
HCM Control Delay (s)	20.7	17.3	-	9.4	-
HCM Lane LOS	C	C	-	A	-
HCM 95th %tile Q(veh)	0.2	0.9	-	0.1	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	401	61	44	225	36	21
Future Volume (veh/h)	401	61	44	225	36	21
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1722	1678	1767	1278	1248
Adj Flow Rate, veh/h	451	69	49	253	40	24
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	12	15	9	42	44
Cap, veh/h	1355	1101	622	1332	93	80
Arrive On Green	0.75	0.75	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1796	1459	791	1767	1217	1058
Grp Volume(v), veh/h	451	69	49	253	40	24
Grp Sat Flow(s),veh/h/ln	1796	1459	791	1767	1217	1058
Q Serve(g_s), s	6.6	1.0	1.7	3.3	2.5	1.7
Cycle Q Clear(g_c), s	6.6	1.0	8.3	3.3	2.5	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1355	1101	622	1332	93	80
V/C Ratio(X)	0.33	0.06	0.08	0.19	0.43	0.30
Avail Cap(c_a), veh/h	1355	1101	622	1332	535	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.2	2.5	4.6	2.8	35.1	34.7
Incr Delay (d2), s/veh	0.7	0.1	0.2	0.3	3.2	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.3	0.4	1.1	1.5	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.9	2.6	4.8	3.1	38.3	36.8
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	520			302	64	
Approach Delay, s/veh	3.7			3.4	37.7	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		12.6		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		8.6		4.5		10.3
Green Ext Time (p_c), s		2.9		0.2		1.7

Intersection Summary	
HCM 6th Ctrl Delay	6.1
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	662	198	38	283	27	176	137	30	43	183	37
Future Volume (veh/h)	23	662	198	38	283	27	176	137	30	43	183	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1796	1796	1411	1693	1693	1752	1678	1678	1767	1826	1826
Adj Flow Rate, veh/h	26	761	228	44	325	31	202	157	34	49	210	43
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	7	7	33	14	14	10	15	15	9	5	5
Cap, veh/h	555	822	246	110	942	90	215	355	77	253	390	80
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	952	1327	398	429	1521	145	1055	1336	289	1126	1471	301
Grp Volume(v), veh/h	26	0	989	44	0	356	202	0	191	49	0	253
Grp Sat Flow(s),veh/h/ln	952	0	1725	429	0	1666	1055	0	1626	1126	0	1772
Q Serve(g_s), s	1.5	0.0	57.8	11.5	0.0	11.7	16.2	0.0	11.1	4.3	0.0	13.8
Cycle Q Clear(g_c), s	13.2	0.0	57.8	69.3	0.0	11.7	30.0	0.0	11.1	15.3	0.0	13.8
Prop In Lane	1.00		0.23	1.00		0.09	1.00		0.18	1.00		0.17
Lane Grp Cap(c), veh/h	555	0	1068	110	0	1032	215	0	432	253	0	470
V/C Ratio(X)	0.05	0.00	0.93	0.40	0.00	0.34	0.94	0.00	0.44	0.19	0.00	0.54
Avail Cap(c_a), veh/h	555	0	1068	110	0	1032	215	0	432	253	0	470
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	0.0	19.2	50.1	0.0	10.4	50.5	0.0	34.5	40.9	0.0	35.6
Incr Delay (d2), s/veh	0.0	0.0	13.3	2.3	0.0	0.2	44.9	0.0	0.7	0.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.0	30.7	2.3	0.0	6.7	13.0	0.0	7.7	2.1	0.0	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	0.0	32.5	52.4	0.0	10.6	95.4	0.0	35.3	41.3	0.0	36.8
LnGrp LOS	B	A	C	D	A	B	F	A	D	D	A	D
Approach Vol, veh/h		1015			400			393			302	
Approach Delay, s/veh		32.0			15.2			66.2			37.5	
Approach LOS		C			B			E			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		77.0		36.0		77.0		36.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		59.8		32.0		71.3		17.3				
Green Ext Time (p_c), s		5.0		0.0		0.0		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			36.0									
HCM 6th LOS			D									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	772	48	85	377	9	22
Future Volume (veh/h)	772	48	85	377	9	22
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1811	1693	1693	1574	1292
Adj Flow Rate, veh/h	839	52	92	410	10	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	14	14	22	41
Cap, veh/h	1300	81	179	746	81	59
Arrive On Green	0.77	0.77	0.77	0.77	0.05	0.05
Sat Flow, veh/h	1688	105	160	968	1499	1095
Grp Volume(v), veh/h	0	891	502	0	10	24
Grp Sat Flow(s),veh/h/ln	0	1792	1128	0	1499	1095
Q Serve(g_s), s	0.0	17.4	5.8	0.0	0.5	1.6
Cycle Q Clear(g_c), s	0.0	17.4	23.2	0.0	0.5	1.6
Prop In Lane		0.06	0.18		1.00	1.00
Lane Grp Cap(c), veh/h	0	1380	924	0	81	59
V/C Ratio(X)	0.00	0.65	0.54	0.00	0.12	0.41
Avail Cap(c_a), veh/h	0	1380	924	0	704	515
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.0	3.7	0.0	34.5	35.1
Incr Delay (d2), s/veh	0.0	2.3	2.3	0.0	0.7	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	5.2	2.5	0.0	0.3	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.4	6.0	0.0	35.2	39.5
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	891			502	34	
Approach Delay, s/veh	6.4			6.0	38.3	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		66.0		10.6		66.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		59.0		36.0		59.0
Max Q Clear Time (g_c+I1), s		19.4		3.6		25.2
Green Ext Time (p_c), s		7.2		0.1		3.9

Intersection Summary	
HCM 6th Ctrl Delay	7.0
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	779	17	11	356	19	8	0	5	36	1	44
Future Vol, veh/h	15	779	17	11	356	19	8	0	5	36	1	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	6	10	20	14	14	0	0	50	0	0	0
Mvmt Flow	16	829	18	12	379	20	9	0	5	38	1	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	399	0	0	847	0	0	1307	1293	838	1286	1292	389
Stage 1	-	-	-	-	-	-	870	870	-	413	413	-
Stage 2	-	-	-	-	-	-	437	423	-	873	879	-
Critical Hdwy	4.1	-	-	4.3	-	-	7.1	6.5	6.7	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.38	-	-	3.5	4	3.75	3.5	4	3.3
Pot Cap-1 Maneuver	1171	-	-	718	-	-	138	164	303	143	165	664
Stage 1	-	-	-	-	-	-	349	372	-	620	597	-
Stage 2	-	-	-	-	-	-	602	591	-	348	368	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1171	-	-	718	-	-	123	156	303	135	157	664
Mov Cap-2 Maneuver	-	-	-	-	-	-	123	156	-	135	157	-
Stage 1	-	-	-	-	-	-	340	362	-	604	584	-
Stage 2	-	-	-	-	-	-	546	578	-	333	358	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	29	28.3
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	123	303	1171	-	-	718	-	-	239
HCM Lane V/C Ratio	0.069	0.018	0.014	-	-	0.016	-	-	0.361
HCM Control Delay (s)	36.4	17.1	8.1	0	-	10.1	0	-	28.3
HCM Lane LOS	E	C	A	A	-	B	A	-	D
HCM 95th %tile Q(veh)	0.2	0.1	0	-	-	0.1	-	-	1.6

Intersection	
Int Delay, s/veh	5.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	44	0	0	51	102	14
Future Vol, veh/h	44	0	0	51	102	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	14	0	0	9	11	4
Mvmt Flow	48	0	0	55	111	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	76	24
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	28	-
Critical Hdwy	-	-	-	-	7.02	6.98
Critical Hdwy Stg 1	-	-	-	-	6.02	-
Critical Hdwy Stg 2	-	-	-	-	6.02	-
Follow-up Hdwy	-	-	-	-	3.61	3.34
Pot Cap-1 Maneuver	-	0	0	-	893	1040
Stage 1	-	0	0	-	943	-
Stage 2	-	0	0	-	965	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	893	1040
Mov Cap-2 Maneuver	-	-	-	-	893	-
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	965	-

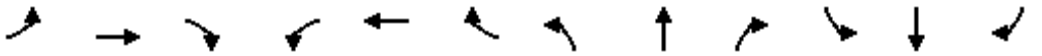
Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	893	1040	-	-
HCM Lane V/C Ratio	0.124	0.015	-	-
HCM Control Delay (s)	9.6	8.5	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.4	0	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	310	13	26	507	117	125
Future Volume (veh/h)	310	13	26	507	117	125
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1159	1559	1870	1885	1900
Adj Flow Rate, veh/h	337	14	28	551	127	136
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	50	23	2	1	0
Cap, veh/h	1362	710	655	1351	207	185
Arrive On Green	0.72	0.72	0.72	0.72	0.12	0.12
Sat Flow, veh/h	1885	982	859	1870	1795	1610
Grp Volume(v), veh/h	337	14	28	551	127	136
Grp Sat Flow(s),veh/h/ln	1885	982	859	1870	1795	1610
Q Serve(g_s), s	5.0	0.3	0.9	9.6	5.6	6.8
Cycle Q Clear(g_c), s	5.0	0.3	6.0	9.6	5.6	6.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1362	710	655	1351	207	185
V/C Ratio(X)	0.25	0.02	0.04	0.41	0.61	0.73
Avail Cap(c_a), veh/h	1362	710	655	1351	757	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.9	3.2	4.9	4.5	35.0	35.5
Incr Delay (d2), s/veh	0.4	0.1	0.1	0.9	3.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.1	0.2	4.3	4.6	5.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.3	3.3	5.0	5.5	38.0	41.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	351			579	263	
Approach Delay, s/veh	4.3			5.4	39.6	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		16.1		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		7.0		8.8		11.6
Green Ext Time (p_c), s		1.9		0.8		3.6

Intersection Summary		
HCM 6th Ctrl Delay		12.6
HCM 6th LOS		B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	499	193	41	812	41	162	107	44	47	184	36
Future Volume (veh/h)	42	499	193	41	812	41	162	107	44	47	184	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1870	1870	1737	1870	1870	1781	1841	1841	1870	1737	1737
Adj Flow Rate, veh/h	44	520	201	43	846	43	169	111	46	49	192	38
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	2	2	11	2	2	8	4	4	2	11	11
Cap, veh/h	175	717	277	258	985	50	281	361	150	356	411	81
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	610	1284	497	680	1765	90	1096	1236	512	1230	1408	279
Grp Volume(v), veh/h	44	0	721	43	0	889	169	0	157	49	0	230
Grp Sat Flow(s),veh/h/ln	610	0	1781	680	0	1854	1096	0	1749	1230	0	1687
Q Serve(g_s), s	5.7	0.0	26.1	4.4	0.0	35.3	13.0	0.0	6.1	2.8	0.0	9.7
Cycle Q Clear(g_c), s	41.1	0.0	26.1	30.5	0.0	35.3	22.7	0.0	6.1	8.9	0.0	9.7
Prop In Lane	1.00		0.28	1.00		0.05	1.00		0.29	1.00		0.17
Lane Grp Cap(c), veh/h	175	0	994	258	0	1035	281	0	511	356	0	493
V/C Ratio(X)	0.25	0.00	0.73	0.17	0.00	0.86	0.60	0.00	0.31	0.14	0.00	0.47
Avail Cap(c_a), veh/h	326	0	1435	426	0	1494	339	0	604	422	0	583
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.7	0.0	14.2	25.5	0.0	16.3	34.5	0.0	23.9	27.4	0.0	25.2
Incr Delay (d2), s/veh	0.7	0.0	1.0	0.3	0.0	3.7	2.1	0.0	0.3	0.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	0.0	13.4	1.2	0.0	18.6	6.1	0.0	4.3	1.4	0.0	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	0.0	15.3	25.8	0.0	19.9	36.6	0.0	24.2	27.5	0.0	25.9
LnGrp LOS	C	A	B	C	A	B	D	A	C	C	A	C
Approach Vol, veh/h		765			932			326			279	
Approach Delay, s/veh		16.4			20.2			30.6			26.2	
Approach LOS		B			C			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		55.5		31.4		55.5		31.4				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		43.1		24.7		37.3		11.7				
Green Ext Time (p_c), s		5.4		0.7		7.4		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			21.1									
HCM 6th LOS			C									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	664	12	22	927	46	84
Future Volume (veh/h)	664	12	22	927	46	84
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1841	1752
Adj Flow Rate, veh/h	722	13	24	1008	50	91
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	4	10
Cap, veh/h	1354	24	60	1344	166	140
Arrive On Green	0.74	0.74	0.74	0.74	0.09	0.09
Sat Flow, veh/h	1831	33	20	1819	1753	1485
Grp Volume(v), veh/h	0	735	1032	0	50	91
Grp Sat Flow(s),veh/h/ln	0	1864	1839	0	1753	1485
Q Serve(g_s), s	0.0	13.8	0.0	0.0	2.2	4.8
Cycle Q Clear(g_c), s	0.0	13.8	26.1	0.0	2.2	4.8
Prop In Lane		0.02	0.02		1.00	1.00
Lane Grp Cap(c), veh/h	0	1378	1405	0	166	140
V/C Ratio(X)	0.00	0.53	0.73	0.00	0.30	0.65
Avail Cap(c_a), veh/h	0	1378	1405	0	756	640
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.6	6.2	0.0	34.3	35.5
Incr Delay (d2), s/veh	0.0	1.5	3.5	0.0	1.0	5.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	5.6	10.2	0.0	1.7	3.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.0	9.6	0.0	35.3	40.4
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	735			1032	141	
Approach Delay, s/veh	6.0			9.6	38.6	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		14.2		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		15.8		6.8		28.1
Green Ext Time (p_c), s		5.2		0.4		9.2

Intersection Summary	
HCM 6th Ctrl Delay	10.4
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	9.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	608	35	42	885	46	39	7	37	31	6	29
Future Vol, veh/h	27	608	35	42	885	46	39	7	37	31	6	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	2	0	4	2	3	0	0	0	4	0	0
Mvmt Flow	28	620	36	43	903	47	40	7	38	32	6	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	950	0	0	656	0	0	1725	1730	638	1730	1725	927
Stage 1	-	-	-	-	-	-	694	694	-	1013	1013	-
Stage 2	-	-	-	-	-	-	1031	1036	-	717	712	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.1	6.5	6.2	7.14	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.5	4	3.3	3.536	4	3.3
Pot Cap-1 Maneuver	731	-	-	922	-	-	71	89	480	68	90	328
Stage 1	-	-	-	-	-	-	436	447	-	286	319	-
Stage 2	-	-	-	-	-	-	284	311	-	418	439	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	731	-	-	922	-	-	54	75	480	51	76	328
Mov Cap-2 Maneuver	-	-	-	-	-	-	54	75	-	51	76	-
Stage 1	-	-	-	-	-	-	409	420	-	269	287	-
Stage 2	-	-	-	-	-	-	228	280	-	355	412	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.4	92.7	132.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	54	258	731	-	-	922	-	-	85
HCM Lane V/C Ratio	0.737	0.174	0.038	-	-	0.046	-	-	0.792
HCM Control Delay (s)	172.5	21.9	10.1	0	-	9.1	0	-	132.1
HCM Lane LOS	F	C	B	A	-	A	A	-	F
HCM 95th %tile Q(veh)	3.1	0.6	0.1	-	-	0.1	-	-	4

Intersection	
Int Delay, s/veh	4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	19	0	0	31	35	7
Future Vol, veh/h	19	0	0	31	35	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	4	16	3
Mvmt Flow	20	0	0	32	36	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	36	10
Stage 1	-	-	-	-	20	-
Stage 2	-	-	-	-	16	-
Critical Hdwy	-	-	-	-	7.12	6.96
Critical Hdwy Stg 1	-	-	-	-	6.12	-
Critical Hdwy Stg 2	-	-	-	-	6.12	-
Follow-up Hdwy	-	-	-	-	3.66	3.33
Pot Cap-1 Maneuver	-	0	0	-	933	1065
Stage 1	-	0	0	-	960	-
Stage 2	-	0	0	-	965	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	933	1065
Mov Cap-2 Maneuver	-	-	-	-	933	-
Stage 1	-	-	-	-	960	-
Stage 2	-	-	-	-	965	-

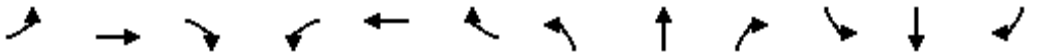
Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	933	1065	-	-
HCM Lane V/C Ratio	0.039	0.007	-	-
HCM Control Delay (s)	9	8.4	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	382	14	9	399	20	24
Future Volume (veh/h)	382	14	9	399	20	24
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1648	1900	1885	1633	1900
Adj Flow Rate, veh/h	398	15	9	416	21	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	17	0	1	18	0
Cap, veh/h	1440	1067	784	1440	100	104
Arrive On Green	0.76	0.76	0.76	0.76	0.06	0.06
Sat Flow, veh/h	1885	1397	988	1885	1555	1610
Grp Volume(v), veh/h	398	15	9	416	21	25
Grp Sat Flow(s),veh/h/ln	1885	1397	988	1885	1555	1610
Q Serve(g_s), s	5.0	0.2	0.2	5.3	1.0	1.2
Cycle Q Clear(g_c), s	5.0	0.2	5.2	5.3	1.0	1.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1440	1067	784	1440	100	104
V/C Ratio(X)	0.28	0.01	0.01	0.29	0.21	0.24
Avail Cap(c_a), veh/h	1440	1067	784	1440	693	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.8	2.2	3.6	2.8	34.8	34.9
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.5	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	0.0	0.1	1.7	0.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.3	2.2	3.6	3.3	35.9	36.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	413			425	46	
Approach Delay, s/veh	3.2			3.3	36.0	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		11.6		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		7.0		3.2		7.3
Green Ext Time (p_c), s		2.3		0.1		2.4

