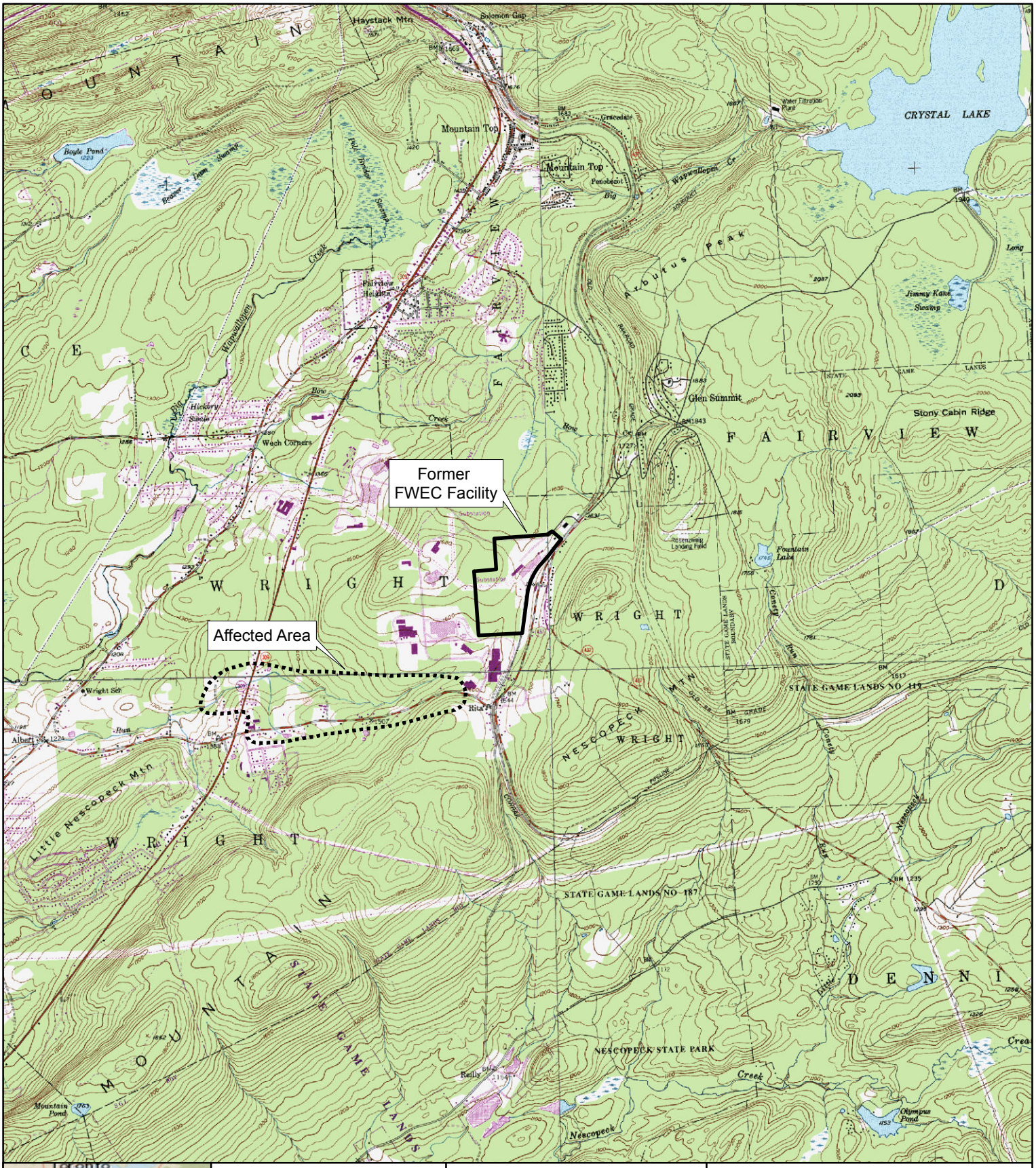
FIGURES



TETRA TECH

FIGURE 1-1

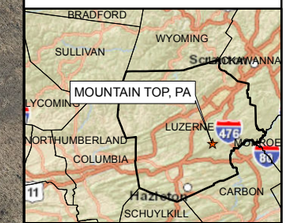
SITE LOCATION MAP

SOURCES:

USGS 7.5 Minute Topographic Quadrangle: Freeland, White Haven, Wilkes Barre East, West.

MOUNTAIN TOP, PENNSYLVANIA

Document Path: T:\GIS\Mountain Top, PA\Geospatial\MXD Versions\RI_FS\Final\Figure_1_1_Site_Location.mxd



Legend

- Affected Area
- Former FWEC Facility

0 250 500 1,000
FEET

SOURCES:

1) AERIAL PHOTOGRAPHY: PAMAP PROGRAM, PA DEPT. OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, 2008

2) AERIAL PHOTOGRAPHY: AXIS GEOSPATIAL, 2011

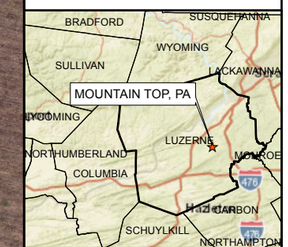
FIGURE 1-2

SITE PLAN

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

Document Path: T:\GIS\Mountain Top, PA\Geospatial\MXD Versions\RI_FS\Final\Figure_1_2_Site_Plan.mxd



FORMER FWEC FACILITY POTENTIAL SOURCES

1a) FORMER VAPOR DEGREASER AREA
1b) FORMER PCB SPILL AREA
1c) FORMER HYDROTESTING SUMP
1d) FORMER WASTE OIL PITS
1e) FORMER NORTH SOIL AREA
1f) FORMER BAGHOUSE WASTE
1g) FORMER POTENTIAL ACM WASTE
1h) FORMER WASTEWATER TREATMENT SYSTEM
1i) FORMER UNDERGROUND STORAGE TANK
1j) FORMER OPEN AREA WEST OF THE MAIN BUILDING
1k) FORMER PCB TRANSFORMERS AND FORMER TRANSFORMER AREA
1l) FORMER SHOT BLAST SANDS STORAGE AREA
1m) FORMER EXPENDED WASTE AREA
1n) FORMER FINISH PAINT BUILDING, SOLVENT BUILDING AND PAINT STORAGE BUILDING

FORMER ABOVEGROUND STORAGE TANK LOCATION
FORMER PROPANE TANKS
GROUNDWATER TREATMENT PLANT
FORMER FWEC FACILITY BOUNDARY

0 50 100 200 300 400 500
FEET

SOURCES:

AERIAL PHOTOGRAPHY:
AXIS GEOSPATIAL, 2011

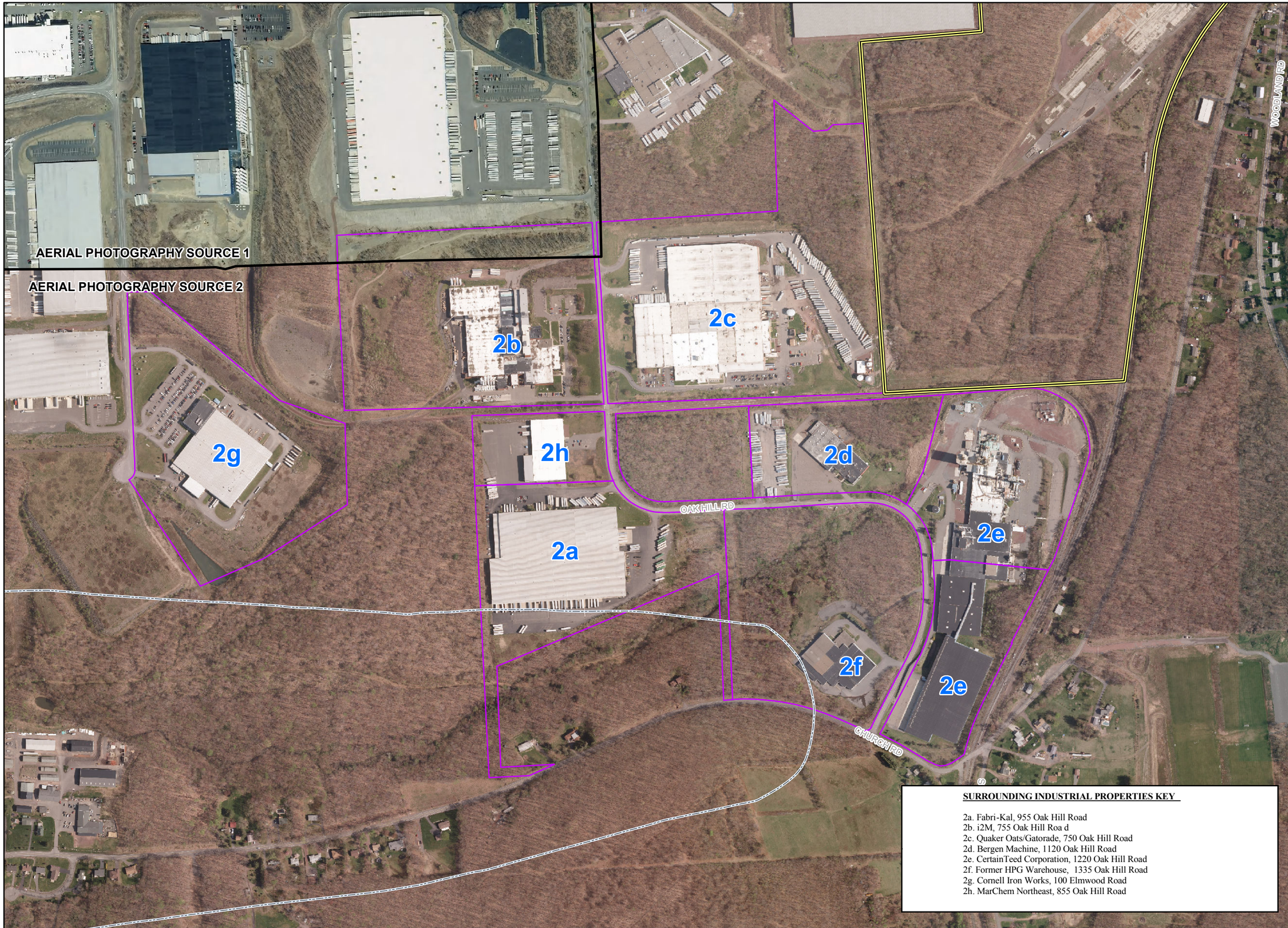
FIGURE 1-3

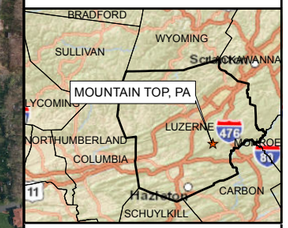
FORMER FWEC FACILITY POTENTIAL SOURCES

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

DOCUMENT PATH: T:\GIS\MOUNTAIN TOP, PA\GEOSPATIAL\MXD VERSIONS\RI_FS\2016_UPDATES\REVISED_20160727\FIGURE_1_3_FORMER_FWEC_FEATURES_20160728.MXD





Legend

- Affected Area
- Former FWEC Facility
- Surrounding Industrial Properties

0 250 500
FEET

SOURCES:

1) AERIAL PHOTOGRAPHY: PAMAP PROGRAM, PA DEPT. OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, 2008

2) AERIAL PHOTOGRAPHY: AXIS GEOSPATIAL, 2011

SURROUNDING INDUSTRIAL PROPERTIES KEY

2a. Fabri-Kal, 955 Oak Hill Road
2b. i2M, 755 Oak Hill Roa d
2c. Quaker Oats/Gatorade, 750 Oak Hill Road
2d. Bergen Machine, 1120 Oak Hill Road
2e. CertainTeed Corporation, 1220 Oak Hill Road
2f. Former HPG Warehouse, 1335 Oak Hill Road
2g. Cornell Iron Works, 100 Elmwood Road
2h. MarChem Northeast, 855 Oak Hill Road

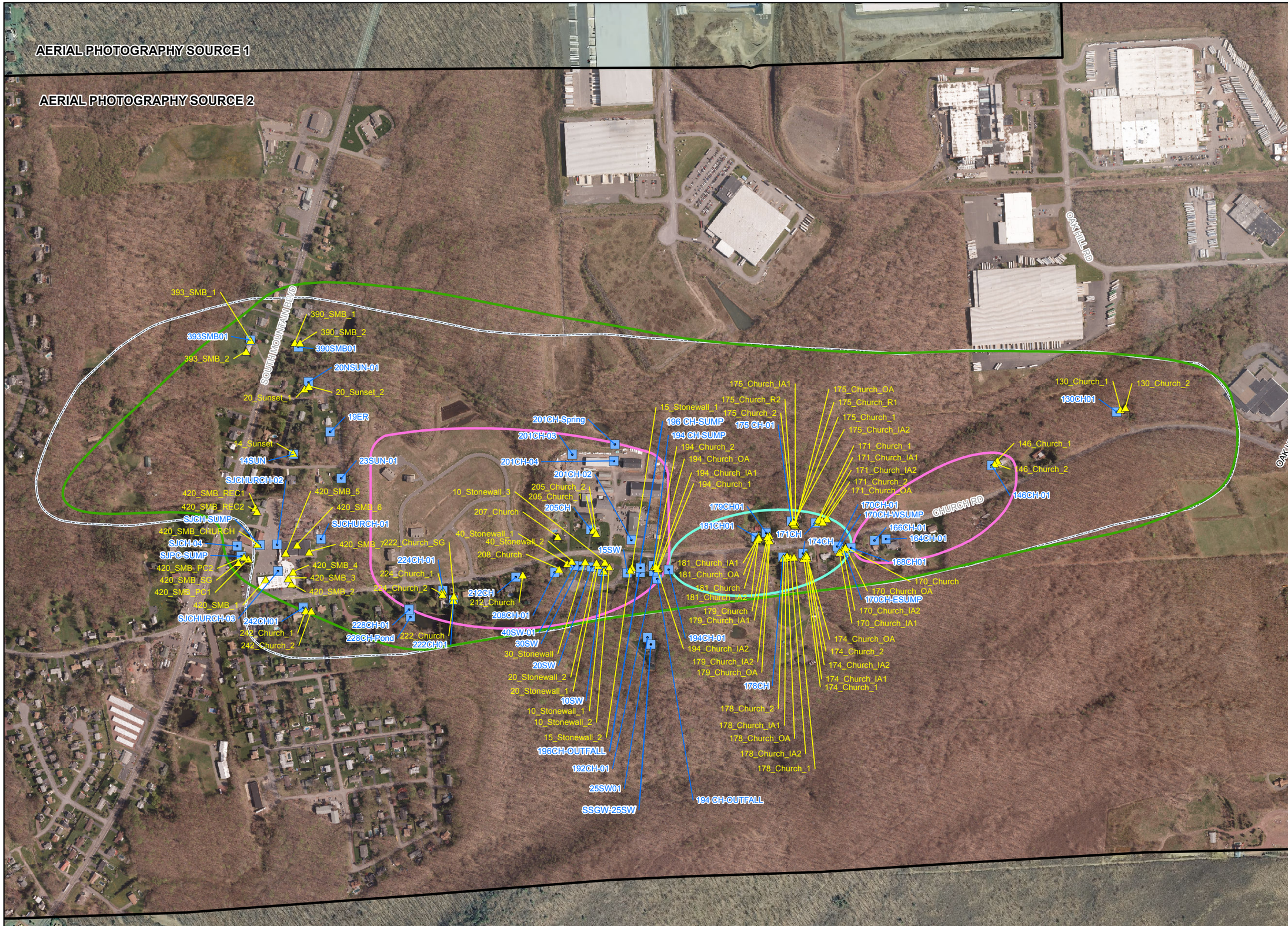
FIGURE 1-4

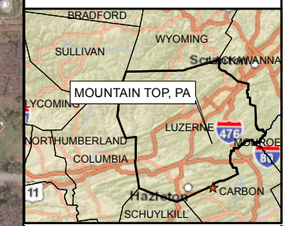
SURROUNDING INDUSTRIAL PROPERTIES

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

Document Path: T:\GIS\Mountain Top, PA\Geospatial\MXD Versions\RI_FS\Final\Figure_1_4_Surrounding_Industrial_Properties.mxd





Legend

- Air Vapor Intrusion Sample Locations (Indoor Air, Outdoor Air, Sub-Slab Vapor, Soil Gas)
- Shallow Groundwater Vapor Intrusion Sample Locations
- VI Investigation Area 1
- VI Investigation Area 2
- VI Investigation Area 3
- Affected Area