Intersection Summary	
HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	590	192	39	630	84	142	222	49	51	153	48
Future Volume (veh/h)	52	590	192	39	630	84	142	222	49	51	153	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1885	1811	1885	1885	1781	1870	1870	1900	1841	1841
Adj Flow Rate, veh/h	55	621	202	41	663	88	149	234	52	54	161	51
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	1	1	6	1	1	8	2	2	0	4	4
Cap, veh/h	263	745	242	206	891	118	295	409	91	254	369	117
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	700	1362	443	644	1630	216	1114	1482	329	1110	1340	424
Grp Volume(v), veh/h	55	0	823	41	0	751	149	0	286	54	0	212
Grp Sat Flow(s),veh/h/ln	700	0	1805	644	0	1846	1114	0	1811	1110	0	1764
Q Serve(g_s), s	4.8	0.0	27.8	4.1	0.0	22.8	9.3	0.0	9.9	3.2	0.0	7.2
Cycle Q Clear(g_c), s	27.5	0.0	27.8	31.9	0.0	22.8	16.5	0.0	9.9	13.2	0.0	7.2
Prop In Lane	1.00		0.25	1.00		0.12	1.00		0.18	1.00		0.24
Lane Grp Cap(c), veh/h	263	0	987	206	0	1009	295	0	499	254	0	486
V/C Ratio(X)	0.21	0.00	0.83	0.20	0.00	0.74	0.50	0.00	0.57	0.21	0.00	0.44
Avail Cap(c_a), veh/h	551	0	1727	470	0	1766	445	0	742	403	0	723
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.2	0.0	13.8	27.1	0.0	12.7	28.6	0.0	22.8	28.4	0.0	21.8
Incr Delay (d2), s/veh	0.4	0.0	1.9	0.5	0.0	1.1	1.3	0.0	1.0	0.4	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.0	13.6	1.1	0.0	11.6	4.3	0.0	7.1	1.5	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	0.0	15.8	27.6	0.0	13.8	30.0	0.0	23.8	28.9	0.0	22.4
LnGrp LOS	C	A	B	C	A	B	C	A	C	C	A	C
Approach Vol, veh/h		878			792			435			266	
Approach Delay, s/veh		16.2			14.5			25.9			23.7	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.0		26.2		47.0		26.2				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		29.8		18.5		33.9		15.2				
Green Ext Time (p_c), s		7.1		1.6		5.8		1.1				

Intersection Summary												
HCM 6th Ctrl Delay			18.3									
HCM 6th LOS			B									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	723	20	38	727	43	80
Future Volume (veh/h)	723	20	38	727	43	80
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1885	1870	1870	1841	1737
Adj Flow Rate, veh/h	786	22	41	790	47	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	2	2	4	11
Cap, veh/h	1350	38	84	1281	164	138
Arrive On Green	0.74	0.74	0.74	0.74	0.09	0.09
Sat Flow, veh/h	1825	51	50	1731	1753	1472
Grp Volume(v), veh/h	0	808	831	0	47	87
Grp Sat Flow(s),veh/h/ln	0	1876	1781	0	1753	1472
Q Serve(g_s), s	0.0	16.0	0.0	0.0	2.0	4.6
Cycle Q Clear(g_c), s	0.0	16.0	16.9	0.0	2.0	4.6
Prop In Lane		0.03	0.05		1.00	1.00
Lane Grp Cap(c), veh/h	0	1388	1364	0	164	138
V/C Ratio(X)	0.00	0.58	0.61	0.00	0.29	0.63
Avail Cap(c_a), veh/h	0	1388	1364	0	756	635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	4.8	4.9	0.0	34.2	35.4
Incr Delay (d2), s/veh	0.0	1.8	2.0	0.0	0.9	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	6.6	7.0	0.0	1.6	3.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	6.6	7.0	0.0	35.2	40.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	808			831	134	
Approach Delay, s/veh	6.6			7.0	38.3	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		14.1		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		18.0		6.6		18.9
Green Ext Time (p_c), s		6.0		0.4		6.8

Intersection Summary	
HCM 6th Ctrl Delay	9.2
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	10.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	669	42	44	689	37	37	7	41	33	3	37
Future Vol, veh/h	41	669	42	44	689	37	37	7	41	33	3	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	5	1	0	0	2	5	0	0	0	8	0	0
Mvmt Flow	44	712	45	47	733	39	39	7	44	35	3	39

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	772	0	0	757	0	0	1691	1689	735	1695	1692	753
Stage 1	-	-	-	-	-	-	823	823	-	847	847	-
Stage 2	-	-	-	-	-	-	868	866	-	848	845	-
Critical Hdwy	4.15	-	-	4.1	-	-	7.1	6.5	6.2	7.18	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Follow-up Hdwy	2.245	-	-	2.2	-	-	3.5	4	3.3	3.572	4	3.3
Pot Cap-1 Maneuver	830	-	-	863	-	-	75	94	423	71	94	413
Stage 1	-	-	-	-	-	-	371	391	-	348	381	-
Stage 2	-	-	-	-	-	-	350	373	-	348	382	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	830	-	-	863	-	-	57	77	423	51	77	413
Mov Cap-2 Maneuver	-	-	-	-	-	-	57	77	-	51	77	-
Stage 1	-	-	-	-	-	-	337	355	-	316	344	-
Stage 2	-	-	-	-	-	-	284	337	-	277	347	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.5	80.2	129.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	57	256	830	-	-	863	-	-	94
HCM Lane V/C Ratio	0.691	0.199	0.053	-	-	0.054	-	-	0.826
HCM Control Delay (s)	155	22.5	9.6	0	-	9.4	0	-	129.8
HCM Lane LOS	F	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	2.9	0.7	0.2	-	-	0.2	-	-	4.5

Intersection	
Int Delay, s/veh	5.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	153	0	0	363	208	298
Future Vol, veh/h	153	0	0	363	208	298
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	5	4	2
Mvmt Flow	158	0	0	374	214	307

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	345	79
Stage 1	-	-	-	-	158	-
Stage 2	-	-	-	-	187	-
Critical Hdwy	-	-	-	-	6.88	6.94
Critical Hdwy Stg 1	-	-	-	-	5.88	-
Critical Hdwy Stg 2	-	-	-	-	5.88	-
Follow-up Hdwy	-	-	-	-	3.54	3.32
Pot Cap-1 Maneuver	-	0	0	-	620	965
Stage 1	-	0	0	-	848	-
Stage 2	-	0	0	-	820	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	620	965
Mov Cap-2 Maneuver	-	-	-	-	620	-
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	820	-

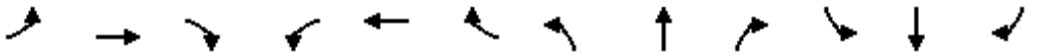
Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	620	965	-	-
HCM Lane V/C Ratio	0.346	0.318	-	-
HCM Control Delay (s)	13.8	10.5	-	-
HCM Lane LOS	B	B	-	-
HCM 95th %tile Q(veh)	1.5	1.4	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	401	61	44	225	36	21
Future Volume (veh/h)	401	61	44	225	36	21
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1722	1678	1767	1278	1248
Adj Flow Rate, veh/h	451	69	49	253	40	24
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	12	15	9	42	44
Cap, veh/h	1355	1101	622	1332	93	80
Arrive On Green	0.75	0.75	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1796	1459	791	1767	1217	1058
Grp Volume(v), veh/h	451	69	49	253	40	24
Grp Sat Flow(s),veh/h/ln	1796	1459	791	1767	1217	1058
Q Serve(g_s), s	6.6	1.0	1.7	3.3	2.5	1.7
Cycle Q Clear(g_c), s	6.6	1.0	8.3	3.3	2.5	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1355	1101	622	1332	93	80
V/C Ratio(X)	0.33	0.06	0.08	0.19	0.43	0.30
Avail Cap(c_a), veh/h	1355	1101	622	1332	535	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.2	2.5	4.6	2.8	35.1	34.7
Incr Delay (d2), s/veh	0.7	0.1	0.2	0.3	3.2	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.3	0.4	1.1	1.5	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.9	2.6	4.8	3.1	38.3	36.8
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	520			302	64	
Approach Delay, s/veh	3.7			3.4	37.7	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		12.6		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		8.6		4.5		10.3
Green Ext Time (p_c), s		2.9		0.2		1.7

Intersection Summary	
HCM 6th Ctrl Delay	6.1
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	662	198	38	283	27	176	137	30	43	183	37
Future Volume (veh/h)	23	662	198	38	283	27	176	137	30	43	183	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1707	1796	1796	1411	1693	1693	1752	1678	1678	1767	1826	1826
Adj Flow Rate, veh/h	26	761	228	44	325	31	202	157	34	49	210	43
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	13	7	7	33	14	14	10	15	15	9	5	5
Cap, veh/h	547	822	246	110	942	90	215	355	77	253	390	80
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	936	1327	398	429	1521	145	1055	1336	289	1126	1471	301
Grp Volume(v), veh/h	26	0	989	44	0	356	202	0	191	49	0	253
Grp Sat Flow(s),veh/h/ln	936	0	1725	429	0	1666	1055	0	1626	1126	0	1772
Q Serve(g_s), s	1.6	0.0	57.8	11.5	0.0	11.7	16.2	0.0	11.1	4.3	0.0	13.8
Cycle Q Clear(g_c), s	13.2	0.0	57.8	69.3	0.0	11.7	30.0	0.0	11.1	15.3	0.0	13.8
Prop In Lane	1.00		0.23	1.00		0.09	1.00		0.18	1.00		0.17
Lane Grp Cap(c), veh/h	547	0	1068	110	0	1032	215	0	432	253	0	470
V/C Ratio(X)	0.05	0.00	0.93	0.40	0.00	0.34	0.94	0.00	0.44	0.19	0.00	0.54
Avail Cap(c_a), veh/h	547	0	1068	110	0	1032	215	0	432	253	0	470
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	0.0	19.2	50.1	0.0	10.4	50.5	0.0	34.5	40.9	0.0	35.6
Incr Delay (d2), s/veh	0.0	0.0	13.3	2.3	0.0	0.2	44.9	0.0	0.7	0.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.0	30.7	2.3	0.0	6.7	13.0	0.0	7.7	2.1	0.0	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	0.0	32.5	52.4	0.0	10.6	95.4	0.0	35.3	41.3	0.0	36.8
LnGrp LOS	B	A	C	D	A	B	F	A	D	D	A	D
Approach Vol, veh/h		1015			400			393			302	
Approach Delay, s/veh		32.0			15.2			66.2			37.5	
Approach LOS		C			B			E			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		77.0		36.0		77.0		36.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		59.8		32.0		71.3		17.3				
Green Ext Time (p_c), s		5.0		0.0		0.0		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			36.0									
HCM 6th LOS			D									

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱		↰	↱			↕	
Traffic Vol, veh/h	15	779	17	11	356	19	8	0	5	36	1	44
Future Vol, veh/h	15	779	17	11	356	19	8	0	5	36	1	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	6	10	20	14	14	0	0	50	0	0	0
Mvmt Flow	16	829	18	12	379	20	9	0	5	38	1	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	399	0	0	847	0	0	1307	1293	838	1286	1292	389
Stage 1	-	-	-	-	-	-	870	870	-	413	413	-
Stage 2	-	-	-	-	-	-	437	423	-	873	879	-
Critical Hdwy	4.1	-	-	4.3	-	-	7.1	6.5	6.7	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.38	-	-	3.5	4	3.75	3.5	4	3.3
Pot Cap-1 Maneuver	1171	-	-	718	-	-	138	164	303	143	165	664
Stage 1	-	-	-	-	-	-	349	372	-	620	597	-
Stage 2	-	-	-	-	-	-	602	591	-	348	368	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1171	-	-	718	-	-	124	157	303	136	158	664
Mov Cap-2 Maneuver	-	-	-	-	-	-	124	157	-	136	158	-
Stage 1	-	-	-	-	-	-	340	362	-	604	587	-
Stage 2	-	-	-	-	-	-	549	581	-	333	358	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	28.9	28.2
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	124	303	1171	-	-	718	-	-	240
HCM Lane V/C Ratio	0.069	0.018	0.014	-	-	0.016	-	-	0.359
HCM Control Delay (s)	36.2	17.1	8.1	0	-	10.1	-	-	28.2
HCM Lane LOS	E	C	A	A	-	B	-	-	D
HCM 95th %tile Q(veh)	0.2	0.1	0	-	-	0.1	-	-	1.6

Intersection	
Int Delay, s/veh	5.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	44	0	0	51	102	14
Future Vol, veh/h	44	0	0	51	102	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	14	0	0	9	11	4
Mvmt Flow	48	0	0	55	111	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	76	24
Stage 1	-	-	-	-	48	-
Stage 2	-	-	-	-	28	-
Critical Hdwy	-	-	-	-	7.02	6.98
Critical Hdwy Stg 1	-	-	-	-	6.02	-
Critical Hdwy Stg 2	-	-	-	-	6.02	-
Follow-up Hdwy	-	-	-	-	3.61	3.34
Pot Cap-1 Maneuver	-	0	0	-	893	1040
Stage 1	-	0	0	-	943	-
Stage 2	-	0	0	-	965	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	893	1040
Mov Cap-2 Maneuver	-	-	-	-	893	-
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	965	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	893	1040	-	-
HCM Lane V/C Ratio	0.124	0.015	-	-
HCM Control Delay (s)	9.6	8.5	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.4	0	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	772	48	85	377	9	22
Future Vol, veh/h	772	48	85	377	9	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	4	8	14	22	41
Mvmt Flow	839	52	92	410	10	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	839	0	1433	839
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	594	-
Critical Hdwy	-	-	4.18	-	6.62	6.61
Critical Hdwy Stg 1	-	-	-	-	5.62	-
Critical Hdwy Stg 2	-	-	-	-	5.62	-
Follow-up Hdwy	-	-	2.272	-	3.698	3.669
Pot Cap-1 Maneuver	-	0	770	-	133	313
Stage 1	-	0	-	-	392	-
Stage 2	-	0	-	-	515	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	770	-	112	313
Mov Cap-2 Maneuver	-	-	-	-	239	-
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	435	-

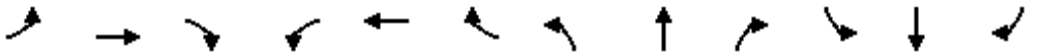
Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	18.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	239	313	-	770	-
HCM Lane V/C Ratio	0.041	0.076	-	0.12	-
HCM Control Delay (s)	20.7	17.5	-	10.3	-
HCM Lane LOS	C	C	-	B	-
HCM 95th %tile Q(veh)	0.1	0.2	-	0.4	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	310	13	26	507	117	125
Future Volume (veh/h)	310	13	26	507	117	125
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1159	1559	1870	1885	1900
Adj Flow Rate, veh/h	337	14	28	551	127	136
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	50	23	2	1	0
Cap, veh/h	1362	710	655	1351	207	185
Arrive On Green	0.72	0.72	0.72	0.72	0.12	0.12
Sat Flow, veh/h	1885	982	859	1870	1795	1610
Grp Volume(v), veh/h	337	14	28	551	127	136
Grp Sat Flow(s),veh/h/ln	1885	982	859	1870	1795	1610
Q Serve(g_s), s	5.0	0.3	0.9	9.6	5.6	6.8
Cycle Q Clear(g_c), s	5.0	0.3	6.0	9.6	5.6	6.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1362	710	655	1351	207	185
V/C Ratio(X)	0.25	0.02	0.04	0.41	0.61	0.73
Avail Cap(c_a), veh/h	1362	710	655	1351	757	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.9	3.2	4.9	4.5	35.0	35.5
Incr Delay (d2), s/veh	0.4	0.1	0.1	0.9	3.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.1	0.2	4.3	4.6	5.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.3	3.3	5.0	5.5	38.0	41.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	351			579	263	
Approach Delay, s/veh	4.3			5.4	39.6	
Approach LOS	A			A	D	

Timer - Assigned Phs	2		4		6
Phs Duration (G+Y+Rc), s	67.0		16.1		67.0
Change Period (Y+Rc), s	7.0		6.5		7.0
Max Green Setting (Gmax), s	60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s	7.0		8.8		11.6
Green Ext Time (p_c), s	1.9		0.8		3.6

Intersection Summary	
HCM 6th Ctrl Delay	12.6
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	499	193	41	812	41	162	107	44	47	184	36
Future Volume (veh/h)	42	499	193	41	812	41	162	107	44	47	184	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1870	1870	1737	1870	1870	1781	1841	1841	1870	1737	1737
Adj Flow Rate, veh/h	44	520	201	43	846	43	169	111	46	49	192	38
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	2	2	11	2	2	8	4	4	2	11	11
Cap, veh/h	175	717	277	258	985	50	281	361	150	356	411	81
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	610	1284	497	680	1765	90	1096	1236	512	1230	1408	279
Grp Volume(v), veh/h	44	0	721	43	0	889	169	0	157	49	0	230
Grp Sat Flow(s),veh/h/ln	610	0	1781	680	0	1854	1096	0	1749	1230	0	1687
Q Serve(g_s), s	5.7	0.0	26.1	4.4	0.0	35.3	13.0	0.0	6.1	2.8	0.0	9.7
Cycle Q Clear(g_c), s	41.1	0.0	26.1	30.5	0.0	35.3	22.7	0.0	6.1	8.9	0.0	9.7
Prop In Lane	1.00		0.28	1.00		0.05	1.00		0.29	1.00		0.17
Lane Grp Cap(c), veh/h	175	0	994	258	0	1035	281	0	511	356	0	493
V/C Ratio(X)	0.25	0.00	0.73	0.17	0.00	0.86	0.60	0.00	0.31	0.14	0.00	0.47
Avail Cap(c_a), veh/h	326	0	1435	426	0	1494	339	0	604	422	0	583
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.7	0.0	14.2	25.5	0.0	16.3	34.5	0.0	23.9	27.4	0.0	25.2
Incr Delay (d2), s/veh	0.7	0.0	1.0	0.3	0.0	3.7	2.1	0.0	0.3	0.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	0.0	13.4	1.2	0.0	18.6	6.1	0.0	4.3	1.4	0.0	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	0.0	15.3	25.8	0.0	19.9	36.6	0.0	24.2	27.5	0.0	25.9
LnGrp LOS	C	A	B	C	A	B	D	A	C	C	A	C
Approach Vol, veh/h		765			932			326			279	
Approach Delay, s/veh		16.4			20.2			30.6			26.2	
Approach LOS		B			C			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		55.5		31.4		55.5		31.4				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		43.1		24.7		37.3		11.7				
Green Ext Time (p_c), s		5.4		0.7		7.4		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			21.1									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	8.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↑			↑			↕	
Traffic Vol, veh/h	27	608	35	42	885	46	39	7	37	31	6	29
Future Vol, veh/h	27	608	35	42	885	46	39	7	37	31	6	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	2	0	4	2	3	0	0	0	4	0	0
Mvmt Flow	28	620	36	43	903	47	40	7	38	32	6	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	950	0	0	656	0	0	1725	1730	638	1730	1725	927
Stage 1	-	-	-	-	-	-	694	694	-	1013	1013	-
Stage 2	-	-	-	-	-	-	1031	1036	-	717	712	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.1	6.5	6.2	7.14	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.5	4	3.3	3.536	4	3.3
Pot Cap-1 Maneuver	731	-	-	922	-	-	71	89	480	68	90	328
Stage 1	-	-	-	-	-	-	436	447	-	286	319	-
Stage 2	-	-	-	-	-	-	284	311	-	418	439	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	731	-	-	922	-	-	56	80	480	54	81	328
Mov Cap-2 Maneuver	-	-	-	-	-	-	56	80	-	54	81	-
Stage 1	-	-	-	-	-	-	409	420	-	269	304	-
Stage 2	-	-	-	-	-	-	241	296	-	355	412	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.4	87.2	117.5
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	56	267	731	-	-	922	-	-	90
HCM Lane V/C Ratio	0.711	0.168	0.038	-	-	0.046	-	-	0.748
HCM Control Delay (s)	161.6	21.2	10.1	0	-	9.1	-	-	117.5
HCM Lane LOS	F	C	B	A	-	A	-	-	F
HCM 95th %tile Q(veh)	3	0.6	0.1	-	-	0.1	-	-	3.8

Intersection	
Int Delay, s/veh	4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	19	0	0	31	35	7
Future Vol, veh/h	19	0	0	31	35	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	4	16	3
Mvmt Flow	20	0	0	32	36	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	36	10
Stage 1	-	-	-	-	20	-
Stage 2	-	-	-	-	16	-
Critical Hdwy	-	-	-	-	7.12	6.96
Critical Hdwy Stg 1	-	-	-	-	6.12	-
Critical Hdwy Stg 2	-	-	-	-	6.12	-
Follow-up Hdwy	-	-	-	-	3.66	3.33
Pot Cap-1 Maneuver	-	0	0	-	933	1065
Stage 1	-	0	0	-	960	-
Stage 2	-	0	0	-	965	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	933	1065
Mov Cap-2 Maneuver	-	-	-	-	933	-
Stage 1	-	-	-	-	960	-
Stage 2	-	-	-	-	965	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	933	1065	-	-
HCM Lane V/C Ratio	0.039	0.007	-	-
HCM Control Delay (s)	9	8.4	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	664	12	22	927	46	84
Future Vol, veh/h	664	12	22	927	46	84
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	11	18	2	4	10
Mvmt Flow	722	13	24	1008	50	91

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	722	0	1778	722
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	1056	-
Critical Hdwy	-	-	4.28	-	6.44	6.3
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.362	-	3.536	3.39
Pot Cap-1 Maneuver	-	0	811	-	90	414
Stage 1	-	0	-	-	477	-
Stage 2	-	0	-	-	332	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	811	-	84	414
Mov Cap-2 Maneuver	-	-	-	-	208	-
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	310	-

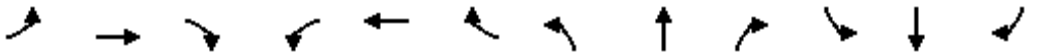
Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	20.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	208	414	-	811	-
HCM Lane V/C Ratio	0.24	0.221	-	0.029	-
HCM Control Delay (s)	27.7	16.1	-	9.6	-
HCM Lane LOS	D	C	-	A	-
HCM 95th %tile Q(veh)	0.9	0.8	-	0.1	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	382	14	9	399	20	24
Future Volume (veh/h)	382	14	9	399	20	24
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1648	1900	1885	1633	1900
Adj Flow Rate, veh/h	398	15	9	416	21	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	17	0	1	18	0
Cap, veh/h	1440	1067	784	1440	100	104
Arrive On Green	0.76	0.76	0.76	0.76	0.06	0.06
Sat Flow, veh/h	1885	1397	988	1885	1555	1610
Grp Volume(v), veh/h	398	15	9	416	21	25
Grp Sat Flow(s),veh/h/ln	1885	1397	988	1885	1555	1610
Q Serve(g_s), s	5.0	0.2	0.2	5.3	1.0	1.2
Cycle Q Clear(g_c), s	5.0	0.2	5.2	5.3	1.0	1.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1440	1067	784	1440	100	104
V/C Ratio(X)	0.28	0.01	0.01	0.29	0.21	0.24
Avail Cap(c_a), veh/h	1440	1067	784	1440	693	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.8	2.2	3.6	2.8	34.8	34.9
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.5	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	0.0	0.1	1.7	0.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.3	2.2	3.6	3.3	35.9	36.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	413			425	46	
Approach Delay, s/veh	3.2			3.3	36.0	
Approach LOS	A			A	D	

Timer - Assigned Phs	2	4	6
Phs Duration (G+Y+Rc), s	67.0	11.6	67.0
Change Period (Y+Rc), s	7.0	6.5	7.0
Max Green Setting (Gmax), s	60.0	35.0	60.0
Max Q Clear Time (g_c+I1), s	7.0	3.2	7.3
Green Ext Time (p_c), s	2.3	0.1	2.4

Intersection Summary	
HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	590	192	39	630	84	142	222	49	51	153	48
Future Volume (veh/h)	52	590	192	39	630	84	142	222	49	51	153	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1885	1811	1885	1885	1781	1870	1870	1900	1841	1841
Adj Flow Rate, veh/h	55	621	202	41	663	88	149	234	52	54	161	51
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	1	1	6	1	1	8	2	2	0	4	4
Cap, veh/h	263	745	242	206	891	118	295	409	91	254	369	117
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	700	1362	443	644	1630	216	1114	1482	329	1110	1340	424
Grp Volume(v), veh/h	55	0	823	41	0	751	149	0	286	54	0	212
Grp Sat Flow(s),veh/h/ln	700	0	1805	644	0	1846	1114	0	1811	1110	0	1764
Q Serve(g_s), s	4.8	0.0	27.8	4.1	0.0	22.8	9.3	0.0	9.9	3.2	0.0	7.2
Cycle Q Clear(g_c), s	27.5	0.0	27.8	31.9	0.0	22.8	16.5	0.0	9.9	13.2	0.0	7.2
Prop In Lane	1.00		0.25	1.00		0.12	1.00		0.18	1.00		0.24
Lane Grp Cap(c), veh/h	263	0	987	206	0	1009	295	0	499	254	0	486
V/C Ratio(X)	0.21	0.00	0.83	0.20	0.00	0.74	0.50	0.00	0.57	0.21	0.00	0.44
Avail Cap(c_a), veh/h	551	0	1727	470	0	1766	445	0	742	403	0	723
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.2	0.0	13.8	27.1	0.0	12.7	28.6	0.0	22.8	28.4	0.0	21.8
Incr Delay (d2), s/veh	0.4	0.0	1.9	0.5	0.0	1.1	1.3	0.0	1.0	0.4	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.0	13.6	1.1	0.0	11.6	4.3	0.0	7.1	1.5	0.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	0.0	15.8	27.6	0.0	13.8	30.0	0.0	23.8	28.9	0.0	22.4
LnGrp LOS	C	A	B	C	A	B	C	A	C	C	A	C
Approach Vol, veh/h		878			792			435			266	
Approach Delay, s/veh		16.2			14.5			25.9			23.7	
Approach LOS		B			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		47.0		26.2		47.0		26.2				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		29.8		18.5		33.9		15.2				
Green Ext Time (p_c), s		7.1		1.6		5.8		1.1				

Intersection Summary												
HCM 6th Ctrl Delay			18.3									
HCM 6th LOS			B									

Intersection	
Int Delay, s/veh	9.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	669	42	44	689	37	37	7	41	33	3	37
Future Vol, veh/h	41	669	42	44	689	37	37	7	41	33	3	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	5	1	0	0	2	5	0	0	0	8	0	0
Mvmt Flow	44	712	45	47	733	39	39	7	44	35	3	39

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	772	0	0	757	0	0	1691	1689	735	1695	1692	753
Stage 1	-	-	-	-	-	-	823	823	-	847	847	-
Stage 2	-	-	-	-	-	-	868	866	-	848	845	-
Critical Hdwy	4.15	-	-	4.1	-	-	7.1	6.5	6.2	7.18	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Follow-up Hdwy	2.245	-	-	2.2	-	-	3.5	4	3.3	3.572	4	3.3
Pot Cap-1 Maneuver	830	-	-	863	-	-	75	94	423	71	94	413
Stage 1	-	-	-	-	-	-	371	391	-	348	381	-
Stage 2	-	-	-	-	-	-	350	373	-	348	382	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	830	-	-	863	-	-	59	81	423	53	81	413
Mov Cap-2 Maneuver	-	-	-	-	-	-	59	81	-	53	81	-
Stage 1	-	-	-	-	-	-	337	355	-	316	360	-
Stage 2	-	-	-	-	-	-	297	353	-	277	347	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.5	75.9	121.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	59	262	830	-	-	863	-	-	97
HCM Lane V/C Ratio	0.667	0.195	0.053	-	-	0.054	-	-	0.801
HCM Control Delay (s)	145.8	22	9.6	0	-	9.4	-	-	121.3
HCM Lane LOS	F	C	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	2.8	0.7	0.2	-	-	0.2	-	-	4.3

Intersection	
Int Delay, s/veh	5.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	153	0	0	363	208	298
Future Vol, veh/h	153	0	0	363	208	298
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	5	4	2
Mvmt Flow	158	0	0	374	214	307

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	345	79
Stage 1	-	-	-	-	158	-
Stage 2	-	-	-	-	187	-
Critical Hdwy	-	-	-	-	6.88	6.94
Critical Hdwy Stg 1	-	-	-	-	5.88	-
Critical Hdwy Stg 2	-	-	-	-	5.88	-
Follow-up Hdwy	-	-	-	-	3.54	3.32
Pot Cap-1 Maneuver	-	0	0	-	620	965
Stage 1	-	0	0	-	848	-
Stage 2	-	0	0	-	820	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	620	965
Mov Cap-2 Maneuver	-	-	-	-	620	-
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	820	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	620	965	-	-
HCM Lane V/C Ratio	0.346	0.318	-	-
HCM Control Delay (s)	13.8	10.5	-	-
HCM Lane LOS	B	B	-	-
HCM 95th %tile Q(veh)	1.5	1.4	-	-

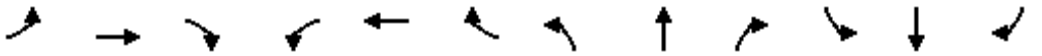
Intersection	
Int Delay, s/veh	1.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	723	20	38	727	43	80
Future Vol, veh/h	723	20	38	727	43	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	10	13	2	4	11
Mvmt Flow	786	22	41	790	47	87

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	786	0	1658	786
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	872	-
Critical Hdwy	-	-	4.23	-	6.44	6.31
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.317	-	3.536	3.399
Pot Cap-1 Maneuver	-	0	786	-	106	378
Stage 1	-	0	-	-	446	-
Stage 2	-	0	-	-	406	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	786	-	96	378
Mov Cap-2 Maneuver	-	-	-	-	227	-
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	368	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	20
HCM LOS			C

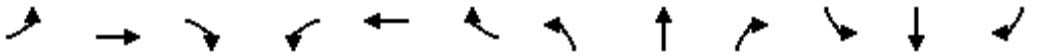
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	227	378	-	786	-
HCM Lane V/C Ratio	0.206	0.23	-	0.053	-
HCM Control Delay (s)	24.9	17.3	-	9.8	-
HCM Lane LOS	C	C	-	A	-
HCM 95th %tile Q(veh)	0.8	0.9	-	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	662	198	38	283	27	176	137	30	43	183	37
Future Volume (veh/h)	23	662	198	38	283	27	176	137	30	43	183	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1796	1796	1411	1693	1693	1752	1678	1678	1767	1826	1826
Adj Flow Rate, veh/h	26	761	228	44	325	31	202	157	34	49	210	43
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	7	7	33	14	14	10	15	15	9	5	5
Cap, veh/h	521	767	230	84	879	84	246	371	80	285	408	84
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	952	1327	398	429	1521	145	1055	1336	289	1126	1471	301
Grp Volume(v), veh/h	26	0	989	44	0	356	202	0	191	49	0	253
Grp Sat Flow(s),veh/h/ln	952	0	1725	429	0	1666	1055	0	1626	1126	0	1772
Q Serve(g_s), s	1.4	0.0	51.1	0.9	0.0	10.3	14.2	0.0	8.7	3.4	0.0	10.8
Cycle Q Clear(g_c), s	11.7	0.0	51.1	52.0	0.0	10.3	25.0	0.0	8.7	12.0	0.0	10.8
Prop In Lane	1.00		0.23	1.00		0.09	1.00		0.18	1.00		0.17
Lane Grp Cap(c), veh/h	521	0	996	84	0	963	246	0	452	285	0	492
V/C Ratio(X)	0.05	0.00	0.99	0.52	0.00	0.37	0.82	0.00	0.42	0.17	0.00	0.51
Avail Cap(c_a), veh/h	521	0	996	84	0	963	246	0	452	285	0	492
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	18.8	45.0	0.0	10.2	39.2	0.0	26.6	31.5	0.0	27.4
Incr Delay (d2), s/veh	0.0	0.0	26.6	5.7	0.0	0.2	19.4	0.0	0.6	0.3	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.0	30.9	1.9	0.0	5.6	9.5	0.0	5.8	1.6	0.0	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.4	0.0	45.4	50.6	0.0	10.4	58.6	0.0	27.2	31.8	0.0	28.3
LnGrp LOS	B	A	D	D	A	B	E	A	C	C	A	C
Approach Vol, veh/h		1015			400			393			302	
Approach Delay, s/veh		44.6			14.9			43.3			28.9	
Approach LOS		D			B			D			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		59.0		31.0		59.0		31.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		52.0		25.0		52.0		25.0				
Max Q Clear Time (g_c+I1), s		53.1		27.0		54.0		14.0				
Green Ext Time (p_c), s		0.0		0.0		0.0		1.1				

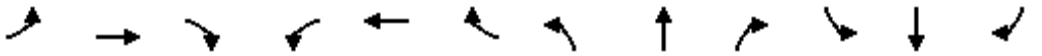
Intersection Summary												
HCM 6th Ctrl Delay			36.5									
HCM 6th LOS			D									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	662	198	38	283	27	176	137	30	43	183	37
Future Volume (veh/h)	23	662	198	38	283	27	176	137	30	43	183	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1796	1796	1411	1693	1693	1752	1678	1678	1767	1826	1826
Adj Flow Rate, veh/h	26	761	228	44	325	31	202	157	34	49	210	43
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	7	7	33	14	14	10	15	15	9	5	5
Cap, veh/h	521	767	230	84	879	84	246	371	80	285	408	84
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	952	1327	398	429	1521	145	1055	1336	289	1126	1471	301
Grp Volume(v), veh/h	26	0	989	44	0	356	202	0	191	49	0	253
Grp Sat Flow(s),veh/h/ln	952	0	1725	429	0	1666	1055	0	1626	1126	0	1772
Q Serve(g_s), s	1.4	0.0	51.1	0.9	0.0	10.3	14.2	0.0	8.7	3.4	0.0	10.8
Cycle Q Clear(g_c), s	11.7	0.0	51.1	52.0	0.0	10.3	25.0	0.0	8.7	12.0	0.0	10.8
Prop In Lane	1.00		0.23	1.00		0.09	1.00		0.18	1.00		0.17
Lane Grp Cap(c), veh/h	521	0	996	84	0	963	246	0	452	285	0	492
V/C Ratio(X)	0.05	0.00	0.99	0.52	0.00	0.37	0.82	0.00	0.42	0.17	0.00	0.51
Avail Cap(c_a), veh/h	521	0	996	84	0	963	246	0	452	285	0	492
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	18.8	45.0	0.0	10.2	39.2	0.0	26.6	31.5	0.0	27.4
Incr Delay (d2), s/veh	0.0	0.0	26.6	5.7	0.0	0.2	19.4	0.0	0.6	0.3	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.0	30.9	1.9	0.0	5.6	9.5	0.0	5.8	1.6	0.0	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.4	0.0	45.4	50.6	0.0	10.4	58.6	0.0	27.2	31.8	0.0	28.3
LnGrp LOS	B	A	D	D	A	B	E	A	C	C	A	C
Approach Vol, veh/h		1015			400			393			302	
Approach Delay, s/veh		44.6			14.9			43.3			28.9	
Approach LOS		D			B			D			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		59.0		31.0		59.0		31.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		52.0		25.0		52.0		25.0				
Max Q Clear Time (g_c+I1), s		53.1		27.0		54.0		14.0				
Green Ext Time (p_c), s		0.0		0.0		0.0		1.1				

Intersection Summary												
HCM 6th Ctrl Delay			36.5									
HCM 6th LOS			D									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	662	198	38	283	27	176	137	30	43	183	37
Future Volume (veh/h)	23	662	198	38	283	27	176	137	30	43	183	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1707	1796	1796	1411	1693	1693	1752	1678	1678	1767	1826	1826
Adj Flow Rate, veh/h	26	761	228	44	325	31	202	157	34	49	210	43
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	13	7	7	33	14	14	10	15	15	9	5	5
Cap, veh/h	513	767	230	84	879	84	246	371	80	285	408	84
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	936	1327	398	429	1521	145	1055	1336	289	1126	1471	301
Grp Volume(v), veh/h	26	0	989	44	0	356	202	0	191	49	0	253
Grp Sat Flow(s),veh/h/ln	936	0	1725	429	0	1666	1055	0	1626	1126	0	1772
Q Serve(g_s), s	1.4	0.0	51.1	0.9	0.0	10.3	14.2	0.0	8.7	3.4	0.0	10.8
Cycle Q Clear(g_c), s	11.7	0.0	51.1	52.0	0.0	10.3	25.0	0.0	8.7	12.0	0.0	10.8
Prop In Lane	1.00		0.23	1.00		0.09	1.00		0.18	1.00		0.17
Lane Grp Cap(c), veh/h	513	0	996	84	0	963	246	0	452	285	0	492
V/C Ratio(X)	0.05	0.00	0.99	0.52	0.00	0.37	0.82	0.00	0.42	0.17	0.00	0.51
Avail Cap(c_a), veh/h	513	0	996	84	0	963	246	0	452	285	0	492
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	18.8	45.0	0.0	10.2	39.2	0.0	26.6	31.5	0.0	27.4
Incr Delay (d2), s/veh	0.0	0.0	26.6	5.7	0.0	0.2	19.4	0.0	0.6	0.3	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.0	30.9	1.9	0.0	5.6	9.5	0.0	5.8	1.6	0.0	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.4	0.0	45.4	50.6	0.0	10.4	58.6	0.0	27.2	31.8	0.0	28.3
LnGrp LOS	B	A	D	D	A	B	E	A	C	C	A	C
Approach Vol, veh/h		1015			400			393			302	
Approach Delay, s/veh		44.6			14.9			43.3			28.9	
Approach LOS		D			B			D			C	