0 250 500
FEET

SOURCES:

1) AERIAL PHOTOGRAPHY: PAMAP PROGRAM, PA DEPT. OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, 2008

2) AERIAL PHOTOGRAPHY: AXIS GEOSPATIAL, 2011

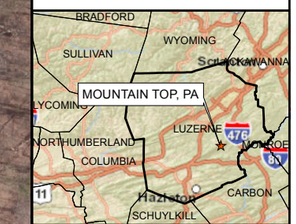
FIGURE 2-1

VAPOR INTRUSION INVESTIGATION SAMPLE LOCATIONS

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

Document Path: T:\GIS\Mountain Top, PA\Geospatial\MXD Versions\RI_FS\Final\Figure_2_1_VI_Investigation_Sample_Locations.mxd



Legend

- Soil Sample Location
- MIP Profile Location
- MIP Area 1
- MIP Area 2
- Former FWEC Facility

0 25 50 100 150
FEET

SOURCES:

AERIAL PHOTOGRAPHY:
AXIS GEOSPATIAL, 2011

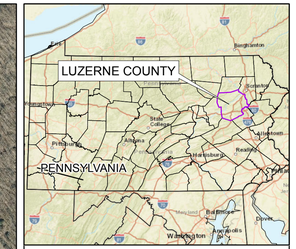
FIGURE 2-2A

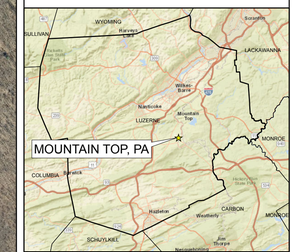
MEMBRANE INTERFACE PROBE PROFILING AND SURFACE SOIL SAMPLING LOCATIONS

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

Document Path: T:\GIS\Mountain Top, PA\Geospatial\MXD Versions\RI_FS\Final\Figure_2_2a_MIP_Surface_Soil_Sample_Locations.mxd





LEGEND

- SURVEYED WELLS
- RECOVERY WELLS
- SURVEYED EXPLORATORY BORINGS
- GWE-HP SAMPLE LOCATIONS
- GUARDIAN WELLS
- Watering Run and Tributaries

0 250 500 1,000 1,500
FEET

1 INCH = 500 FT
PRINTED AT ANSI D (22" X 34")

SOURCES:

1) AERIAL PHOTOGRAPHY: PAMAP PROGRAM, PA DEPT. OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, 2008

2) AERIAL PHOTOGRAPHY: AXIS GEOSPATIAL, 2011

3) WELLS: BANC3, 2013

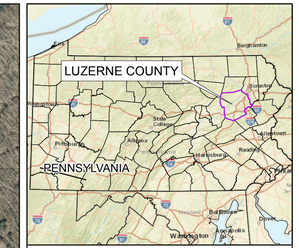
FIGURE 2-2B

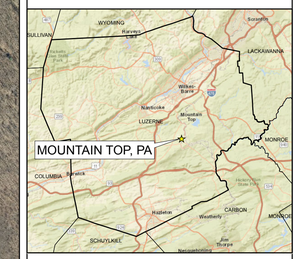
SAMPLE LOCATIONS - GROUNDWATER

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

Path: T:\GIS\Mountain Top, PA\Geospatial\MXD Versions\RI_FS\2016_Updates\Figure_2_2B_GW_Sample_Locations.mxd





LEGEND

- SURVEYED STREAM GAUGES
- SURFACE WATER/SEDIMENT & PORE WATER SAMPLE LOCATIONS
- Watering Run and Tributaries

0 250 500 1,000 1,500
FEET

1 INCH = 500 FT
PRINTED AT ANSI D (22" X 34")

SOURCES:

1) AERIAL PHOTOGRAPHY: PAMAP PROGRAM, PA DEPT. OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, 2008

2) AERIAL PHOTOGRAPHY: AXIS GEOSPATIAL, 2011

3) WELLS: BANC3, 2013

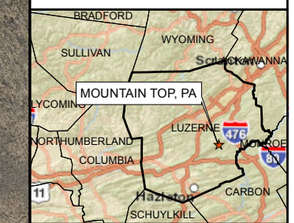
FIGURE 2-2C

SAMPLE LOCATIONS - SURFACE WATER, SEDIMENT AND PORE WATER

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

Path: T:\GIS\Mountain Top, PA\Geospatial\MXD Versions\RI_FS\2016_Updates\Figure_2_2C_SW_SED_PW_Sample_Locations.mxd



Legend

- Affected Area
- Former FWEC Facility
- Surveyed 10ft Contours (NAVD88)

0 250 500 1,000
FEET

SOURCES:

1) AERIAL PHOTOGRAPHY: PAMAP PROGRAM, PA DEPT. OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, 2008

2) AERIAL PHOTOGRAPHY: AXIS GEOSPATIAL, 2011

3) TOPOGRAPHIC CONTOURS: BANC 3 SURVEY, 2012

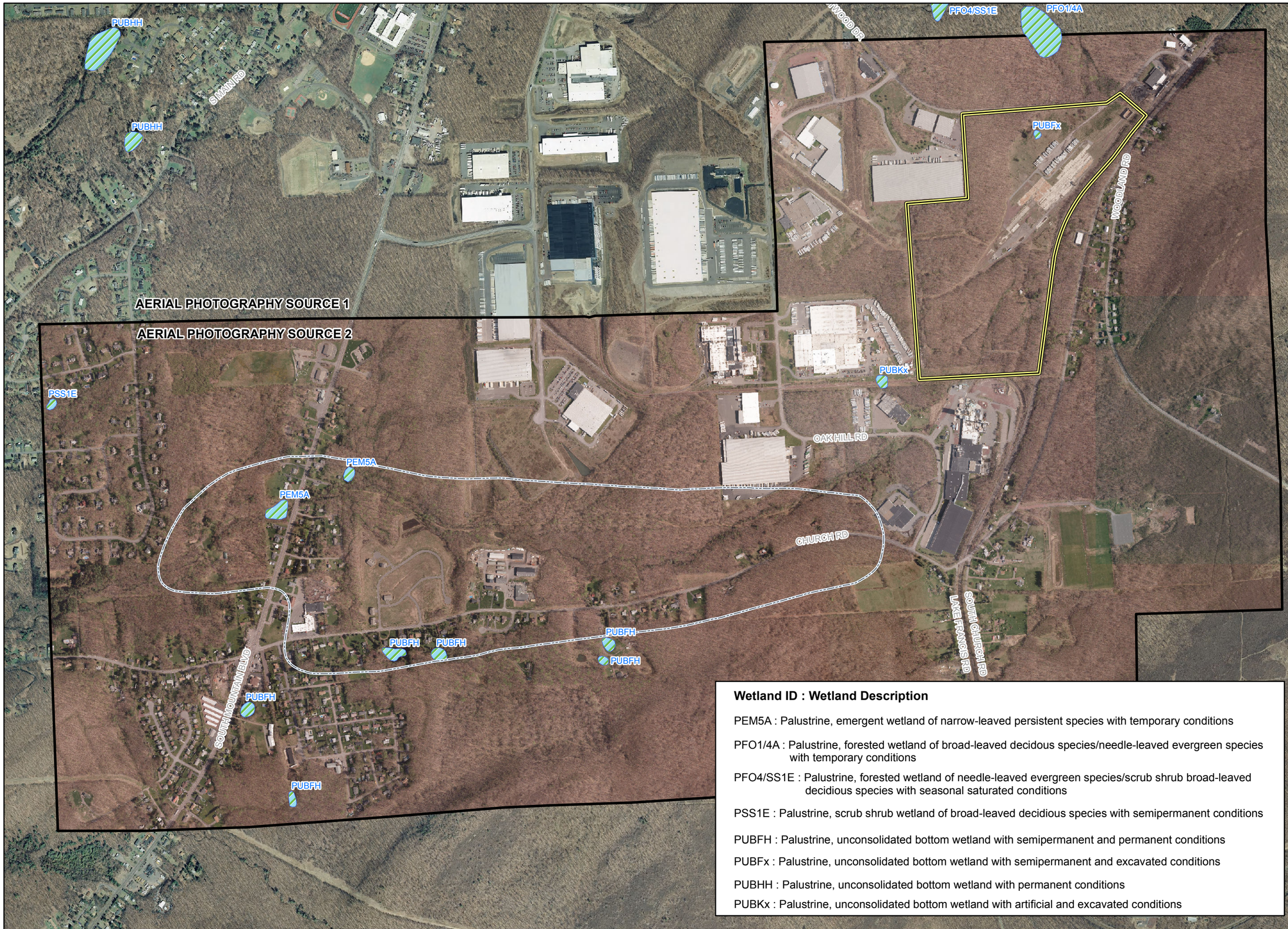
FIGURE 3-1

TOPOGRAPHIC CONTOURS

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

Document Path: T:\GIS\Mountain Top, PA\Geospatial\MXD Versions\RI_FS\Final\Figure_3_1_Topography.mxd



Legend

- Affected Area
- Former FWEC Facility
- NWI Wetland

0 250 500 1,000
FEET

SOURCES:

1) AERIAL PHOTOGRAPHY: PAMAP PROGRAM, PA DEPT. OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, 2008

2) AERIAL PHOTOGRAPHY: AXIS GEOSPATIAL, 2011

3) US FISH AND WILDLIFE SERVICE: NWI WETLANDS DATA.