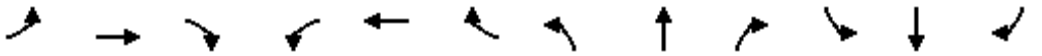
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		59.0		31.0		59.0		31.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		52.0		25.0		52.0		25.0				
Max Q Clear Time (g_c+I1), s		53.1		27.0		54.0		14.0				
Green Ext Time (p_c), s		0.0		0.0		0.0		1.1				

Intersection Summary												
HCM 6th Ctrl Delay			36.5									
HCM 6th LOS			D									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	410	61	44	232	36	21
Future Volume (veh/h)	410	61	44	232	36	21
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1722	1678	1767	1278	1248
Adj Flow Rate, veh/h	461	69	49	261	40	24
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	12	15	9	42	44
Cap, veh/h	1355	1101	615	1332	93	80
Arrive On Green	0.75	0.75	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1796	1459	784	1767	1217	1058
Grp Volume(v), veh/h	461	69	49	261	40	24
Grp Sat Flow(s),veh/h/ln	1796	1459	784	1767	1217	1058
Q Serve(g_s), s	6.8	1.0	1.8	3.4	2.5	1.7
Cycle Q Clear(g_c), s	6.8	1.0	8.5	3.4	2.5	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1355	1101	615	1332	93	80
V/C Ratio(X)	0.34	0.06	0.08	0.20	0.43	0.30
Avail Cap(c_a), veh/h	1355	1101	615	1332	535	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.2	2.5	4.6	2.8	35.1	34.7
Incr Delay (d2), s/veh	0.7	0.1	0.3	0.3	3.2	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.3	0.3	0.4	1.1	1.5	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.9	2.6	4.9	3.1	38.3	36.8
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	530			310	64	
Approach Delay, s/veh	3.7			3.4	37.7	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		12.6		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		8.8		4.5		10.5
Green Ext Time (p_c), s		3.0		0.2		1.8

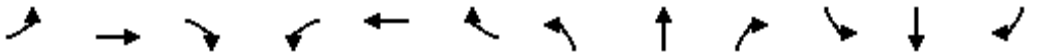
Intersection Summary	
HCM 6th Ctrl Delay	6.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	788	17	68	356	17	15	7	5	19	22	44
Future Volume (veh/h)	15	788	17	68	356	17	15	7	5	19	22	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1811	1811	1781	1693	1693	1693	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	16	838	18	72	379	18	16	7	5	20	23	47
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	6	6	8	14	14	14	0	0	0	0	0
Cap, veh/h	53	1317	28	485	1211	58	200	90	64	73	48	76
Arrive On Green	0.76	0.76	0.76	0.76	0.76	0.76	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	13	1742	37	614	1603	76	1204	1031	736	247	547	868
Grp Volume(v), veh/h	872	0	0	72	0	397	16	0	12	90	0	0
Grp Sat Flow(s),veh/h/ln	1793	0	0	614	0	1679	1204	0	1767	1661	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	6.5	0.0	0.0	0.5	2.0	0.0	0.0
Cycle Q Clear(g_c), s	19.7	0.0	0.0	5.7	0.0	6.5	0.9	0.0	0.5	4.4	0.0	0.0
Prop In Lane	0.02		0.02	1.00		0.05	1.00		0.42	0.22		0.52
Lane Grp Cap(c), veh/h	1397	0	0	485	0	1269	200	0	155	196	0	0
V/C Ratio(X)	0.62	0.00	0.00	0.15	0.00	0.31	0.08	0.00	0.08	0.46	0.00	0.00
Avail Cap(c_a), veh/h	1397	0	0	485	0	1269	535	0	647	650	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.0	0.0	0.0	3.3	0.0	3.4	36.2	0.0	36.1	37.8	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.0	0.0	0.6	0.0	0.6	0.2	0.0	0.2	1.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.7	0.0	0.0	0.5	0.0	2.3	0.6	0.0	0.4	3.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.1	0.0	0.0	3.9	0.0	4.0	36.4	0.0	36.3	39.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	A
Approach Vol, veh/h		872			469			28			90	
Approach Delay, s/veh		7.1			4.0			36.3			39.5	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		72.0		14.0		72.0		14.0				
Change Period (Y+Rc), s		7.0		6.5		7.0		6.5				
Max Green Setting (Gmax), s		65.0		31.5		65.0		31.5				
Max Q Clear Time (g_c+I1), s		21.7		2.9		8.5		6.4				
Green Ext Time (p_c), s		7.0		0.1		3.1		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			8.6									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	662	218	38	283	27	200	137	30	43	183	37
Future Volume (veh/h)	23	662	218	38	283	27	200	137	30	43	183	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1796	1796	1411	1693	1693	1767	1678	1678	1767	1826	1826
Adj Flow Rate, veh/h	26	761	251	44	325	31	230	157	34	49	210	43
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	7	7	33	14	14	9	15	15	9	5	5
Cap, veh/h	555	801	264	95	942	90	216	355	77	253	390	80
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	952	1293	426	420	1521	145	1064	1336	289	1126	1471	301
Grp Volume(v), veh/h	26	0	1012	44	0	356	230	0	191	49	0	253
Grp Sat Flow(s),veh/h/ln	952	0	1719	420	0	1666	1064	0	1626	1126	0	1772
Q Serve(g_s), s	1.5	0.0	61.5	8.5	0.0	11.7	16.2	0.0	11.1	4.3	0.0	13.8
Cycle Q Clear(g_c), s	13.2	0.0	61.5	70.0	0.0	11.7	30.0	0.0	11.1	15.3	0.0	13.8
Prop In Lane	1.00		0.25	1.00		0.09	1.00		0.18	1.00		0.17
Lane Grp Cap(c), veh/h	555	0	1065	95	0	1032	216	0	432	253	0	470
V/C Ratio(X)	0.05	0.00	0.95	0.46	0.00	0.34	1.06	0.00	0.44	0.19	0.00	0.54
Avail Cap(c_a), veh/h	555	0	1065	95	0	1032	216	0	432	253	0	470
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	0.0	19.9	53.5	0.0	10.4	50.8	0.0	34.5	40.9	0.0	35.6
Incr Delay (d2), s/veh	0.0	0.0	16.9	3.5	0.0	0.2	79.4	0.0	0.7	0.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.0	33.3	2.3	0.0	6.7	16.7	0.0	7.7	2.1	0.0	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	0.0	36.8	56.9	0.0	10.6	130.2	0.0	35.3	41.3	0.0	36.8
LnGrp LOS	B	A	D	E	A	B	F	A	D	D	A	D
Approach Vol, veh/h		1038			400			421			302	
Approach Delay, s/veh		36.2			15.7			87.1			37.5	
Approach LOS		D			B			F			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		77.0		36.0		77.0		36.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		63.5		32.0		72.0		17.3				
Green Ext Time (p_c), s		3.7		0.0		0.0		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			42.5									
HCM 6th LOS			D									

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	49	0	0	56	121	14
Future Vol, veh/h	49	0	0	56	121	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	14	0	0	9	9	4
Mvmt Flow	53	0	0	61	132	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	84	27
Stage 1	-	-	-	-	53	-
Stage 2	-	-	-	-	31	-
Critical Hdwy	-	-	-	-	6.98	6.98
Critical Hdwy Stg 1	-	-	-	-	5.98	-
Critical Hdwy Stg 2	-	-	-	-	5.98	-
Follow-up Hdwy	-	-	-	-	3.59	3.34
Pot Cap-1 Maneuver	-	0	0	-	888	1036
Stage 1	-	0	0	-	943	-
Stage 2	-	0	0	-	967	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	888	1036
Mov Cap-2 Maneuver	-	-	-	-	888	-
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	967	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	888	1036	-	-
HCM Lane V/C Ratio	0.148	0.015	-	-
HCM Control Delay (s)	9.8	8.5	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.5	0	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	771	41	52	434	7	42
Future Vol, veh/h	771	41	52	434	7	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	5	0	13	0	14
Mvmt Flow	838	45	57	472	8	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	838	0	1424	838
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	586	-
Critical Hdwy	-	-	4.1	-	6.4	6.34
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.426
Pot Cap-1 Maneuver	-	0	805	-	151	349
Stage 1	-	0	-	-	428	-
Stage 2	-	0	-	-	560	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	805	-	137	349
Mov Cap-2 Maneuver	-	-	-	-	274	-
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	506	-

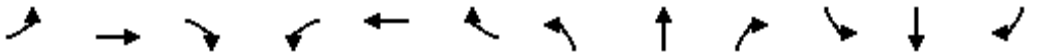
Approach	EB	WB	NB
HCM Control Delay, s	0	1	17.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	274	349	-	805	-
HCM Lane V/C Ratio	0.028	0.131	-	0.07	-
HCM Control Delay (s)	18.5	16.9	-	9.8	-
HCM Lane LOS	C	C	-	A	-
HCM 95th %tile Q(veh)	0.1	0.4	-	0.2	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	342	13	26	529	117	125
Future Volume (veh/h)	342	13	26	529	117	125
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1159	1559	1870	1885	1900
Adj Flow Rate, veh/h	372	14	28	575	127	136
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	50	23	2	1	0
Cap, veh/h	1362	710	631	1351	207	185
Arrive On Green	0.72	0.72	0.72	0.72	0.12	0.12
Sat Flow, veh/h	1885	982	831	1870	1795	1610
Grp Volume(v), veh/h	372	14	28	575	127	136
Grp Sat Flow(s),veh/h/ln	1885	982	831	1870	1795	1610
Q Serve(g_s), s	5.7	0.3	1.0	10.2	5.6	6.8
Cycle Q Clear(g_c), s	5.7	0.3	6.7	10.2	5.6	6.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1362	710	631	1351	207	185
V/C Ratio(X)	0.27	0.02	0.04	0.43	0.61	0.73
Avail Cap(c_a), veh/h	1362	710	631	1351	757	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.0	3.2	5.1	4.6	35.0	35.5
Incr Delay (d2), s/veh	0.5	0.1	0.1	1.0	3.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	0.1	0.3	4.6	4.6	5.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.5	3.3	5.3	5.6	38.0	41.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	386			603	263	
Approach Delay, s/veh	4.4			5.6	39.6	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		16.1		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		7.7		8.8		12.2
Green Ext Time (p_c), s		2.1		0.8		3.8

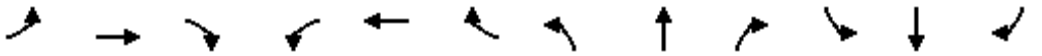
Intersection Summary		
HCM 6th Ctrl Delay	12.4	
HCM 6th LOS	B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	640	35	98	880	31	66	32	37	27	26	29
Future Volume (veh/h)	27	640	35	98	880	31	66	32	37	27	26	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1752	1870	1870	1856	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	28	653	36	100	898	32	67	33	38	28	27	30
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	10	2	2	3	0	0	0	0	0
Cap, veh/h	71	1227	66	575	1328	47	222	78	89	88	59	49
Arrive On Green	0.74	0.74	0.74	0.74	0.74	0.74	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	34	1658	89	706	1795	64	1336	805	928	313	615	506
Grp Volume(v), veh/h	717	0	0	100	0	930	67	0	71	85	0	0
Grp Sat Flow(s),veh/h/ln	1782	0	0	706	0	1859	1336	0	1733	1435	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	21.5	0.0	0.0	3.2	1.8	0.0	0.0
Cycle Q Clear(g_c), s	13.5	0.0	0.0	5.5	0.0	21.5	3.7	0.0	3.2	5.0	0.0	0.0
Prop In Lane	0.04		0.05	1.00		0.03	1.00		0.54	0.33		0.35
Lane Grp Cap(c), veh/h	1364	0	0	575	0	1375	222	0	167	196	0	0
V/C Ratio(X)	0.53	0.00	0.00	0.17	0.00	0.68	0.30	0.00	0.42	0.43	0.00	0.00
Avail Cap(c_a), veh/h	1364	0	0	575	0	1375	668	0	746	726	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.6	0.0	0.0	3.5	0.0	5.6	35.3	0.0	35.1	35.8	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.7	0.0	2.7	0.8	0.0	1.7	1.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.5	0.0	0.0	0.7	0.0	8.8	2.3	0.0	2.5	2.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.0	0.0	0.0	4.2	0.0	8.3	36.1	0.0	36.8	37.3	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	A
Approach Vol, veh/h		717			1030			138			85	
Approach Delay, s/veh		6.0			7.9			36.4			37.3	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		68.0		14.5		68.0		14.5				
Change Period (Y+Rc), s		7.0		6.5		7.0		6.5				
Max Green Setting (Gmax), s		61.0		35.5		61.0		35.5				
Max Q Clear Time (g_c+I1), s		15.5		5.7		23.5		7.0				
Green Ext Time (p_c), s		5.4		0.6		8.8		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			10.5									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	499	246	41	812	41	245	107	44	47	184	36
Future Volume (veh/h)	42	499	246	41	812	41	245	107	44	47	184	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1870	1870	1737	1870	1870	1811	1841	1841	1870	1737	1737
Adj Flow Rate, veh/h	44	520	256	43	846	43	255	111	46	49	192	38
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	2	2	11	2	2	6	4	4	2	11	11
Cap, veh/h	163	657	323	208	980	50	299	383	159	372	437	86
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	610	1183	582	646	1765	90	1114	1236	512	1230	1408	279
Grp Volume(v), veh/h	44	0	776	43	0	889	255	0	157	49	0	230
Grp Sat Flow(s),veh/h/ln	610	0	1766	646	0	1854	1114	0	1749	1230	0	1687
Q Serve(g_s), s	6.4	0.0	33.7	5.5	0.0	39.6	19.5	0.0	6.6	3.0	0.0	10.5
Cycle Q Clear(g_c), s	46.0	0.0	33.7	39.2	0.0	39.6	30.0	0.0	6.6	9.6	0.0	10.5
Prop In Lane	1.00		0.33	1.00		0.05	1.00		0.29	1.00		0.17
Lane Grp Cap(c), veh/h	163	0	981	208	0	1030	299	0	542	372	0	523
V/C Ratio(X)	0.27	0.00	0.79	0.21	0.00	0.86	0.85	0.00	0.29	0.13	0.00	0.44
Avail Cap(c_a), veh/h	266	0	1278	317	0	1342	299	0	542	372	0	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.0	0.0	17.1	32.6	0.0	18.4	39.8	0.0	25.3	28.9	0.0	26.6
Incr Delay (d2), s/veh	0.9	0.0	2.6	0.5	0.0	4.8	20.6	0.0	0.3	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	0.0	17.7	1.5	0.0	21.7	12.2	0.0	4.7	1.6	0.0	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.9	0.0	19.7	33.1	0.0	23.2	60.4	0.0	25.6	29.1	0.0	27.2
LnGrp LOS	D	A	B	C	A	C	E	A	C	C	A	C
Approach Vol, veh/h		820			932			412			279	
Approach Delay, s/veh		20.7			23.6			47.1			27.5	
Approach LOS		C			C			D			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.7		36.0		60.7		36.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		48.0		32.0		41.6		12.5				
Green Ext Time (p_c), s		5.7		0.0		7.2		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			27.1									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	29	0	0	47	102	7
Future Vol, veh/h	29	0	0	47	102	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	4	8	3
Mvmt Flow	30	0	0	49	106	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	55	15
Stage 1	-	-	-	-	30	-
Stage 2	-	-	-	-	25	-
Critical Hdwy	-	-	-	-	6.96	6.96
Critical Hdwy Stg 1	-	-	-	-	5.96	-
Critical Hdwy Stg 2	-	-	-	-	5.96	-
Follow-up Hdwy	-	-	-	-	3.58	3.33
Pot Cap-1 Maneuver	-	0	0	-	929	1057
Stage 1	-	0	0	-	971	-
Stage 2	-	0	0	-	977	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	929	1057
Mov Cap-2 Maneuver	-	-	-	-	929	-
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	977	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	929	1057	-	-
HCM Lane V/C Ratio	0.114	0.007	-	-
HCM Control Delay (s)	9.4	8.4	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.4	0	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	664	40	49	983	26	137
Future Vol, veh/h	664	40	49	983	26	137
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	5	0	2	0	7
Mvmt Flow	722	43	53	1068	28	149

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	722	0	1896	722
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	1174	-
Critical Hdwy	-	-	4.1	-	6.4	6.27
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.363
Pot Cap-1 Maneuver	-	0	889	-	77	419
Stage 1	-	0	-	-	485	-
Stage 2	-	0	-	-	296	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	889	-	66	419
Mov Cap-2 Maneuver	-	-	-	-	178	-
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	252	-

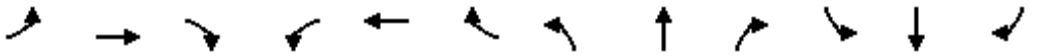
Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	20
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	178	419	-	889	-
HCM Lane V/C Ratio	0.159	0.355	-	0.06	-
HCM Control Delay (s)	29	18.3	-	9.3	-
HCM Lane LOS	D	C	-	A	-
HCM 95th %tile Q(veh)	0.6	1.6	-	0.2	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	412	14	9	413	20	24
Future Volume (veh/h)	412	14	9	413	20	24
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1648	1900	1885	1633	1900
Adj Flow Rate, veh/h	429	15	9	430	21	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	17	0	1	18	0
Cap, veh/h	1440	1067	758	1440	100	104
Arrive On Green	0.76	0.76	0.76	0.76	0.06	0.06
Sat Flow, veh/h	1885	1397	961	1885	1555	1610
Grp Volume(v), veh/h	429	15	9	430	21	25
Grp Sat Flow(s),veh/h/ln	1885	1397	961	1885	1555	1610
Q Serve(g_s), s	5.5	0.2	0.2	5.5	1.0	1.2
Cycle Q Clear(g_c), s	5.5	0.2	5.7	5.5	1.0	1.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1440	1067	758	1440	100	104
V/C Ratio(X)	0.30	0.01	0.01	0.30	0.21	0.24
Avail Cap(c_a), veh/h	1440	1067	758	1440	693	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.8	2.2	3.7	2.8	34.8	34.9
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.5	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	0.0	0.1	1.7	0.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.4	2.2	3.7	3.4	35.9	36.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	444			439	46	
Approach Delay, s/veh	3.3			3.4	36.0	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		11.6		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		7.5		3.2		7.7
Green Ext Time (p_c), s		2.5		0.1		2.5