Wetland ID : Wetland Description

PEM5A : Palustrine, emergent wetland of narrow-leaved persistent species with temporary conditions

PFO1/4A : Palustrine, forested wetland of broad-leaved decidous species/needle-leaved evergreen species with temporary conditions

PFO4/SS1E : Palustrine, forested wetland of needle-leaved evergreen species/scrub shrub broad-leaved decidious species with seasonal saturated conditions

PSS1E : Palustrine, scrub shrub wetland of broad-leaved decidious species with semipermanent conditions

PUBFH : Palustrine, unconsolidated bottom wetland with semipermanent and permanent conditions

PUBFx : Palustrine, unconsolidated bottom wetland with semipermanent and excavated conditions

PUBHH : Palustrine, unconsolidated bottom wetland with permanent conditions

PUBKx : Palustrine, unconsolidated bottom wetland with artificial and excavated conditions

FIGURE 3-2

NWI WETLANDS MAP

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

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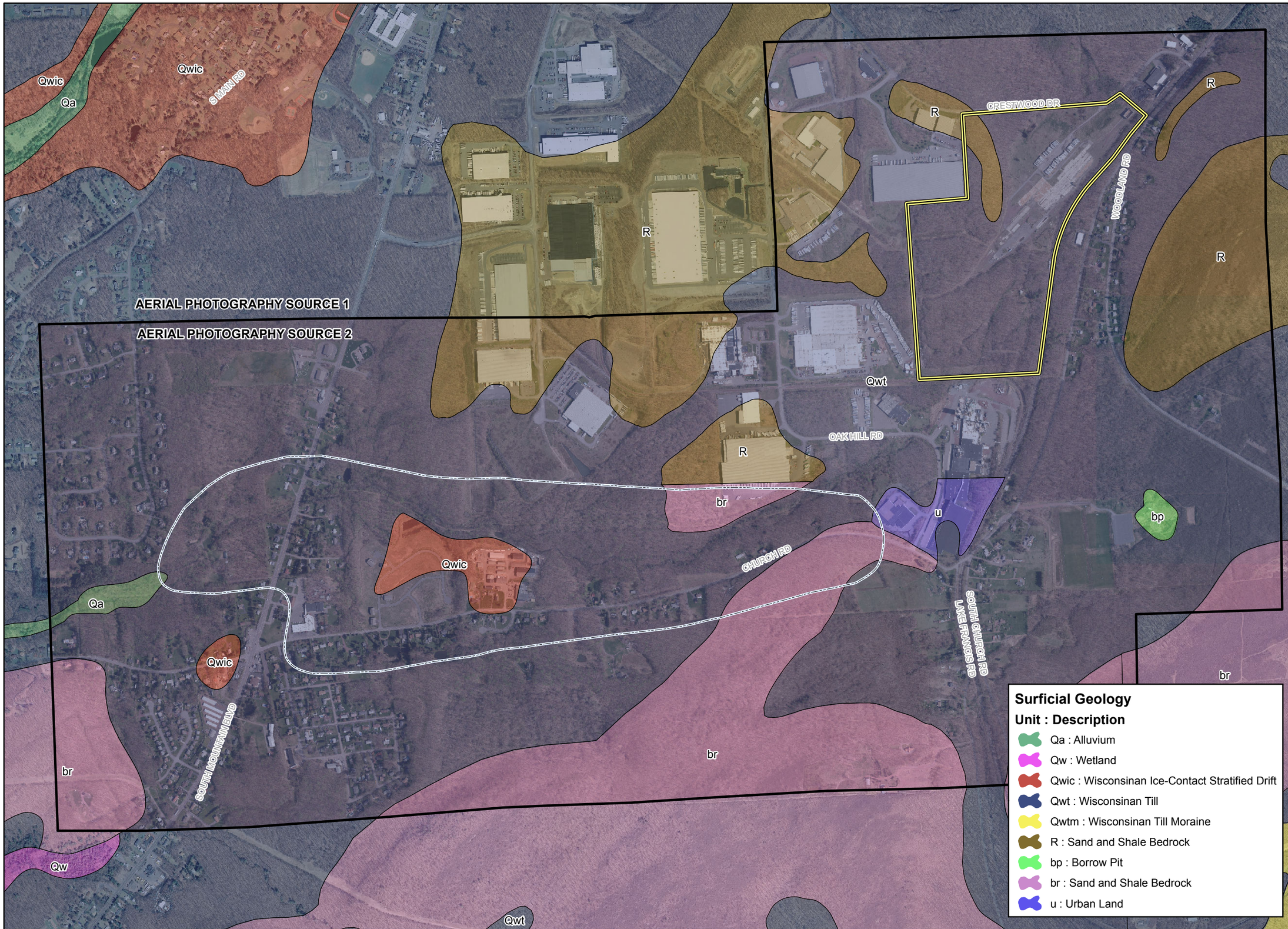

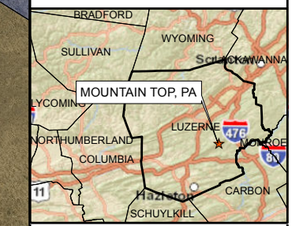

Legend

- Affected Area
- Former FWEC Facility

0 250 500 1,000
FEET

SOURCES:

1) AERIAL PHOTOGRAPHY: PAMAP PROGRAM, PA DEPT. OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, 2008

2) AERIAL PHOTOGRAPHY: AXIS GEOSPATIAL, 2011

3) PA GEOLOGICAL SURVEY: BEDROCK GEOLOGY DATA.

Surficial Geology

Unit : Description

- Qa : Alluvium
- Qw : Wetland
- Qwic : Wisconsinan Ice-Contact Stratified Drift
- Qwt : Wisconsinan Till
- Qwtm : Wisconsinan Till Moraine
- R : Sand and Shale Bedrock
- bp : Borrow Pit
- br : Sand and Shale Bedrock
- u : Urban Land