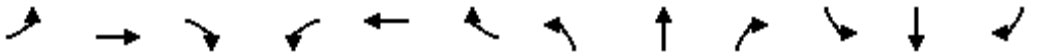
Intersection Summary	
HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	699	42	106	681	22	59	28	41	26	25	37
Future Volume (veh/h)	41	699	42	106	681	22	59	28	41	26	25	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1781	1870	1870	1826	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	44	744	45	113	724	23	63	30	44	28	27	39
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	8	2	2	5	0	0	0	0	0
Cap, veh/h	87	1202	71	519	1332	42	212	68	99	83	53	57
Arrive On Green	0.74	0.74	0.74	0.74	0.74	0.74	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	56	1626	96	654	1803	57	1304	696	1021	276	548	584
Grp Volume(v), veh/h	833	0	0	113	0	747	63	0	74	94	0	0
Grp Sat Flow(s),veh/h/ln	1778	0	0	654	0	1860	1304	0	1716	1408	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	14.5	0.0	0.0	3.4	2.3	0.0	0.0
Cycle Q Clear(g_c), s	17.4	0.0	0.0	8.2	0.0	14.5	3.9	0.0	3.4	5.7	0.0	0.0
Prop In Lane	0.05		0.05	1.00		0.03	1.00		0.59	0.30		0.41
Lane Grp Cap(c), veh/h	1360	0	0	519	0	1375	212	0	167	194	0	0
V/C Ratio(X)	0.61	0.00	0.00	0.22	0.00	0.54	0.30	0.00	0.44	0.48	0.00	0.00
Avail Cap(c_a), veh/h	1360	0	0	519	0	1375	646	0	738	722	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.1	0.0	0.0	3.9	0.0	4.7	35.4	0.0	35.1	36.1	0.0	0.0
Incr Delay (d2), s/veh	2.1	0.0	0.0	1.0	0.0	1.5	0.8	0.0	1.8	1.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.4	0.0	0.0	0.9	0.0	6.0	2.2	0.0	2.6	3.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.1	0.0	0.0	4.8	0.0	6.2	36.1	0.0	37.0	38.0	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D	A	D	D	A	A
Approach Vol, veh/h		833			860			137			94	
Approach Delay, s/veh		7.1			6.1			36.6			38.0	
Approach LOS		A			A			D			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		68.0		14.5		68.0		14.5				
Change Period (Y+Rc), s		7.0		6.5		7.0		6.5				
Max Green Setting (Gmax), s		61.0		35.5		61.0		35.5				
Max Q Clear Time (g_c+I1), s		19.4		5.9		16.5		7.7				
Green Ext Time (p_c), s		6.8		0.6		6.7		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			10.3									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	590	227	39	630	84	219	222	49	51	153	48
Future Volume (veh/h)	52	590	227	39	630	84	219	222	49	51	153	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1885	1811	1885	1885	1796	1870	1870	1900	1841	1841
Adj Flow Rate, veh/h	55	621	239	41	663	88	231	234	52	54	161	51
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	1	1	6	1	1	7	2	2	0	4	4
Cap, veh/h	245	714	275	161	897	119	322	465	103	281	420	133
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	700	1296	499	622	1630	216	1123	1482	329	1110	1340	424
Grp Volume(v), veh/h	55	0	860	41	0	751	231	0	286	54	0	212
Grp Sat Flow(s),veh/h/ln	700	0	1795	622	0	1846	1123	0	1811	1110	0	1764
Q Serve(g_s), s	6.2	0.0	39.5	5.8	0.0	29.5	19.3	0.0	12.3	4.0	0.0	9.0
Cycle Q Clear(g_c), s	35.7	0.0	39.5	45.4	0.0	29.5	28.3	0.0	12.3	16.3	0.0	9.0
Prop In Lane	1.00		0.28	1.00		0.12	1.00		0.18	1.00		0.24
Lane Grp Cap(c), veh/h	245	0	988	161	0	1016	322	0	568	281	0	553
V/C Ratio(X)	0.22	0.00	0.87	0.26	0.00	0.74	0.72	0.00	0.50	0.19	0.00	0.38
Avail Cap(c_a), veh/h	372	0	1314	273	0	1351	322	0	568	281	0	553
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.8	0.0	18.6	38.1	0.0	16.3	36.6	0.0	26.8	33.4	0.0	25.6
Incr Delay (d2), s/veh	0.5	0.0	5.1	0.8	0.0	1.5	7.4	0.0	0.7	0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.8	0.0	21.2	1.6	0.0	16.1	9.6	0.0	8.8	1.9	0.0	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.3	0.0	23.7	39.0	0.0	17.8	44.1	0.0	27.5	33.7	0.0	26.0
LnGrp LOS	C	A	C	D	A	B	D	A	C	C	A	C
Approach Vol, veh/h		915			792			517			266	
Approach Delay, s/veh		24.1			18.9			34.9			27.6	
Approach LOS		C			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		59.6		36.0		59.6		36.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		41.5		30.3		47.4		18.3				
Green Ext Time (p_c), s		7.1		0.0		5.3		1.0				

Intersection Summary												
HCM 6th Ctrl Delay			25.1									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	6.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	160	0	0	378	270	298
Future Vol, veh/h	160	0	0	378	270	298
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	5	4	2
Mvmt Flow	165	0	0	390	278	307

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	360	83
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	195	-
Critical Hdwy	-	-	-	-	6.88	6.94
Critical Hdwy Stg 1	-	-	-	-	5.88	-
Critical Hdwy Stg 2	-	-	-	-	5.88	-
Follow-up Hdwy	-	-	-	-	3.54	3.32
Pot Cap-1 Maneuver	-	0	0	-	607	960
Stage 1	-	0	0	-	841	-
Stage 2	-	0	0	-	813	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	607	960
Mov Cap-2 Maneuver	-	-	-	-	607	-
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	813	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	607	960	-	-
HCM Lane V/C Ratio	0.459	0.32	-	-
HCM Control Delay (s)	15.9	10.5	-	-
HCM Lane LOS	C	B	-	-
HCM 95th %tile Q(veh)	2.4	1.4	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	723	43	53	788	21	115
Future Vol, veh/h	723	43	53	788	21	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	7	0	3	0	9
Mvmt Flow	786	47	58	857	23	125

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	786	0	1759	786
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	973	-
Critical Hdwy	-	-	4.1	-	6.4	6.29
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.381
Pot Cap-1 Maneuver	-	0	842	-	94	381
Stage 1	-	0	-	-	453	-
Stage 2	-	0	-	-	370	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	842	-	82	381
Mov Cap-2 Maneuver	-	-	-	-	208	-
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	322	-

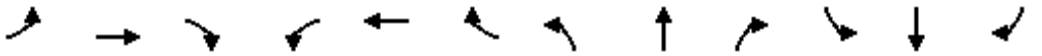
Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	19.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	208	381	-	842	-
HCM Lane V/C Ratio	0.11	0.328	-	0.068	-
HCM Control Delay (s)	24.4	19	-	9.6	-
HCM Lane LOS	C	C	-	A	-
HCM 95th %tile Q(veh)	0.4	1.4	-	0.2	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	410	61	44	232	36	21
Future Volume (veh/h)	410	61	44	232	36	21
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1722	1678	1767	1278	1248
Adj Flow Rate, veh/h	461	69	49	261	40	24
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	12	15	9	42	44
Cap, veh/h	1355	1101	615	1332	93	80
Arrive On Green	0.75	0.75	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1796	1459	784	1767	1217	1058
Grp Volume(v), veh/h	461	69	49	261	40	24
Grp Sat Flow(s),veh/h/ln	1796	1459	784	1767	1217	1058
Q Serve(g_s), s	6.8	1.0	1.8	3.4	2.5	1.7
Cycle Q Clear(g_c), s	6.8	1.0	8.5	3.4	2.5	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1355	1101	615	1332	93	80
V/C Ratio(X)	0.34	0.06	0.08	0.20	0.43	0.30
Avail Cap(c_a), veh/h	1355	1101	615	1332	535	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.2	2.5	4.6	2.8	35.1	34.7
Incr Delay (d2), s/veh	0.7	0.1	0.3	0.3	3.2	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.3	0.3	0.4	1.1	1.5	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.9	2.6	4.9	3.1	38.3	36.8
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	530			310	64	
Approach Delay, s/veh	3.7			3.4	37.7	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		12.6		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		8.8		4.5		10.5
Green Ext Time (p_c), s		3.0		0.2		1.8

Intersection Summary	
HCM 6th Ctrl Delay	6.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	662	218	38	283	27	200	137	30	43	183	37
Future Volume (veh/h)	23	662	218	38	283	27	200	137	30	43	183	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1796	1796	1411	1693	1693	1767	1678	1678	1767	1826	1826
Adj Flow Rate, veh/h	26	761	251	44	325	31	230	157	34	49	210	43
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	7	7	33	14	14	9	15	15	9	5	5
Cap, veh/h	555	801	264	95	942	90	216	355	77	253	390	80
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	952	1293	426	420	1521	145	1064	1336	289	1126	1471	301
Grp Volume(v), veh/h	26	0	1012	44	0	356	230	0	191	49	0	253
Grp Sat Flow(s),veh/h/ln	952	0	1719	420	0	1666	1064	0	1626	1126	0	1772
Q Serve(g_s), s	1.5	0.0	61.5	8.5	0.0	11.7	16.2	0.0	11.1	4.3	0.0	13.8
Cycle Q Clear(g_c), s	13.2	0.0	61.5	70.0	0.0	11.7	30.0	0.0	11.1	15.3	0.0	13.8
Prop In Lane	1.00		0.25	1.00		0.09	1.00		0.18	1.00		0.17
Lane Grp Cap(c), veh/h	555	0	1065	95	0	1032	216	0	432	253	0	470
V/C Ratio(X)	0.05	0.00	0.95	0.46	0.00	0.34	1.06	0.00	0.44	0.19	0.00	0.54
Avail Cap(c_a), veh/h	555	0	1065	95	0	1032	216	0	432	253	0	470
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	0.0	19.9	53.5	0.0	10.4	50.8	0.0	34.5	40.9	0.0	35.6
Incr Delay (d2), s/veh	0.0	0.0	16.9	3.5	0.0	0.2	79.4	0.0	0.7	0.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.0	33.3	2.3	0.0	6.7	16.7	0.0	7.7	2.1	0.0	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	0.0	36.8	56.9	0.0	10.6	130.2	0.0	35.3	41.3	0.0	36.8
LnGrp LOS	B	A	D	E	A	B	F	A	D	D	A	D
Approach Vol, veh/h		1038			400			421			302	
Approach Delay, s/veh		36.2			15.7			87.1			37.5	
Approach LOS		D			B			F			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		77.0		36.0		77.0		36.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		63.5		32.0		72.0		17.3				
Green Ext Time (p_c), s		3.7		0.0		0.0		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			42.5									
HCM 6th LOS			D									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	772	62	109	377	21	42
Future Volume (veh/h)	772	62	109	377	21	42
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1811	1811	1693	1693	1826	1693
Adj Flow Rate, veh/h	839	67	118	410	23	46
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	14	14	5	14
Cap, veh/h	1240	99	184	593	138	114
Arrive On Green	0.75	0.75	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1655	132	171	792	1739	1434
Grp Volume(v), veh/h	0	906	528	0	23	46
Grp Sat Flow(s),veh/h/ln	0	1787	962	0	1739	1434
Q Serve(g_s), s	0.0	20.3	14.8	0.0	1.0	2.4
Cycle Q Clear(g_c), s	0.0	20.3	35.1	0.0	1.0	2.4
Prop In Lane		0.07	0.22		1.00	1.00
Lane Grp Cap(c), veh/h	0	1339	777	0	138	114
V/C Ratio(X)	0.00	0.68	0.68	0.00	0.17	0.41
Avail Cap(c_a), veh/h	0	1339	777	0	795	656
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	5.0	7.1	0.0	33.8	34.5
Incr Delay (d2), s/veh	0.0	2.8	4.8	0.0	0.6	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	7.5	4.2	0.0	0.8	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.8	11.8	0.0	34.4	36.8
LnGrp LOS	A	A	B	A	C	D
Approach Vol, veh/h	906			528	69	
Approach Delay, s/veh	7.8			11.8	36.0	
Approach LOS	A			B	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		66.0		12.7		66.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		59.0		36.0		59.0
Max Q Clear Time (g_c+I1), s		22.3		4.4		37.1
Green Ext Time (p_c), s		7.4		0.2		4.0

Intersection Summary		
HCM 6th Ctrl Delay		10.5
HCM 6th LOS		B

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	788	17	11	363	24	8	0	5	41	1	44
Future Vol, veh/h	15	788	17	11	363	24	8	0	5	41	1	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	6	10	20	14	14	0	0	50	0	0	0
Mvmt Flow	16	838	18	12	386	26	9	0	5	44	1	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	412	0	0	856	0	0	1326	1315	847	1305	1311	399
Stage 1	-	-	-	-	-	-	879	879	-	423	423	-
Stage 2	-	-	-	-	-	-	447	436	-	882	888	-
Critical Hdwy	4.1	-	-	4.3	-	-	7.1	6.5	6.7	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.38	-	-	3.5	4	3.75	3.5	4	3.3
Pot Cap-1 Maneuver	1158	-	-	713	-	-	134	159	299	138	160	655
Stage 1	-	-	-	-	-	-	345	368	-	613	591	-
Stage 2	-	-	-	-	-	-	595	583	-	344	365	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1158	-	-	713	-	-	119	152	299	131	152	655
Mov Cap-2 Maneuver	-	-	-	-	-	-	119	152	-	131	152	-
Stage 1	-	-	-	-	-	-	336	358	-	597	578	-
Stage 2	-	-	-	-	-	-	539	570	-	329	356	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.3	29.8	32.1
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	119	299	1158	-	-	713	-	-	222
HCM Lane V/C Ratio	0.072	0.018	0.014	-	-	0.016	-	-	0.412
HCM Control Delay (s)	37.6	17.3	8.2	0	-	10.1	0	-	32.1
HCM Lane LOS	E	C	A	A	-	B	A	-	D
HCM 95th %tile Q(veh)	0.2	0.1	0	-	-	0.1	-	-	1.9

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	49	0	0	56	121	14
Future Vol, veh/h	49	0	0	56	121	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	14	0	0	9	9	4
Mvmt Flow	53	0	0	61	132	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	84	27
Stage 1	-	-	-	-	53	-
Stage 2	-	-	-	-	31	-
Critical Hdwy	-	-	-	-	6.98	6.98
Critical Hdwy Stg 1	-	-	-	-	5.98	-
Critical Hdwy Stg 2	-	-	-	-	5.98	-
Follow-up Hdwy	-	-	-	-	3.59	3.34
Pot Cap-1 Maneuver	-	0	0	-	888	1036
Stage 1	-	0	0	-	943	-
Stage 2	-	0	0	-	967	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	888	1036
Mov Cap-2 Maneuver	-	-	-	-	888	-
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	967	-

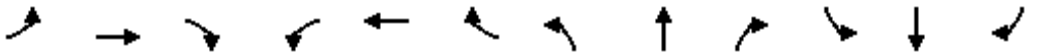
Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	888	1036	-	-
HCM Lane V/C Ratio	0.148	0.015	-	-
HCM Control Delay (s)	9.8	8.5	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.5	0	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	342	13	26	529	117	125
Future Volume (veh/h)	342	13	26	529	117	125
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1159	1559	1870	1885	1900
Adj Flow Rate, veh/h	372	14	28	575	127	136
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	50	23	2	1	0
Cap, veh/h	1362	710	631	1351	207	185
Arrive On Green	0.72	0.72	0.72	0.72	0.12	0.12
Sat Flow, veh/h	1885	982	831	1870	1795	1610
Grp Volume(v), veh/h	372	14	28	575	127	136
Grp Sat Flow(s),veh/h/ln	1885	982	831	1870	1795	1610
Q Serve(g_s), s	5.7	0.3	1.0	10.2	5.6	6.8
Cycle Q Clear(g_c), s	5.7	0.3	6.7	10.2	5.6	6.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1362	710	631	1351	207	185
V/C Ratio(X)	0.27	0.02	0.04	0.43	0.61	0.73
Avail Cap(c_a), veh/h	1362	710	631	1351	757	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.0	3.2	5.1	4.6	35.0	35.5
Incr Delay (d2), s/veh	0.5	0.1	0.1	1.0	3.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	0.1	0.3	4.6	4.6	5.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.5	3.3	5.3	5.6	38.0	41.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	386			603	263	
Approach Delay, s/veh	4.4			5.6	39.6	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		16.1		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		7.7		8.8		12.2
Green Ext Time (p_c), s		2.1		0.8		3.8