FIGURE 3-3

SURFICIAL GEOLOGY MAP

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

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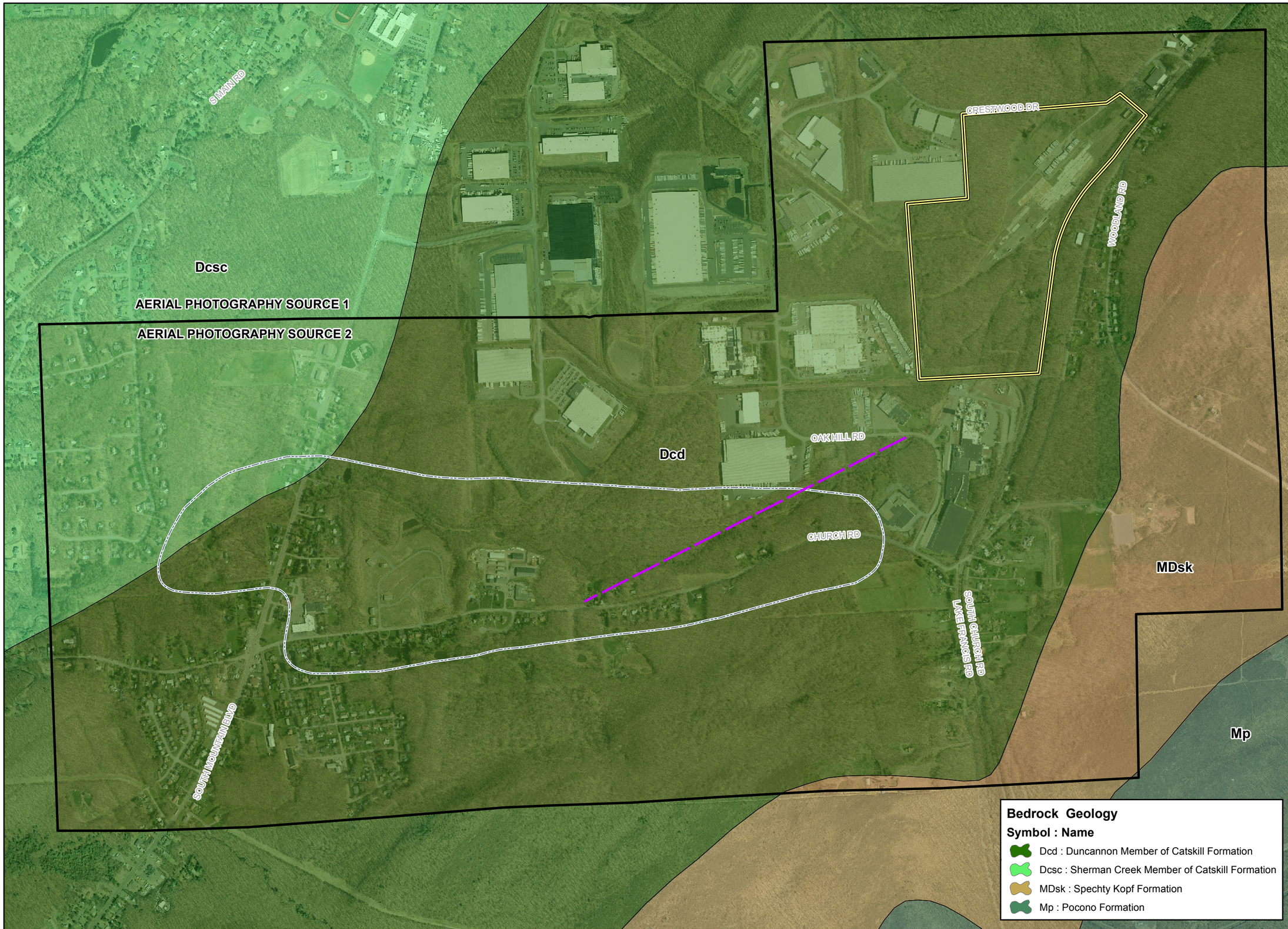

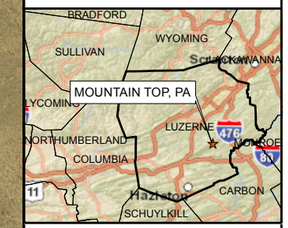

Legend

- Fracture Trace
- Affected Area
- Former FWEC Facility

0 250 500 1,000
FEET

SOURCES:

1) AERIAL PHOTOGRAPHY: PAMAP PROGRAM, PA DEPT. OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, 2008

2) AERIAL PHOTOGRAPHY: AXIS GEOSPATIAL, 2011

3) PA GEOLOGICAL SURVEY: BEDROCK GEOLOGY DATA.

FIGURE 3-4

BEDROCK GEOLOGY MAP

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

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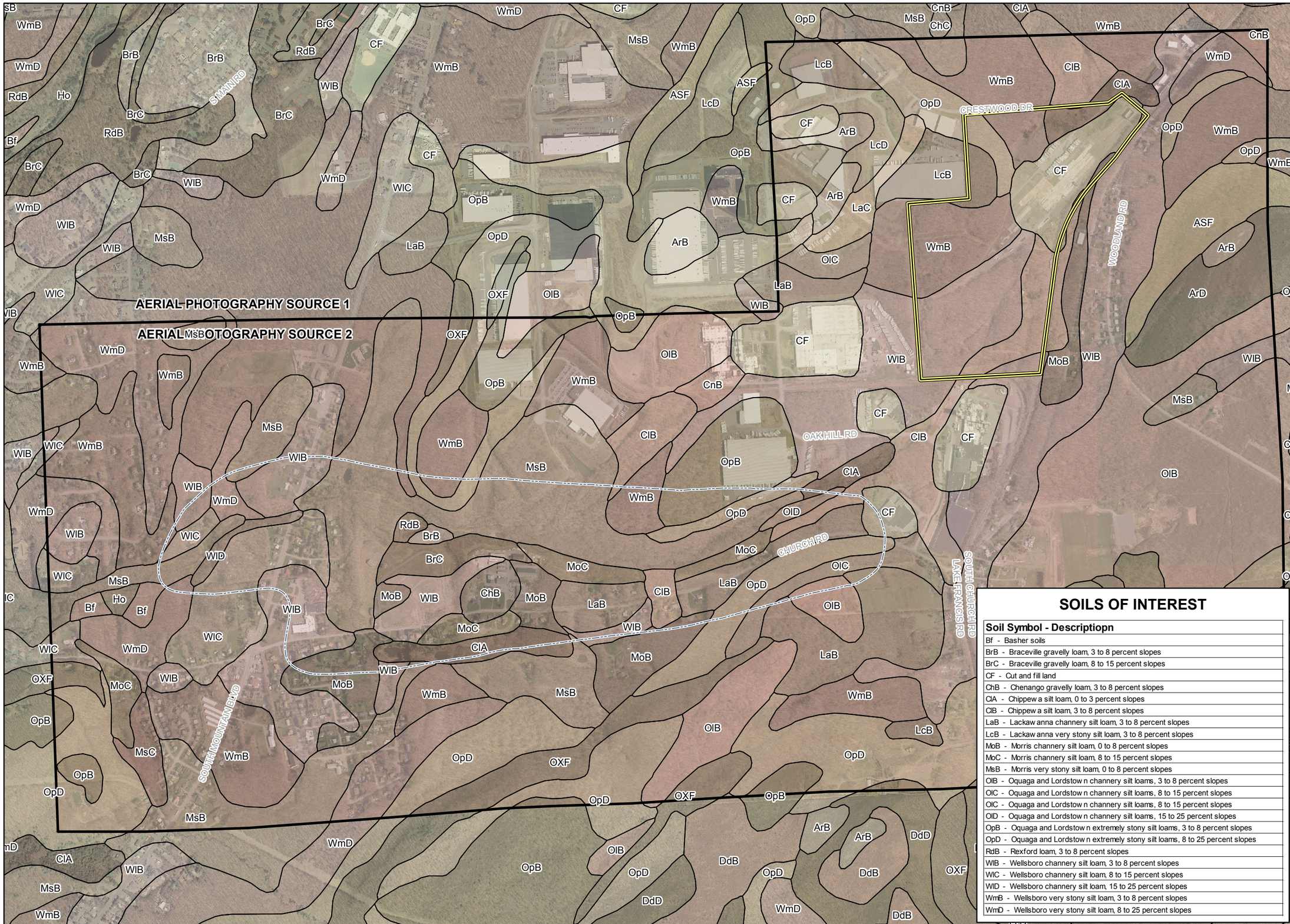

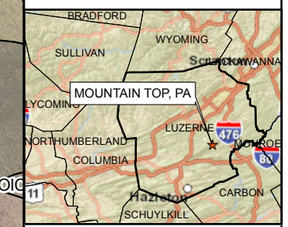

Legend

- Affected Area
- Former FWEC Facility

0 250 500 1,000
FEET

SOILS OF INTEREST

Soil Symbol - Descriptiopn
Bf - Basher soils
BrB - Braceville gravelly loam, 3 to 8 percent slopes
BrC - Braceville gravelly loam, 8 to 15 percent slopes
CF - Cut and fill land
ChB - Chenango gravelly loam, 3 to 8 percent slopes
ClA - Chippew a silt loam, 0 to 3 percent slopes
ClB - Chippew a silt loam, 3 to 8 percent slopes
LaB - Lackaw anna channery silt loam, 3 to 8 percent slopes
LcB - Lackaw anna very stony silt loam, 3 to 8 percent slopes
MoB - Morris channery silt loam, 0 to 8 percent slopes
MoC - Morris channery silt loam, 8 to 15 percent slopes
MsB - Morris very stony silt loam, 0 to 8 percent slopes
OlB - Oquaga and Lordstow n channery silt loams, 3 to 8 percent slopes
OlC - Oquaga and Lordstow n channery silt loams, 8 to 15 percent slopes
OlC - Oquaga and Lordstow n channery silt loams, 8 to 15 percent slopes
OlD - Oquaga and Lordstow n channery silt loams, 15 to 25 percent slopes
OpB - Oquaga and Lordstow n extremely stony silt loams, 3 to 8 percent slopes
OpD - Oquaga and Lordstow n extremely stony silt loams, 8 to 25 percent slopes
RdB - Rexford loam, 3 to 8 percent slopes
WlB - Wellsboro channery silt loam, 3 to 8 percent slopes
WlC - Wellsboro channery silt loam, 8 to 15 percent slopes
WlD - Wellsboro channery silt loam, 15 to 25 percent slopes
WmB - Wellsboro very stony silt loam, 3 to 8 percent slopes
WmD - Wellsboro very stony silt loam, 8 to 25 percent slopes