Intersection Summary		
HCM 6th Ctrl Delay	12.4	
HCM 6th LOS	B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	499	246	41	812	41	245	107	44	47	184	36
Future Volume (veh/h)	42	499	246	41	812	41	245	107	44	47	184	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1870	1870	1737	1870	1870	1811	1841	1841	1870	1737	1737
Adj Flow Rate, veh/h	44	520	256	43	846	43	255	111	46	49	192	38
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	2	2	11	2	2	6	4	4	2	11	11
Cap, veh/h	163	657	323	208	980	50	299	383	159	372	437	86
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	610	1183	582	646	1765	90	1114	1236	512	1230	1408	279
Grp Volume(v), veh/h	44	0	776	43	0	889	255	0	157	49	0	230
Grp Sat Flow(s),veh/h/ln	610	0	1766	646	0	1854	1114	0	1749	1230	0	1687
Q Serve(g_s), s	6.4	0.0	33.7	5.5	0.0	39.6	19.5	0.0	6.6	3.0	0.0	10.5
Cycle Q Clear(g_c), s	46.0	0.0	33.7	39.2	0.0	39.6	30.0	0.0	6.6	9.6	0.0	10.5
Prop In Lane	1.00		0.33	1.00		0.05	1.00		0.29	1.00		0.17
Lane Grp Cap(c), veh/h	163	0	981	208	0	1030	299	0	542	372	0	523
V/C Ratio(X)	0.27	0.00	0.79	0.21	0.00	0.86	0.85	0.00	0.29	0.13	0.00	0.44
Avail Cap(c_a), veh/h	266	0	1278	317	0	1342	299	0	542	372	0	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.0	0.0	17.1	32.6	0.0	18.4	39.8	0.0	25.3	28.9	0.0	26.6
Incr Delay (d2), s/veh	0.9	0.0	2.6	0.5	0.0	4.8	20.6	0.0	0.3	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	0.0	17.7	1.5	0.0	21.7	12.2	0.0	4.7	1.6	0.0	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.9	0.0	19.7	33.1	0.0	23.2	60.4	0.0	25.6	29.1	0.0	27.2
LnGrp LOS	D	A	B	C	A	C	E	A	C	C	A	C
Approach Vol, veh/h		820			932			412			279	
Approach Delay, s/veh		20.7			23.6			47.1			27.5	
Approach LOS		C			C			D			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.7		36.0		60.7		36.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		48.0		32.0		41.6		12.5				
Green Ext Time (p_c), s		5.7		0.0		7.2		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			27.1									
HCM 6th LOS			C									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	664	60	105	927	78	137
Future Volume (veh/h)	664	60	105	927	78	137
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1856	1796
Adj Flow Rate, veh/h	722	65	114	1008	85	149
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	3	7
Cap, veh/h	1206	109	128	941	224	193
Arrive On Green	0.71	0.71	0.71	0.71	0.13	0.13
Sat Flow, veh/h	1691	152	113	1319	1767	1522
Grp Volume(v), veh/h	0	787	1122	0	85	149
Grp Sat Flow(s),veh/h/ln	0	1843	1433	0	1767	1522
Q Serve(g_s), s	0.0	18.0	42.0	0.0	3.7	8.0
Cycle Q Clear(g_c), s	0.0	18.0	60.0	0.0	3.7	8.0
Prop In Lane		0.08	0.10		1.00	1.00
Lane Grp Cap(c), veh/h	0	1314	1069	0	224	193
V/C Ratio(X)	0.00	0.60	1.05	0.00	0.38	0.77
Avail Cap(c_a), veh/h	0	1314	1069	0	735	633
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.0	14.8	0.0	33.7	35.6
Incr Delay (d2), s/veh	0.0	2.0	41.6	0.0	1.1	6.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	8.3	37.4	0.0	2.9	5.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	8.1	56.4	0.0	34.8	42.1
LnGrp LOS	A	A	F	A	C	D
Approach Vol, veh/h	787			1122	234	
Approach Delay, s/veh	8.1			56.4	39.4	
Approach LOS	A			E	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		17.1		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		20.0		10.0		62.0
Green Ext Time (p_c), s		5.8		0.7		0.0

Intersection Summary		
HCM 6th Ctrl Delay		36.8
HCM 6th LOS		D

Intersection	
Int Delay, s/veh	18.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	640	35	42	907	56	39	7	37	47	6	29
Future Vol, veh/h	27	640	35	42	907	56	39	7	37	47	6	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	2	0	4	2	3	0	0	0	4	0	0
Mvmt Flow	28	653	36	43	926	57	40	7	38	48	6	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	983	0	0	689	0	0	1786	1796	671	1791	1786	955
Stage 1	-	-	-	-	-	-	727	727	-	1041	1041	-
Stage 2	-	-	-	-	-	-	1059	1069	-	750	745	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.1	6.5	6.2	7.14	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.5	4	3.3	3.536	4	3.3
Pot Cap-1 Maneuver	711	-	-	896	-	-	64	81	460	62	82	316
Stage 1	-	-	-	-	-	-	419	432	-	275	310	-
Stage 2	-	-	-	-	-	-	274	300	-	400	424	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	711	-	-	896	-	-	47	68	460	~ 46	69	316
Mov Cap-2 Maneuver	-	-	-	-	-	-	47	68	-	~ 46	69	-
Stage 1	-	-	-	-	-	-	392	404	-	257	277	-
Stage 2	-	-	-	-	-	-	217	268	-	338	397	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.4	116.4	288.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	47	240	711	-	-	896	-	-	68
HCM Lane V/C Ratio	0.847	0.187	0.039	-	-	0.048	-	-	1.23
HCM Control Delay (s)	221.4	23.4	10.3	0	-	9.2	0	-	288.7
HCM Lane LOS	F	C	B	A	-	A	A	-	F
HCM 95th %tile Q(veh)	3.4	0.7	0.1	-	-	0.1	-	-	6.7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	29	0	0	47	102	7
Future Vol, veh/h	29	0	0	47	102	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	4	8	3
Mvmt Flow	30	0	0	49	106	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	55	15
Stage 1	-	-	-	-	30	-
Stage 2	-	-	-	-	25	-
Critical Hdwy	-	-	-	-	6.96	6.96
Critical Hdwy Stg 1	-	-	-	-	5.96	-
Critical Hdwy Stg 2	-	-	-	-	5.96	-
Follow-up Hdwy	-	-	-	-	3.58	3.33
Pot Cap-1 Maneuver	-	0	0	-	929	1057
Stage 1	-	0	0	-	971	-
Stage 2	-	0	0	-	977	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	929	1057
Mov Cap-2 Maneuver	-	-	-	-	929	-
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	977	-

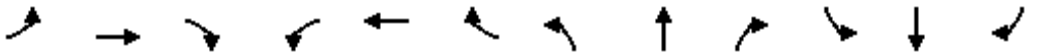
Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	929	1057	-	-
HCM Lane V/C Ratio	0.114	0.007	-	-
HCM Control Delay (s)	9.4	8.4	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.4	0	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	412	14	9	413	20	24
Future Volume (veh/h)	412	14	9	413	20	24
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1648	1900	1885	1633	1900
Adj Flow Rate, veh/h	429	15	9	430	21	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	17	0	1	18	0
Cap, veh/h	1440	1067	758	1440	100	104
Arrive On Green	0.76	0.76	0.76	0.76	0.06	0.06
Sat Flow, veh/h	1885	1397	961	1885	1555	1610
Grp Volume(v), veh/h	429	15	9	430	21	25
Grp Sat Flow(s),veh/h/ln	1885	1397	961	1885	1555	1610
Q Serve(g_s), s	5.5	0.2	0.2	5.5	1.0	1.2
Cycle Q Clear(g_c), s	5.5	0.2	5.7	5.5	1.0	1.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1440	1067	758	1440	100	104
V/C Ratio(X)	0.30	0.01	0.01	0.30	0.21	0.24
Avail Cap(c_a), veh/h	1440	1067	758	1440	693	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.8	2.2	3.7	2.8	34.8	34.9
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.5	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	0.0	0.1	1.7	0.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.4	2.2	3.7	3.4	35.9	36.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	444			439	46	
Approach Delay, s/veh	3.3			3.4	36.0	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		11.6		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		7.5		3.2		7.7
Green Ext Time (p_c), s		2.5		0.1		2.5

Intersection Summary	
HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	590	227	39	630	84	219	222	49	51	153	48
Future Volume (veh/h)	52	590	227	39	630	84	219	222	49	51	153	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1885	1811	1885	1885	1796	1870	1870	1900	1841	1841
Adj Flow Rate, veh/h	55	621	239	41	663	88	231	234	52	54	161	51
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	1	1	6	1	1	7	2	2	0	4	4
Cap, veh/h	245	714	275	161	897	119	322	465	103	281	420	133
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	700	1296	499	622	1630	216	1123	1482	329	1110	1340	424
Grp Volume(v), veh/h	55	0	860	41	0	751	231	0	286	54	0	212
Grp Sat Flow(s),veh/h/ln	700	0	1795	622	0	1846	1123	0	1811	1110	0	1764
Q Serve(g_s), s	6.2	0.0	39.5	5.8	0.0	29.5	19.3	0.0	12.3	4.0	0.0	9.0
Cycle Q Clear(g_c), s	35.7	0.0	39.5	45.4	0.0	29.5	28.3	0.0	12.3	16.3	0.0	9.0
Prop In Lane	1.00		0.28	1.00		0.12	1.00		0.18	1.00		0.24
Lane Grp Cap(c), veh/h	245	0	988	161	0	1016	322	0	568	281	0	553
V/C Ratio(X)	0.22	0.00	0.87	0.26	0.00	0.74	0.72	0.00	0.50	0.19	0.00	0.38
Avail Cap(c_a), veh/h	372	0	1314	273	0	1351	322	0	568	281	0	553
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.8	0.0	18.6	38.1	0.0	16.3	36.6	0.0	26.8	33.4	0.0	25.6
Incr Delay (d2), s/veh	0.5	0.0	5.1	0.8	0.0	1.5	7.4	0.0	0.7	0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.8	0.0	21.2	1.6	0.0	16.1	9.6	0.0	8.8	1.9	0.0	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.3	0.0	23.7	39.0	0.0	17.8	44.1	0.0	27.5	33.7	0.0	26.0
LnGrp LOS	C	A	C	D	A	B	D	A	C	C	A	C
Approach Vol, veh/h		915			792			517			266	
Approach Delay, s/veh		24.1			18.9			34.9			27.6	
Approach LOS		C			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		59.6		36.0		59.6		36.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		41.5		30.3		47.4		18.3				
Green Ext Time (p_c), s		7.1		0.0		5.3		1.0				

Intersection Summary												
HCM 6th Ctrl Delay			25.1									
HCM 6th LOS			C									

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	723	65	115	727	64	115
Future Volume (veh/h)	723	65	115	727	64	115
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1885	1870	1870	1856	1767
Adj Flow Rate, veh/h	786	71	125	790	70	125
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	1	2	2	3	9
Cap, veh/h	1236	112	149	839	196	166
Arrive On Green	0.73	0.73	0.73	0.73	0.11	0.11
Sat Flow, veh/h	1704	154	137	1157	1767	1497
Grp Volume(v), veh/h	0	857	915	0	70	125
Grp Sat Flow(s),veh/h/ln	0	1857	1294	0	1767	1497
Q Serve(g_s), s	0.0	19.4	37.1	0.0	3.0	6.7
Cycle Q Clear(g_c), s	0.0	19.4	56.5	0.0	3.0	6.7
Prop In Lane		0.08	0.14		1.00	1.00
Lane Grp Cap(c), veh/h	0	1348	988	0	196	166
V/C Ratio(X)	0.00	0.64	0.93	0.00	0.36	0.75
Avail Cap(c_a), veh/h	0	1348	988	0	748	634
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	5.8	12.5	0.0	34.0	35.6
Incr Delay (d2), s/veh	0.0	2.3	15.5	0.0	1.1	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	8.5	15.9	0.0	2.4	4.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	8.1	28.0	0.0	35.1	42.3
LnGrp LOS	A	A	C	A	D	D
Approach Vol, veh/h	857			915	195	
Approach Delay, s/veh	8.1			28.0	39.7	
Approach LOS	A			C	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		15.7		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		21.4		8.7		58.5
Green Ext Time (p_c), s		6.7		0.6		0.9

Intersection Summary		
HCM 6th Ctrl Delay	20.5	
HCM 6th LOS	C	

Intersection	
Int Delay, s/veh	19.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	699	42	44	703	44	37	7	41	48	3	37
Future Vol, veh/h	41	699	42	44	703	44	37	7	41	48	3	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	5	1	0	0	2	5	0	0	0	8	0	0
Mvmt Flow	44	744	45	47	748	47	39	7	44	51	3	39

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	795	0	0	789	0	0	1742	1744	767	1746	1743	772
Stage 1	-	-	-	-	-	-	855	855	-	866	866	-
Stage 2	-	-	-	-	-	-	887	889	-	880	877	-
Critical Hdwy	4.15	-	-	4.1	-	-	7.1	6.5	6.2	7.18	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Follow-up Hdwy	2.245	-	-	2.2	-	-	3.5	4	3.3	3.572	4	3.3
Pot Cap-1 Maneuver	813	-	-	840	-	-	69	87	405	65	88	403
Stage 1	-	-	-	-	-	-	356	378	-	340	373	-
Stage 2	-	-	-	-	-	-	341	364	-	334	369	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	813	-	-	840	-	-	51	71	405	~ 46	71	403
Mov Cap-2 Maneuver	-	-	-	-	-	-	51	71	-	~ 46	71	-
Stage 1	-	-	-	-	-	-	321	341	-	307	335	-
Stage 2	-	-	-	-	-	-	274	327	-	263	333	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.5	95.8	282.3
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	51	240	813	-	-	840	-	-	75
HCM Lane V/C Ratio	0.772	0.213	0.054	-	-	0.056	-	-	1.248
HCM Control Delay (s)	189	24	9.7	0	-	9.5	0	-	282.3
HCM Lane LOS	F	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	3.2	0.8	0.2	-	-	0.2	-	-	7.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	6.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	160	0	0	378	270	298
Future Vol, veh/h	160	0	0	378	270	298
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	5	4	2
Mvmt Flow	165	0	0	390	278	307

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	360	83
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	195	-
Critical Hdwy	-	-	-	-	6.88	6.94
Critical Hdwy Stg 1	-	-	-	-	5.88	-
Critical Hdwy Stg 2	-	-	-	-	5.88	-
Follow-up Hdwy	-	-	-	-	3.54	3.32
Pot Cap-1 Maneuver	-	0	0	-	607	960
Stage 1	-	0	0	-	841	-
Stage 2	-	0	0	-	813	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	607	960
Mov Cap-2 Maneuver	-	-	-	-	607	-
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	813	-

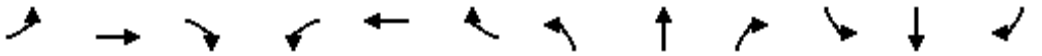
Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	607	960	-	-
HCM Lane V/C Ratio	0.459	0.32	-	-
HCM Control Delay (s)	15.9	10.5	-	-
HCM Lane LOS	C	B	-	-
HCM 95th %tile Q(veh)	2.4	1.4	-	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	410	61	44	232	36	21
Future Volume (veh/h)	410	61	44	232	36	21
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1796	1722	1678	1767	1278	1248
Adj Flow Rate, veh/h	461	69	49	261	40	24
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	12	15	9	42	44
Cap, veh/h	1355	1101	615	1332	93	80
Arrive On Green	0.75	0.75	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1796	1459	784	1767	1217	1058
Grp Volume(v), veh/h	461	69	49	261	40	24
Grp Sat Flow(s),veh/h/ln	1796	1459	784	1767	1217	1058
Q Serve(g_s), s	6.8	1.0	1.8	3.4	2.5	1.7
Cycle Q Clear(g_c), s	6.8	1.0	8.5	3.4	2.5	1.7
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1355	1101	615	1332	93	80
V/C Ratio(X)	0.34	0.06	0.08	0.20	0.43	0.30
Avail Cap(c_a), veh/h	1355	1101	615	1332	535	465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.2	2.5	4.6	2.8	35.1	34.7
Incr Delay (d2), s/veh	0.7	0.1	0.3	0.3	3.2	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.3	0.3	0.4	1.1	1.5	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.9	2.6	4.9	3.1	38.3	36.8
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	530			310	64	
Approach Delay, s/veh	3.7			3.4	37.7	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		12.6		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		8.8		4.5		10.5
Green Ext Time (p_c), s		3.0		0.2		1.8

Intersection Summary	
HCM 6th Ctrl Delay	6.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	662	218	38	283	27	200	137	30	43	183	37
Future Volume (veh/h)	23	662	218	38	283	27	200	137	30	43	183	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1737	1796	1796	1411	1693	1693	1767	1678	1678	1767	1826	1826
Adj Flow Rate, veh/h	26	761	251	44	325	31	230	157	34	49	210	43
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	11	7	7	33	14	14	9	15	15	9	5	5
Cap, veh/h	555	801	264	95	942	90	216	355	77	253	390	80
Arrive On Green	0.62	0.62	0.62	0.62	0.62	0.62	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	952	1293	426	420	1521	145	1064	1336	289	1126	1471	301
Grp Volume(v), veh/h	26	0	1012	44	0	356	230	0	191	49	0	253
Grp Sat Flow(s),veh/h/ln	952	0	1719	420	0	1666	1064	0	1626	1126	0	1772
Q Serve(g_s), s	1.5	0.0	61.5	8.5	0.0	11.7	16.2	0.0	11.1	4.3	0.0	13.8
Cycle Q Clear(g_c), s	13.2	0.0	61.5	70.0	0.0	11.7	30.0	0.0	11.1	15.3	0.0	13.8
Prop In Lane	1.00		0.25	1.00		0.09	1.00		0.18	1.00		0.17
Lane Grp Cap(c), veh/h	555	0	1065	95	0	1032	216	0	432	253	0	470
V/C Ratio(X)	0.05	0.00	0.95	0.46	0.00	0.34	1.06	0.00	0.44	0.19	0.00	0.54
Avail Cap(c_a), veh/h	555	0	1065	95	0	1032	216	0	432	253	0	470
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	0.0	19.9	53.5	0.0	10.4	50.8	0.0	34.5	40.9	0.0	35.6
Incr Delay (d2), s/veh	0.0	0.0	16.9	3.5	0.0	0.2	79.4	0.0	0.7	0.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	0.0	33.3	2.3	0.0	6.7	16.7	0.0	7.7	2.1	0.0	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	0.0	36.8	56.9	0.0	10.6	130.2	0.0	35.3	41.3	0.0	36.8
LnGrp LOS	B	A	D	E	A	B	F	A	D	D	A	D
Approach Vol, veh/h		1038			400			421			302	
Approach Delay, s/veh		36.2			15.7			87.1			37.5	
Approach LOS		D			B			F			D	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		77.0		36.0		77.0		36.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		63.5		32.0		72.0		17.3				
Green Ext Time (p_c), s		3.7		0.0		0.0		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			42.5									
HCM 6th LOS			D									

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱		↰	↱			↕	
Traffic Vol, veh/h	15	788	17	11	363	24	8	0	5	41	1	44
Future Vol, veh/h	15	788	17	11	363	24	8	0	5	41	1	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	6	10	20	14	14	0	0	50	0	0	0
Mvmt Flow	16	838	18	12	386	26	9	0	5	44	1	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	412	0	0	856	0	0	1326	1315	847	1305	1311	399
Stage 1	-	-	-	-	-	-	879	879	-	423	423	-
Stage 2	-	-	-	-	-	-	447	436	-	882	888	-
Critical Hdwy	4.1	-	-	4.3	-	-	7.1	6.5	6.7	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.38	-	-	3.5	4	3.75	3.5	4	3.3
Pot Cap-1 Maneuver	1158	-	-	713	-	-	134	159	299	138	160	655
Stage 1	-	-	-	-	-	-	345	368	-	613	591	-
Stage 2	-	-	-	-	-	-	595	583	-	344	365	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1158	-	-	713	-	-	120	152	299	131	153	655
Mov Cap-2 Maneuver	-	-	-	-	-	-	120	152	-	131	153	-
Stage 1	-	-	-	-	-	-	336	358	-	597	581	-
Stage 2	-	-	-	-	-	-	542	573	-	329	356	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.3	29.6	32.1
HCM LOS			D	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	120	299	1158	-	-	713	-	-	222
HCM Lane V/C Ratio	0.071	0.018	0.014	-	-	0.016	-	-	0.412
HCM Control Delay (s)	37.3	17.3	8.2	0	-	10.1	-	-	32.1
HCM Lane LOS	E	C	A	A	-	B	-	-	D
HCM 95th %tile Q(veh)	0.2	0.1	0	-	-	0.1	-	-	1.9

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	49	0	0	56	121	14
Future Vol, veh/h	49	0	0	56	121	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	14	0	0	9	9	4
Mvmt Flow	53	0	0	61	132	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	84	27
Stage 1	-	-	-	-	53	-
Stage 2	-	-	-	-	31	-
Critical Hdwy	-	-	-	-	6.98	6.98
Critical Hdwy Stg 1	-	-	-	-	5.98	-
Critical Hdwy Stg 2	-	-	-	-	5.98	-
Follow-up Hdwy	-	-	-	-	3.59	3.34
Pot Cap-1 Maneuver	-	0	0	-	888	1036
Stage 1	-	0	0	-	943	-
Stage 2	-	0	0	-	967	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	888	1036
Mov Cap-2 Maneuver	-	-	-	-	888	-
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	967	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	888	1036	-	-
HCM Lane V/C Ratio	0.148	0.015	-	-
HCM Control Delay (s)	9.8	8.5	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.5	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	772	62	109	377	21	42
Future Vol, veh/h	772	62	109	377	21	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	6	14	5	14
Mvmt Flow	839	67	118	410	23	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	839	0	1485	839
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	646	-
Critical Hdwy	-	-	4.16	-	6.45	6.34
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.254	-	3.545	3.426
Pot Cap-1 Maneuver	-	0	779	-	135	348
Stage 1	-	0	-	-	419	-
Stage 2	-	0	-	-	516	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	779	-	109	348
Mov Cap-2 Maneuver	-	-	-	-	240	-
Stage 1	-	-	-	-	419	-
Stage 2	-	-	-	-	415	-

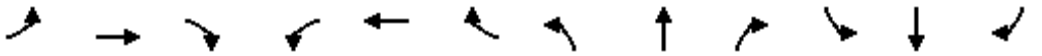
Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	18.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	240	348	-	779	-
HCM Lane V/C Ratio	0.095	0.131	-	0.152	-
HCM Control Delay (s)	21.6	16.9	-	10.4	-
HCM Lane LOS	C	C	-	B	-
HCM 95th %tile Q(veh)	0.3	0.4	-	0.5	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	342	13	26	529	117	125
Future Volume (veh/h)	342	13	26	529	117	125
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1159	1559	1870	1885	1900
Adj Flow Rate, veh/h	372	14	28	575	127	136
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	50	23	2	1	0
Cap, veh/h	1362	710	631	1351	207	185
Arrive On Green	0.72	0.72	0.72	0.72	0.12	0.12
Sat Flow, veh/h	1885	982	831	1870	1795	1610
Grp Volume(v), veh/h	372	14	28	575	127	136
Grp Sat Flow(s),veh/h/ln	1885	982	831	1870	1795	1610
Q Serve(g_s), s	5.7	0.3	1.0	10.2	5.6	6.8
Cycle Q Clear(g_c), s	5.7	0.3	6.7	10.2	5.6	6.8
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1362	710	631	1351	207	185
V/C Ratio(X)	0.27	0.02	0.04	0.43	0.61	0.73
Avail Cap(c_a), veh/h	1362	710	631	1351	757	679
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.0	3.2	5.1	4.6	35.0	35.5
Incr Delay (d2), s/veh	0.5	0.1	0.1	1.0	3.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	0.1	0.3	4.6	4.6	5.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.5	3.3	5.3	5.6	38.0	41.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	386			603	263	
Approach Delay, s/veh	4.4			5.6	39.6	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		16.1		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		7.7		8.8		12.2
Green Ext Time (p_c), s		2.1		0.8		3.8

Intersection Summary		
HCM 6th Ctrl Delay	12.4	
HCM 6th LOS	B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	499	246	41	812	41	245	107	44	47	184	36
Future Volume (veh/h)	42	499	246	41	812	41	245	107	44	47	184	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1870	1870	1737	1870	1870	1811	1841	1841	1870	1737	1737
Adj Flow Rate, veh/h	44	520	256	43	846	43	255	111	46	49	192	38
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	2	2	11	2	2	6	4	4	2	11	11
Cap, veh/h	163	657	323	208	980	50	299	383	159	372	437	86
Arrive On Green	0.56	0.56	0.56	0.56	0.56	0.56	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	610	1183	582	646	1765	90	1114	1236	512	1230	1408	279
Grp Volume(v), veh/h	44	0	776	43	0	889	255	0	157	49	0	230
Grp Sat Flow(s),veh/h/ln	610	0	1766	646	0	1854	1114	0	1749	1230	0	1687
Q Serve(g_s), s	6.4	0.0	33.7	5.5	0.0	39.6	19.5	0.0	6.6	3.0	0.0	10.5
Cycle Q Clear(g_c), s	46.0	0.0	33.7	39.2	0.0	39.6	30.0	0.0	6.6	9.6	0.0	10.5
Prop In Lane	1.00		0.33	1.00		0.05	1.00		0.29	1.00		0.17
Lane Grp Cap(c), veh/h	163	0	981	208	0	1030	299	0	542	372	0	523
V/C Ratio(X)	0.27	0.00	0.79	0.21	0.00	0.86	0.85	0.00	0.29	0.13	0.00	0.44
Avail Cap(c_a), veh/h	266	0	1278	317	0	1342	299	0	542	372	0	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.0	0.0	17.1	32.6	0.0	18.4	39.8	0.0	25.3	28.9	0.0	26.6
Incr Delay (d2), s/veh	0.9	0.0	2.6	0.5	0.0	4.8	20.6	0.0	0.3	0.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	0.0	17.7	1.5	0.0	21.7	12.2	0.0	4.7	1.6	0.0	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.9	0.0	19.7	33.1	0.0	23.2	60.4	0.0	25.6	29.1	0.0	27.2
LnGrp LOS	D	A	B	C	A	C	E	A	C	C	A	C
Approach Vol, veh/h		820			932			412			279	
Approach Delay, s/veh		20.7			23.6			47.1			27.5	
Approach LOS		C			C			D			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.7		36.0		60.7		36.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		48.0		32.0		41.6		12.5				
Green Ext Time (p_c), s		5.7		0.0		7.2		1.2				

Intersection Summary												
HCM 6th Ctrl Delay			27.1									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	16.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	640	35	42	907	56	39	7	37	47	6	29
Future Vol, veh/h	27	640	35	42	907	56	39	7	37	47	6	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	2	0	4	2	3	0	0	0	4	0	0
Mvmt Flow	28	653	36	43	926	57	40	7	38	48	6	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	983	0	0	689	0	0	1786	1796	671	1791	1786	955
Stage 1	-	-	-	-	-	-	727	727	-	1041	1041	-
Stage 2	-	-	-	-	-	-	1059	1069	-	750	745	-
Critical Hdwy	4.1	-	-	4.14	-	-	7.1	6.5	6.2	7.14	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.2	-	-	2.236	-	-	3.5	4	3.3	3.536	4	3.3
Pot Cap-1 Maneuver	711	-	-	896	-	-	64	81	460	62	82	316
Stage 1	-	-	-	-	-	-	419	432	-	275	310	-
Stage 2	-	-	-	-	-	-	274	300	-	400	424	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	711	-	-	896	-	-	50	72	460	48	73	316
Mov Cap-2 Maneuver	-	-	-	-	-	-	50	72	-	48	73	-
Stage 1	-	-	-	-	-	-	392	404	-	257	295	-
Stage 2	-	-	-	-	-	-	232	286	-	338	397	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.4	105.1	264.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	50	248	711	-	-	896	-	-	71
HCM Lane V/C Ratio	0.796	0.181	0.039	-	-	0.048	-	-	1.178
HCM Control Delay (s)	198.1	22.7	10.3	0	-	9.2	-	-	264.7
HCM Lane LOS	F	C	B	A	-	A	-	-	F
HCM 95th %tile Q(veh)	3.3	0.6	0.1	-	-	0.1	-	-	6.4

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	29	0	0	47	102	7
Future Vol, veh/h	29	0	0	47	102	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	0	4	8	3
Mvmt Flow	30	0	0	49	106	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	55	15
Stage 1	-	-	-	-	30	-
Stage 2	-	-	-	-	25	-
Critical Hdwy	-	-	-	-	6.96	6.96
Critical Hdwy Stg 1	-	-	-	-	5.96	-
Critical Hdwy Stg 2	-	-	-	-	5.96	-
Follow-up Hdwy	-	-	-	-	3.58	3.33
Pot Cap-1 Maneuver	-	0	0	-	929	1057
Stage 1	-	0	0	-	971	-
Stage 2	-	0	0	-	977	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	929	1057
Mov Cap-2 Maneuver	-	-	-	-	929	-
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	977	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	929	1057	-	-
HCM Lane V/C Ratio	0.114	0.007	-	-
HCM Control Delay (s)	9.4	8.4	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.4	0	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	664	60	105	927	78	137
Future Vol, veh/h	664	60	105	927	78	137
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	3	7	2	3	7
Mvmt Flow	722	65	114	1008	85	149

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	722	0	1958	722
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	1236	-
Critical Hdwy	-	-	4.17	-	6.43	6.27
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.263	-	3.527	3.363
Pot Cap-1 Maneuver	-	0	858	-	~ 69	419
Stage 1	-	0	-	-	479	-
Stage 2	-	0	-	-	273	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	858	-	~ 48	419
Mov Cap-2 Maneuver	-	-	-	-	142	-
Stage 1	-	-	-	-	479	-
Stage 2	-	-	-	-	191	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	34.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	142	419	-	858	-
HCM Lane V/C Ratio	0.597	0.355	-	0.133	-
HCM Control Delay (s)	62.3	18.3	-	9.8	-
HCM Lane LOS	F	C	-	A	-
HCM 95th %tile Q(veh)	3.1	1.6	-	0.5	-

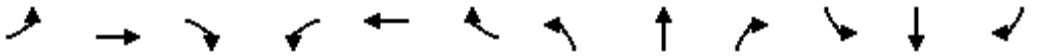
Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	412	14	9	413	20	24
Future Volume (veh/h)	412	14	9	413	20	24
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1648	1900	1885	1633	1900
Adj Flow Rate, veh/h	429	15	9	430	21	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	17	0	1	18	0
Cap, veh/h	1440	1067	758	1440	100	104
Arrive On Green	0.76	0.76	0.76	0.76	0.06	0.06
Sat Flow, veh/h	1885	1397	961	1885	1555	1610
Grp Volume(v), veh/h	429	15	9	430	21	25
Grp Sat Flow(s),veh/h/ln	1885	1397	961	1885	1555	1610
Q Serve(g_s), s	5.5	0.2	0.2	5.5	1.0	1.2
Cycle Q Clear(g_c), s	5.5	0.2	5.7	5.5	1.0	1.2
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1440	1067	758	1440	100	104
V/C Ratio(X)	0.30	0.01	0.01	0.30	0.21	0.24
Avail Cap(c_a), veh/h	1440	1067	758	1440	693	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	2.8	2.2	3.7	2.8	34.8	34.9
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.5	1.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.7	0.0	0.1	1.7	0.7	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.4	2.2	3.7	3.4	35.9	36.1
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h	444			439	46	
Approach Delay, s/veh	3.3			3.4	36.0	
Approach LOS	A			A	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		67.0		11.6		67.0
Change Period (Y+Rc), s		7.0		6.5		7.0
Max Green Setting (Gmax), s		60.0		35.0		60.0
Max Q Clear Time (g_c+I1), s		7.5		3.2		7.7
Green Ext Time (p_c), s		2.5		0.1		2.5

Intersection Summary	
HCM 6th Ctrl Delay	5.0
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	590	227	39	630	84	219	222	49	51	153	48
Future Volume (veh/h)	52	590	227	39	630	84	219	222	49	51	153	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1885	1885	1811	1885	1885	1796	1870	1870	1900	1841	1841
Adj Flow Rate, veh/h	55	621	239	41	663	88	231	234	52	54	161	51
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	1	1	6	1	1	7	2	2	0	4	4
Cap, veh/h	245	714	275	161	897	119	322	465	103	281	420	133
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	700	1296	499	622	1630	216	1123	1482	329	1110	1340	424
Grp Volume(v), veh/h	55	0	860	41	0	751	231	0	286	54	0	212
Grp Sat Flow(s),veh/h/ln	700	0	1795	622	0	1846	1123	0	1811	1110	0	1764
Q Serve(g_s), s	6.2	0.0	39.5	5.8	0.0	29.5	19.3	0.0	12.3	4.0	0.0	9.0
Cycle Q Clear(g_c), s	35.7	0.0	39.5	45.4	0.0	29.5	28.3	0.0	12.3	16.3	0.0	9.0
Prop In Lane	1.00		0.28	1.00		0.12	1.00		0.18	1.00		0.24
Lane Grp Cap(c), veh/h	245	0	988	161	0	1016	322	0	568	281	0	553
V/C Ratio(X)	0.22	0.00	0.87	0.26	0.00	0.74	0.72	0.00	0.50	0.19	0.00	0.38
Avail Cap(c_a), veh/h	372	0	1314	273	0	1351	322	0	568	281	0	553
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.8	0.0	18.6	38.1	0.0	16.3	36.6	0.0	26.8	33.4	0.0	25.6
Incr Delay (d2), s/veh	0.5	0.0	5.1	0.8	0.0	1.5	7.4	0.0	0.7	0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.8	0.0	21.2	1.6	0.0	16.1	9.6	0.0	8.8	1.9	0.0	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.3	0.0	23.7	39.0	0.0	17.8	44.1	0.0	27.5	33.7	0.0	26.0
LnGrp LOS	C	A	C	D	A	B	D	A	C	C	A	C
Approach Vol, veh/h		915			792			517			266	
Approach Delay, s/veh		24.1			18.9			34.9			27.6	
Approach LOS		C			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		59.6		36.0		59.6		36.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		70.0		30.0		70.0		30.0				
Max Q Clear Time (g_c+I1), s		41.5		30.3		47.4		18.3				
Green Ext Time (p_c), s		7.1		0.0		5.3		1.0				

Intersection Summary												
HCM 6th Ctrl Delay			25.1									
HCM 6th LOS			C									

Intersection	
Int Delay, s/veh	18

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	699	42	44	703	44	37	7	41	48	3	37
Future Vol, veh/h	41	699	42	44	703	44	37	7	41	48	3	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	0	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	5	1	0	0	2	5	0	0	0	8	0	0
Mvmt Flow	44	744	45	47	748	47	39	7	44	51	3	39

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	795	0	0	789	0	0	1742	1744	767	1746	1743	772
Stage 1	-	-	-	-	-	-	855	855	-	866	866	-
Stage 2	-	-	-	-	-	-	887	889	-	880	877	-
Critical Hdwy	4.15	-	-	4.1	-	-	7.1	6.5	6.2	7.18	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.18	5.5	-
Follow-up Hdwy	2.245	-	-	2.2	-	-	3.5	4	3.3	3.572	4	3.3
Pot Cap-1 Maneuver	813	-	-	840	-	-	69	87	405	65	88	403
Stage 1	-	-	-	-	-	-	356	378	-	340	373	-
Stage 2	-	-	-	-	-	-	341	364	-	334	369	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	813	-	-	840	-	-	53	74	405	~ 48	75	403
Mov Cap-2 Maneuver	-	-	-	-	-	-	53	74	-	~ 48	75	-
Stage 1	-	-	-	-	-	-	321	341	-	307	352	-
Stage 2	-	-	-	-	-	-	288	344	-	263	333	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.5	90.1	260.4
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	53	245	813	-	-	840	-	-	78
HCM Lane V/C Ratio	0.743	0.208	0.054	-	-	0.056	-	-	1.2
HCM Control Delay (s)	176.4	23.5	9.7	0	-	9.5	-	-	260.4
HCM Lane LOS	F	C	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	3.1	0.8	0.2	-	-	0.2	-	-	7

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	6.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	160	0	0	378	270	298
Future Vol, veh/h	160	0	0	378	270	298
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	7	0	0	5	4	2
Mvmt Flow	165	0	0	390	278	307

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	360	83
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	195	-
Critical Hdwy	-	-	-	-	6.88	6.94
Critical Hdwy Stg 1	-	-	-	-	5.88	-
Critical Hdwy Stg 2	-	-	-	-	5.88	-
Follow-up Hdwy	-	-	-	-	3.54	3.32
Pot Cap-1 Maneuver	-	0	0	-	607	960
Stage 1	-	0	0	-	841	-
Stage 2	-	0	0	-	813	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	607	960
Mov Cap-2 Maneuver	-	-	-	-	607	-
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	813	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	607	960	-	-
HCM Lane V/C Ratio	0.459	0.32	-	-
HCM Control Delay (s)	15.9	10.5	-	-
HCM Lane LOS	C	B	-	-
HCM 95th %tile Q(veh)	2.4	1.4	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	723	65	115	727	64	115
Future Vol, veh/h	723	65	115	727	64	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	5	8	2	3	9
Mvmt Flow	786	71	125	790	70	125

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	786	0	1826	786
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	1040	-
Critical Hdwy	-	-	4.18	-	6.43	6.29
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.272	-	3.527	3.381
Pot Cap-1 Maneuver	-	0	807	-	84	381
Stage 1	-	0	-	-	447	-
Stage 2	-	0	-	-	339	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	807	-	~ 61	381
Mov Cap-2 Maneuver	-	-	-	-	169	-
Stage 1	-	-	-	-	447	-
Stage 2	-	-	-	-	245	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	26.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	169	381	-	807	-
HCM Lane V/C Ratio	0.412	0.328	-	0.155	-
HCM Control Delay (s)	40.4	19	-	10.3	-
HCM Lane LOS	E	C	-	B	-
HCM 95th %tile Q(veh)	1.8	1.4	-	0.5	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	863	452	20	85
Demand Flow Rate, veh/h	915	514	26	85
Vehicles Circulating, veh/h	105	34	915	509
Vehicles Exiting, veh/h	489	906	105	39
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	14.9	6.9	9.3	5.4
Approach LOS	B	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	915	514	26	85
Cap Entry Lane, veh/h	1240	1333	543	821
Entry HV Adj Factor	0.943	0.879	0.769	1.000
Flow Entry, veh/h	863	452	20	85
Cap Entry, veh/h	1170	1171	417	821
V/C Ratio	0.738	0.386	0.048	0.104
Control Delay, s/veh	14.9	6.9	9.3	5.4
LOS	B	A	A	A
95th %tile Queue, veh	7	2	0	0