SOURCES:

1) AERIAL PHOTOGRAPHY: PAMAP PROGRAM, PA DEPT. OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, 2008

2) AERIAL PHOTOGRAPHY: AXIS GEOSPATIAL, 2011

3) USDA NATURAL RESOURCES CONSERVATION SERVICE SOIL SURVEY DATA.

FIGURE 3-5

NRCS SOIL SURVEY MAP

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

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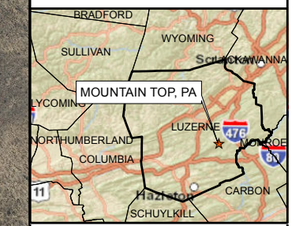


Legend

- Affected Area
- Former FWEC Facility
- Bedrock Surface Elevations

0 250 500 1,000
FEET

SOURCES:

1) AERIAL PHOTOGRAPHY: PAMAP PROGRAM, PA DEPT. OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, 2008

2) AERIAL PHOTOGRAPHY: AXIS GEOSPATIAL, 2011

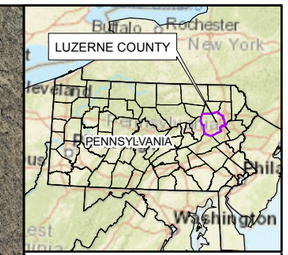
FIGURE 3-6

BEDROCK SURFACE ELEVATIONS

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

Document Path: T:\GIS\Mountain Top, PA\Geospatial\MXD Versions\RI_FS\Final\Figure_3_6_Bedrock_Surface_Elevations.mxd



Legend

- Wells
- Recovery Wells
- Affected Area
- Former FWEC Facility
- Potentiometric Surface (May 23, 2013)

0 250 500 1,000
FEET

SOURCES:

1) AERIAL PHOTOGRAPHY: PAMAP PROGRAM, PA DEPT. OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, 2008

2) AERIAL PHOTOGRAPHY: AXIS GEOSPATIAL, 2011

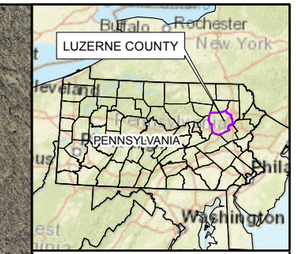
FIGURE 3-7A

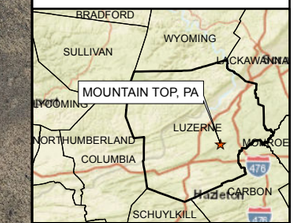
POTENTIOMETRIC SURFACE ELEVATIONS ROUND 1

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

Document Path: T:\GIS\Mountain Top, PA\Geospatial\MXD Versions\RI_FS\2016_Updates\Figure_3_7A_Potentiometric_Elevations_R1.mxd





Legend

- Wells
- Recovery Wells
- Affected Area
- Former FWEC Facility
- Potentiometric Surface (September 9, 2013)

0 250 500 1,000
FEET

SOURCES:

1) AERIAL PHOTOGRAPHY: PAMAP PROGRAM, PA DEPT. OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, 2008

2) AERIAL PHOTOGRAPHY: AXIS GEOSPATIAL, 2011

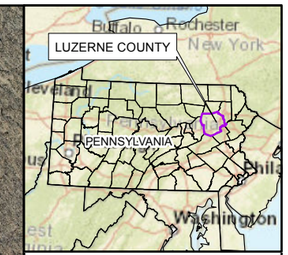
FIGURE 3-7B

POTENTIOMETRIC SURFACE ELEVATIONS ROUND 2

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

Document Path: T:\GIS\Mountain Top, PA\Geospatial\MXD Versions\RI_FS\2016_Updates\Figure_3_7B_Potentiometric_Elevations_R2.mxd



Legend

- Wells
- Recovery Wells
- Affected Area
- Former FWEC Facility
- Potentiometric Surface (April 14, 2014)

0 250 500 1,000
FEET

SOURCES:

1) AERIAL PHOTOGRAPHY: PAMAP PROGRAM, PA DEPT. OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, 2008

2) AERIAL PHOTOGRAPHY: AXIS GEOSPATIAL, 2011

FIGURE 3-7C

POTENTIOMETRIC SURFACE ELEVATIONS ROUND 3

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

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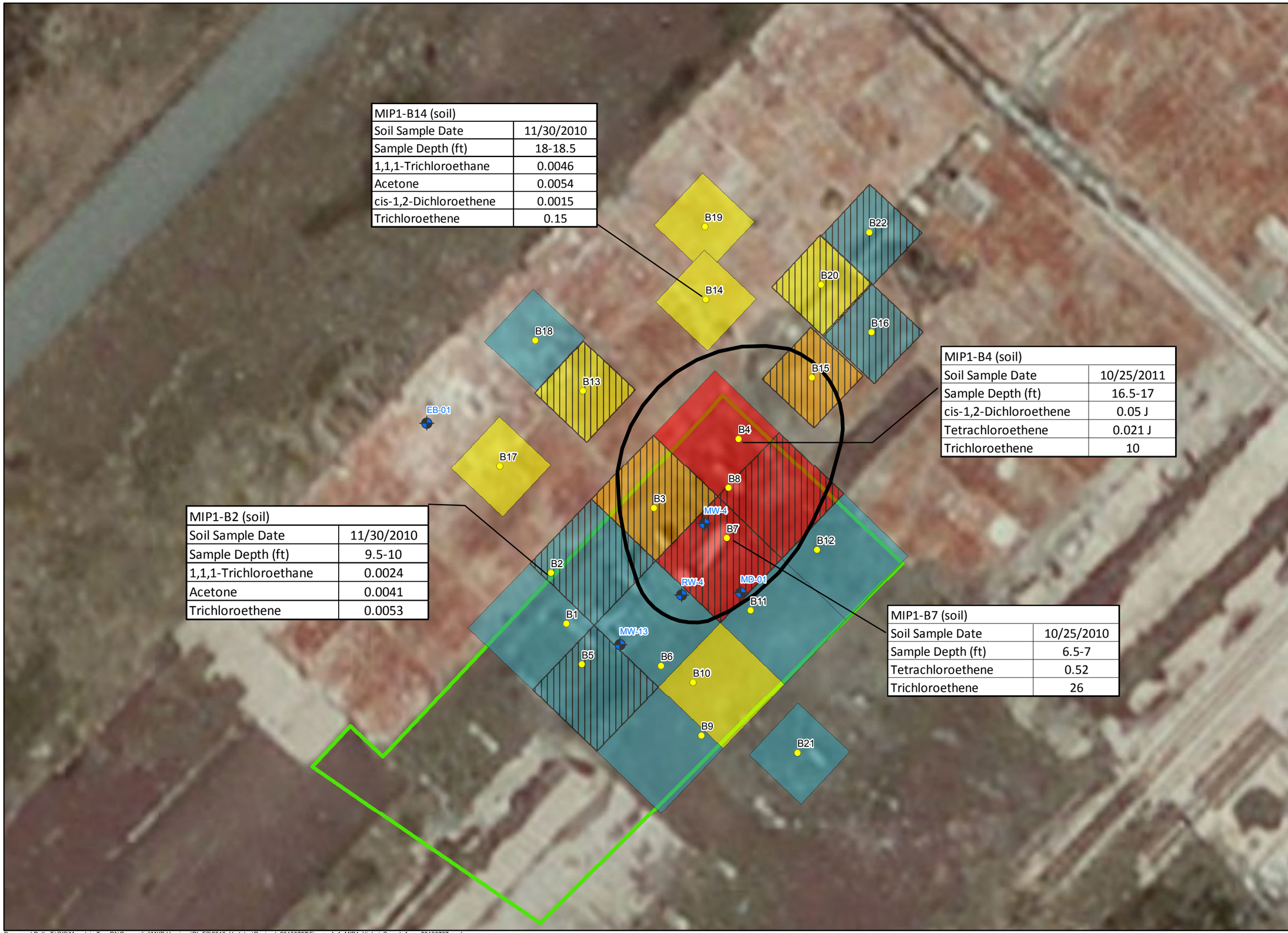
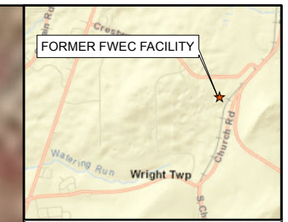


MIP1-B14 (soil)	
Soil Sample Date	11/30/2010
Sample Depth (ft)	18-18.5
1,1,1-Trichloroethane	0.0046
Acetone	0.0054
cis-1,2-Dichloroethene	0.0015
Trichloroethene	0.15

MIP1-B4 (soil)	
Soil Sample Date	10/25/2011
Sample Depth (ft)	16.5-17
cis-1,2-Dichloroethene	0.05 J
Tetrachloroethene	0.021 J
Trichloroethene	10

MIP1-B2 (soil)	
Soil Sample Date	11/30/2010
Sample Depth (ft)	9.5-10
1,1,1-Trichloroethane	0.0024
Acetone	0.0041
Trichloroethene	0.0053

MIP1-B7 (soil)	
Soil Sample Date	10/25/2010
Sample Depth (ft)	6.5-7
Tetrachloroethene	0.52
Trichloroethene	26



Legend

- Surveyed Well
- MIP Locations
- Approximate Area of High Subsurface Impacts
- Historic Soil Sample Location Area

Maximum ECD Response (uV)

- 0e6 - 1e6
- 1e6 - 5e6
- 5e6 - 10e6
- 10e6 - 14e6
- Indicates Exceedance*

0 5 10 20 30
Feet

SOURCES:

AERIAL PHOTOGRAPHY:
AXIS GEOSPATIAL, 2011

NOTES:

1) UNITS ARE MG/KG FOR SOIL SAMPLES.

2) DATA QUALIFIERS:
J - ESTIMATED

3) * INDICATES RESPONSE EXCEEDED THE ATTENUATION RANGE OF THE INSTRUMENT OVER A ≥0.1-FOOT DISTANCE. ACTUAL MAXIMUM RESPONSE VALUE FOR LOCATION MAY BE GREATER THAN AMOUNT INDICATED.

4) EXACT SAMPLE LOCATIONS FOR HISTORICAL DATA COULD NOT BE IDENTIFIED.

FIGURE 4-1

RELATIVE CHLORINATED COMPOUND RESPONSE WITH DETECTED CONCENTRATIONS OF VOCS FROM CONFIRMATORY SOIL SAMPLES

FORMER VAPOR DEGREASER MIP AREA #1

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

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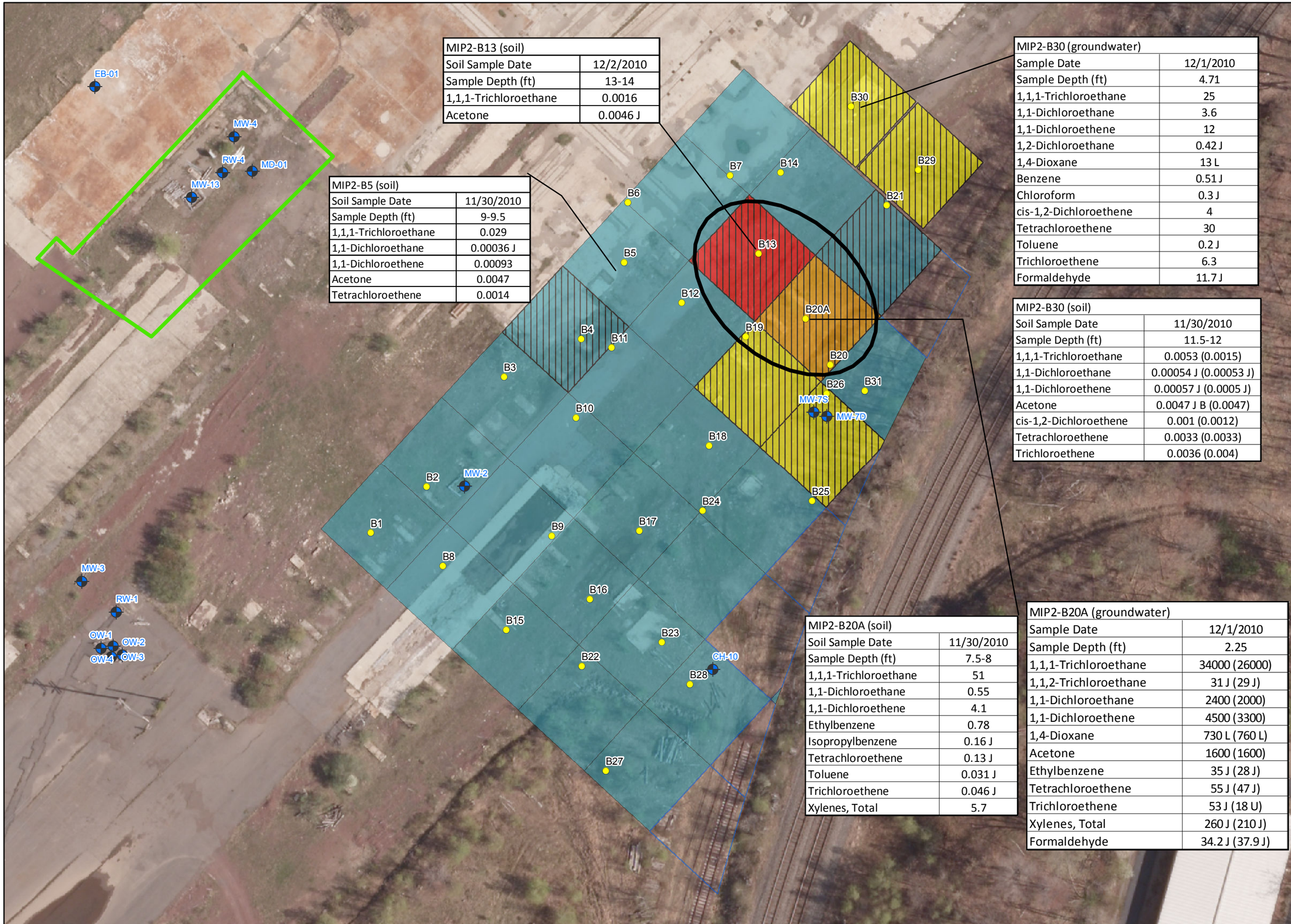


MIP2-B13 (soil)	
Soil Sample Date	12/2/2010
Sample Depth (ft)	13-14
1,1,1-Trichloroethane	0.0016
Acetone	0.0046 J

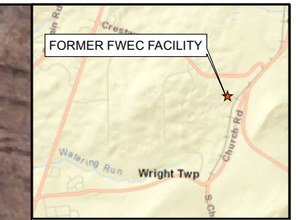
MIP2-B5 (soil)	
Soil Sample Date	11/30/2010
Sample Depth (ft)	9-9.5
1,1,1-Trichloroethane	0.029
1,1-Dichloroethane	0.00036 J
1,1-Dichloroethene	0.00093
Acetone	0.0047
Tetrachloroethene	0.0014

MIP2-B30 (groundwater)	
Sample Date	12/1/2010
Sample Depth (ft)	4.71
1,1,1-Trichloroethane	25
1,1-Dichloroethane	3.6
1,1-Dichloroethene	12
1,2-Dichloroethane	0.42 J
1,4-Dioxane	13 L
Benzene	0.51 J
Chloroform	0.3 J
cis-1,2-Dichloroethene	4
Tetrachloroethene	30
Toluene	0.2 J
Trichloroethene	6.3
Formaldehyde	11.7 J