Intersection	
Intersection Delay, s/veh	14.0
Intersection LOS	B

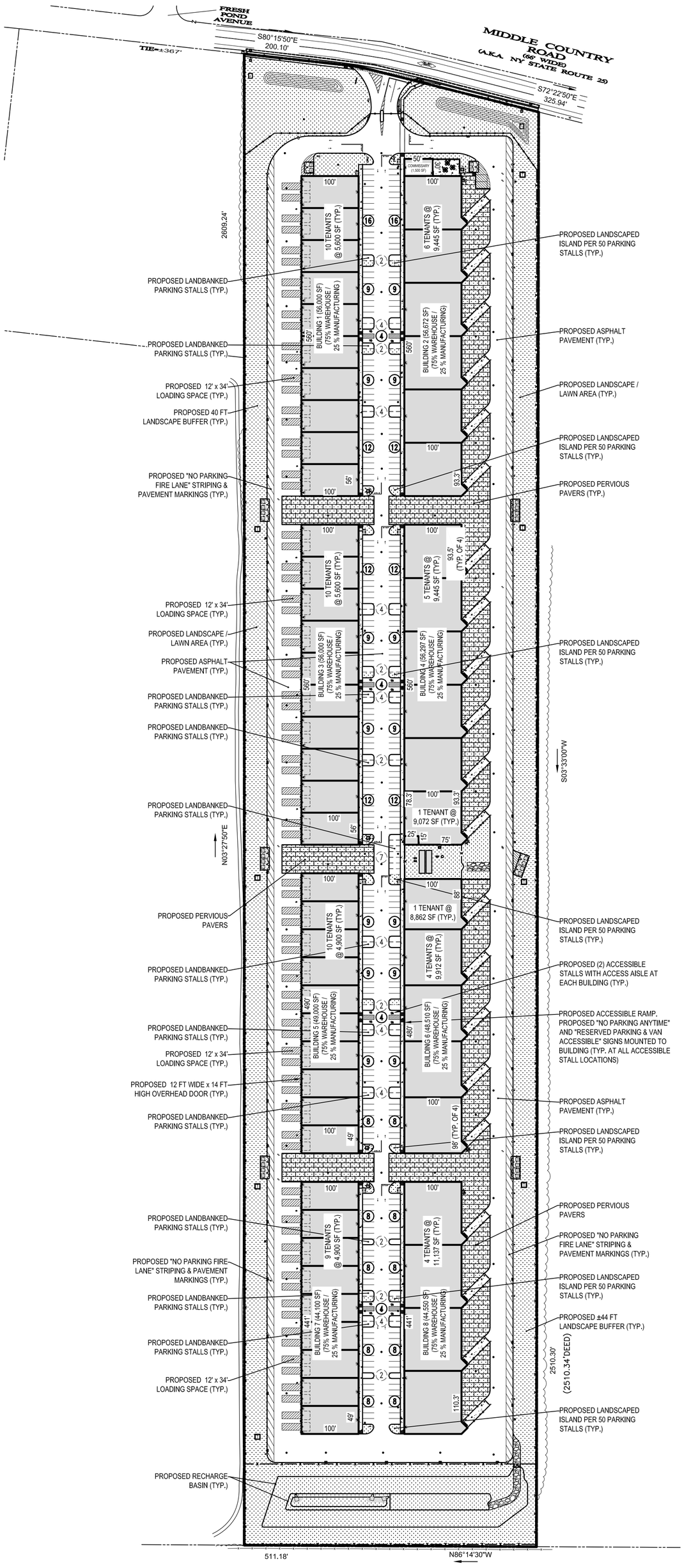
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	684	975	116	68
Demand Flow Rate, veh/h	696	1001	119	69
Vehicles Circulating, veh/h	102	109	689	1027
Vehicles Exiting, veh/h	994	699	109	83
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	9.4	18.4	7.4	9.5
Approach LOS	A	C	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	696	1001	119	69
Cap Entry Lane, veh/h	1244	1235	683	484
Entry HV Adj Factor	0.982	0.974	0.975	0.986
Flow Entry, veh/h	684	975	116	68
Cap Entry, veh/h	1221	1203	666	477
V/C Ratio	0.560	0.811	0.174	0.143
Control Delay, s/veh	9.4	18.4	7.4	9.5
LOS	A	C	A	A
95th %tile Queue, veh	4	10	1	0

Intersection	
Intersection Delay, s/veh	11.9
Intersection LOS	B

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	801	809	121	78
Demand Flow Rate, veh/h	810	829	124	80
Vehicles Circulating, veh/h	115	126	795	863
Vehicles Exiting, veh/h	828	793	130	92
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	11.8	12.7	8.5	8.2
Approach LOS	B	B	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	810	829	124	80
Cap Entry Lane, veh/h	1227	1213	613	572
Entry HV Adj Factor	0.989	0.975	0.976	0.975
Flow Entry, veh/h	801	809	121	78
Cap Entry, veh/h	1213	1184	599	558
V/C Ratio	0.660	0.683	0.202	0.140
Control Delay, s/veh	11.8	12.7	8.5	8.2
LOS	B	B	A	A
95th %tile Queue, veh	5	6	1	0



GRAPHIC SCALE

120 0 60 120 240 480

(IN FEET)

1 inch = 120 ft.

LEGEND

SCALE OF SYMBOLS = 1" = 120'

EXISTING	ITEM	PROPOSED
	PROPERTY LINE	
	BUILDING	
	CONCRETE CURB	
	CONCRETE SIDEWALK	
	LANDSCAPE AREA	
	PERVIOUS PAVERS	
	DUMPSTER ENCLOSURE	
	12' x 34' LOADING SPACE	
	LOADING DOCK RETAINING WALLS	
	PAVED PARKING COUNT	9
	LANDBANKED PARKING COUNT	2
	OVERHEAD DOOR	
	DOOR	
x x	FENCE	x x x x
	BIKE RACK	
	HYDRANT	

BULK ZONING TABLE

ZONING DISTRICT: INDUSTRIAL C

ITEM	SECTION	PERMITTED/REQUIRED	PROPOSED
PARKING STANDARDS	§ 301-124.B.2	PLANTED BERMS SHALL BE USED TO SCREEN AUTOMOBILES FROM PUBLIC R.O.W.	LANDSCAPE & PLANTED BERMS PROVIDED
PARKING STANDARDS	§ 301-124.B.3	OFF-STREET PARKING PROHIBITED IN FRONT YARD, WITHIN 20 FT OF SIDE YARD, AND 10 FT OF REAR YARD	NO PARKING IN FRONT YARD PROPOSED 20 FT OR GREATER FROM PROPOSED PARKING TO SIDE YARD PROPERTY LINE NO PARKING IN REAR PROPOSED
SUPPLEMENTARY GUIDELINES	§ 301-124.B	(4) IN ORDER TO SOFTEN THE APPEARANCE OF PARKING LOTS, LARGE AREAS OF SURFACE PARKING SHOULD BE BROKEN UP BY ROWS OF LANDSCAPING NO LESS THAN 10 FEET IN WIDTH, IN ORDER TO CREATE PARKING FIELDS OF NO MORE THAN 50 SPACES EACH, LANDSCAPING SHALL INCLUDE GROUND COVER, ORNAMENTAL GRASSES, OR LOW SHRUBS. THIS LANDSCAPING REQUIREMENT IS IN ADDITION TO THE TWENTY-PERCENT PARCEL-WIDE LANDSCAPING MENTIONED ABOVE.	COMPLIES PARKING LOT ISLANDS OF >/= 10' IN WIDTH AND IS LANDSCAPED WITH GROUNDCOVER (JHBC) AND DECIDUOUS TREES (GTIS), (AR)
MAXIMUM IMPERVIOUS SURFACE	**§ 301-ATTACHMENT 3**	**60% ±1,317,884 SF x 0.60 = 790,730 SF**	**873,950 SF / 1,317,884 SF = 0.6631 66.31% [V]**

[V] - VARIANCE REQUIRED

PARKING CALCULATIONS

ITEM	SECTION	PERMITTED/REQUIRED	PROPOSED
MINIMUM STALL SIZE	§ 301-231.E.2	10 FT x 20 FT	10' x 20' PAVED & LANDBANKED PARKING STALLS (8' x 20' ACCESSIBLE STALLS)
MINIMUM AISLE WIDTH	§ 301-231.E.1	24' (TWO WAY) WITH 90° PARKING 18' (ONE WAY) WITH 60° PARKING 12' (ONE WAY) WITH 45° PARKING	26' (TWO-WAY MIN.)
NUMBER OF LOADING SPACES REQUIRED	§ 301-232.A	FLOOR AREAS PER BUILDING 15,000 TO 25,000 = 1 SPACES 25,001 TO 40,000 = 2 SPACES 40,001 TO 100,000 = 3 SPACES +60,000 SF = 1 ADDITIONAL SPACE 3 SPACES REQUIRED PER BUILDING x 8 BUILDINGS = 24 SPACES REQUIRED	101 SPACES PROVIDED
MINIMUM LOADING SPACE SIZE	§ 301-232.B	12 FT WIDE x 14 FT LONG	(78) 12 FT WIDE x 34 FT LONG (2) 12 FT WIDE x 20 FT LONG (21) 13 FT WIDE x 55 FT LONG TOTAL PROVIDED = 101 SPACES
MINIMUM NUMBER OF PARKING STALLS REQUIRED	§ 301 ATTACHMENT 1	<u>BUILDINGS 1 & 3 (56,000 SF)</u> *PARKING PER BUILDING 25% MANUFACTURING SPACE (14,000 SF) 75% WAREHOUSE SPACE (42,000 SF) <u>* MANUFACTURING ESTABLISHMENT (14,000 SF / BUILDING)</u> 1 STALL PER 400 SF OF GFA 14,000 SF / 400 SF = 35 STALLS <u>* WAREHOUSE (42,000 SF / BUILDING)</u> 1 STALL PER 1,000 SF UP TO 5,000 SF + 1 STALL PER 10,000 SF 5,000 SF x 1 STALL PER 1,000 SF = 5 STALLS 37,000 SF x 1 STALL / 10,000 SF = 3.7 STALLS <u>TOTAL PARKING FOR BUILDINGS 1 & 3</u> 2 BUILDINGS x (35 + 5 + 3.7) STALLS = 87.4 STALLS	381 STALLS (INCLUDES 16 ACCESSIBLE STALLS) (INCLUDES 55 LANDBANKED PARKING STALLS)
MINIMUM NUMBER OF PARKING STALLS REQUIRED	§ 301 ATTACHMENT 1	<u>BUILDING 2 (56,672 SF)</u> *PARKING PER BUILDING 25% MANUFACTURING SPACE (14,168 SF) 75% WAREHOUSE SPACE (42,504 SF) <u>*MANUFACTURING ESTABLISHMENT (14,168 SF)</u> 1 STALL PER 400 SF OF GFA 14,168 SF / 400 SF = 35.4 STALLS <u>* WAREHOUSE (42,504 SF)</u> 1 STALL PER 1,000 SF UP TO 5,000 SF + 1 STALL PER 10,000 SF 5,000 SF x 1 STALL PER 1,000 SF = 5 STALLS 37,504 SF x 1 STALL / 10,000 SF = 3.8 STALLS TOTAL PARKING FOR BUILDING 2 = 44.2 STALLS	
MINIMUM NUMBER OF PARKING STALLS REQUIRED	§ 301 ATTACHMENT 1	<u>BUILDING 4 (56,297 SF)</u> *PARKING PER BUILDING 25% MANUFACTURING SPACE (14,074 SF) 75% WAREHOUSE SPACE (42,223 SF) <u>*MANUFACTURING ESTABLISHMENT (14,074 SF)</u> 1 STALL PER 400 SF OF GFA 14,074 SF / 400 SF = 35.2 STALLS <u>* WAREHOUSE (42,223 SF)</u> 1 STALL PER 1,000 SF UP TO 5,000 SF + 1 STALL PER 10,000 SF 5,000 SF x 1 STALL PER 1,000 SF = 5 STALLS 37,223 SF x 1 STALL / 10,000 SF = 3.7 STALLS TOTAL PARKING FOR BUILDING 4 = 43.9 STALLS	
MINIMUM NUMBER OF PARKING STALLS REQUIRED	§ 301 ATTACHMENT 1	<u>BUILDING 5 (49,000 SF)</u> *PARKING PER BUILDING 25% MANUFACTURING SPACE (12,250 SF) 75% WAREHOUSE SPACE (36,750 SF) <u>*MANUFACTURING ESTABLISHMENT (12,250 SF)</u> 1 STALL PER 400 SF OF GFA 12,250 SF / 400 SF = 30.6 STALLS <u>* WAREHOUSE (36,750 SF)</u> 1 STALL PER 1,000 SF UP TO 5,000 SF + 1 STALL PER 10,000 SF 5,000 SF x 1 STALL PER 1,000 SF = 5 STALLS 31,750 SF x 1 STALL / 10,000 SF = 3.2 STALLS TOTAL PARKING FOR BUILDING 5 = 38.8 STALLS	
MINIMUM NUMBER OF PARKING STALLS REQUIRED	§ 301 ATTACHMENT 1	<u>BUILDING 6 (48,510 SF)</u> *PARKING PER BUILDING 25% MANUFACTURING SPACE (12,128 SF) 75% WAREHOUSE SPACE (36,382 SF) <u>*MANUFACTURING ESTABLISHMENT (12,128 SF)</u> 1 STALL PER 400 SF OF GFA 12,128 SF / 400 SF = 30.3 STALLS <u>*WAREHOUSE (36,382 SF)</u> 1 STALL PER 1,000 SF UP TO 5,000 SF + 1 STALL PER 10,000 SF 5,000 SF x 1 STALL PER 1,000 SF = 5 STALLS 31,382 SF x 1 STALL / 10,000 SF = 3.1 STALLS TOTAL PARKING FOR BUILDING 6 = 38.4 STALLS	
MINIMUM NUMBER OF PARKING STALLS REQUIRED	§ 301 ATTACHMENT 1	<u>BUILDING 7 (44,100 SF)</u> *PARKING PER BUILDING 25% MANUFACTURING SPACE (11,025 SF) 75% WAREHOUSE SPACE (33,075 SF) <u>*MANUFACTURING ESTABLISHMENT (11,025 SF)</u> 1 STALL PER 400 SF OF GFA 11,025 SF / 400 SF = 27.6 STALLS <u>*WAREHOUSE (33,075 SF)</u> 1 STALL PER 1,000 SF UP TO 5,000 SF + 1 STALL PER 10,000 SF 5,000 SF x 1 STALL PER 1,000 SF = 5 STALLS 28,075 SF x 1 STALL / 10,000 SF = 2.8 STALLS TOTAL PARKING FOR BUILDING 7 = 35.4 STALLS	
MINIMUM NUMBER OF PARKING STALLS REQUIRED	§ 301 ATTACHMENT 1	<u>BUILDING 8 (44,550 SF)</u> *PARKING PER BUILDING 25% MANUFACTURING SPACE (11,137 SF) 75% WAREHOUSE SPACE (33,413 SF) <u>*MANUFACTURING ESTABLISHMENT (11,137 SF)</u> 1 STALL PER 400 SF OF GFA 11,137 SF / 400 SF = 27.8 STALLS <u>*WAREHOUSE (33,413 SF)</u> 1 STALL PER 1,000 SF UP TO 5,000 SF + 1 STALL PER 10,000 SF 5,000 SF x 1 STALL PER 1,000 SF = 5 STALLS 28,413 SF x 1 STALL / 10,000 SF = 2.8 STALLS TOTAL PARKING FOR BUILDING 8 = 35.6 STALLS	
TOTAL NUMBER OF PARKING STALLS REQUIRED FOR LOT	§ 301 ATTACHMENT 1	87.4 + 44.2 + 43.9 +38.8 + 38.4 + 35.4 + 35.6 = 323.7 STALLS TOTAL STALLS REQUIRED = 324 STALLS	
ACCESSIBLE PARKING STALLS	§ 301-232.M.1	301 TO 400 TOTAL PARKING STALLS REQUIRED = 8 8 ACCESSIBLE PARKING STALLS	16 ACCESSIBLE STALLS

NEW YORK CITY ONE CALL CENTER 1-800-272-4480 STOP-CALL-THEN DIG Safely

No.	DATE	BY	DESCRIPTION
5	12/15/2021	LC	FEIS SUBMISSION
4	04/02/2021	LC	RESUBMISSION TO TOWN
3	06/22/2020	LC	MISCELLANEOUS COORDINATION
2	06/03/2020	LC	ISSUED FOR TOWN SUBMISSION
1	05/15/2020	LC	ISSUED FOR REVIEW

REVISIONS

ALTERATION OR ADDITION TO THIS DOCUMENT EXCEPT BY A LICENSED PROFESSIONAL ENGINEER IS A VIOLATION OF SECTION 7209, SUB-DIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.

SEAL & SIGNATURE:

NOT VALID UNTIL SEALED

JACLYN PERANTEAU, P.E.
NEW YORK STATE PROFESSIONAL ENGINEER #083937

DATE:	01/24/2020
SCALE:	1" = 120'
PROJECT No.:	19026
DRAWING BY:	LC
CHECKED BY:	YT
APPROVED BY:	JP

KEY CIVIL ENGINEERING
664 BLUE POINT ROAD, UNIT B
HOLTSVILLE, NEW YORK 11742
(631) 961-0506
www.KeyCivilEngineering.com

PROJECT NAME:

HK VENTURES, LLC INDUSTRIAL PARK

4285 MIDDLE COUNTRY ROAD
CALVERTON, NY 11933
TOWN OF RIVERHEAD, COUNTY OF SUFFOLK
DIST.: 600, SECT.: 116, BLOCK: 1, LOT: 2
ZONE: INDUSTRIAL C

DRAWING TITLE:

ALTERNATE LAND-BANKED PARKING DESIGN

DRAWING No.: ALT

PAGE No.: 1 OF 1

19026_2021.12.13_SPP5_Alternate_Land-banked Parking Design.dwg