MIP2-B30 (soil)	
Soil Sample Date	11/30/2010
Sample Depth (ft)	11.5-12
1,1,1-Trichloroethane	0.0053 (0.0015)
1,1-Dichloroethane	0.00054 J (0.00053 J)
1,1-Dichloroethene	0.00057 J (0.0005 J)
Acetone	0.0047 J B (0.0047)
cis-1,2-Dichloroethene	0.001 (0.0012)
Tetrachloroethene	0.0033 (0.0033)
Trichloroethene	0.0036 (0.004)

MIP2-B20A (soil)	
Soil Sample Date	11/30/2010
Sample Depth (ft)	7.5-8
1,1,1-Trichloroethane	51
1,1-Dichloroethane	0.55
1,1-Dichloroethene	4.1
Ethylbenzene	0.78
Isopropylbenzene	0.16 J
Tetrachloroethene	0.13 J
Toluene	0.031 J
Trichloroethene	0.046 J
Xylenes, Total	5.7

MIP2-B20A (groundwater)	
Sample Date	12/1/2010
Sample Depth (ft)	2.25
1,1,1-Trichloroethane	34000 (26000)
1,1,2-Trichloroethane	31 J (29 J)
1,1-Dichloroethane	2400 (2000)
1,1-Dichloroethene	4500 (3300)
1,4-Dioxane	730 L (760 L)
Acetone	1600 (1600)
Ethylbenzene	35 J (28 J)
Tetrachloroethene	55 J (47 J)
Trichloroethene	53 J (18 U)
Xylenes, Total	260 J (210 J)
Formaldehyde	34.2 J (37.9 J)



Legend

- Surveyed Well
- MIP Locations
- Approximate Area of High Subsurface Impact
- Historic Soil Sample Location Area

Maximum ECD Response (uV)

Response

- 0e6 - 1e6
- 1e6 - 5e6
- 5e6 - 10e6
- 10e6 - 14e6
- Not Sampled
- Indicates Exceedance*

0 10 20 40 60
Feet

SOURCES:
AERIAL PHOTOGRAPHY:
AXIS GEOSPATIAL, 2011

NOTES:
1) UNITS ARE µg/L FOR GROUNDWATER SAMPLES AND MG/KG FOR SOIL SAMPLES.

2) DATA QUALIFIERS:
J - ESTIMATED
L - REPORTED VALUE MAY BE BIASED LOW
U - NOT DETECTED AT METHOD DETECTION LIMIT PROVIDED

3) * INDICATES RESPONSE EXCEEDED THE ATTENUATION RANGE OF THE INSTRUMENT OVER A ≥0.1-FOOT DISTANCE. ACTUAL MAXIMUM RESPONSE VALUE FOR LOCATION MAY BE GREATER THAN AMOUNT INDICATED.

4) VALUES IN PARENTHESES REPRESENT THE CONCENTRATIONS IN DUPLICATE SAMPLES

5) EXACT SAMPLE LOCATIONS FOR HISTORICAL DATA COULD NOT BE IDENTIFIED.

FIGURE 4-2

RELATIVE CHLORINATED COMPOUND RESPONSE WITH DETECTED CONCENTRATIONS OF VOCS FROM CONFIRMATORY SOIL AND GROUNDWATER SAMPLES

FORMER FINISH PAINT BUILDING & SOLVENT AND PAINT STORAGE BUILDINGS MIP AREA #2

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

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Legend

- GWE Location Sampled
- GWE Location Eliminated
- GWE Location Attempted but Not Sampled (Number of Attempts)
- Exisiting MW
- Access Denied for Sampling
- Tax Parcel Boundaries

0 100 200 400
Feet

SOURCES:

AERIAL PHOTOGRAPHY:
AXIS GEOSPATIAL, 2011

NOTES:

1) ALL UNITS IN µg/L

2) DATA QUALIFIERS:
J - ESTIMATED
U - NOT DETECTED AT METHOD DETECTION LIMIT PROVIDED

3) VALUES IN PARENTHESES REPRESENT THE CONCENTRATIONS IN DUPLICATE SAMPLES

FIGURE 4-3

TCE CONCENTRATIONS IN GROUNDWATER SCREENING EVALUATION SAMPLES

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

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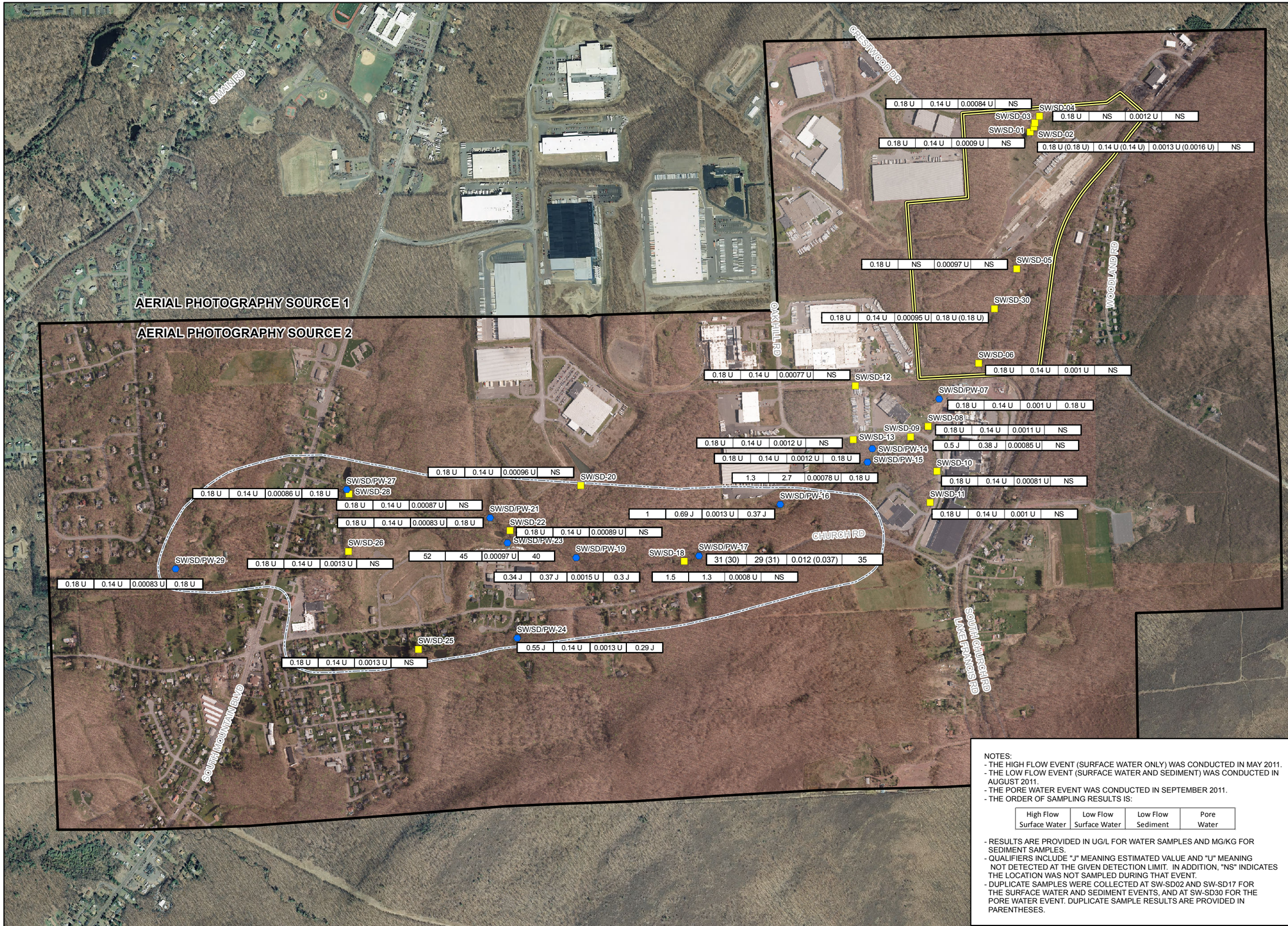


NOTES:
- THE HIGH FLOW EVENT (SURFACE WATER ONLY) WAS CONDUCTED IN MAY 2011.
- THE LOW FLOW EVENT (SURFACE WATER AND SEDIMENT) WAS CONDUCTED IN AUGUST 2011.
- THE PORE WATER EVENT WAS CONDUCTED IN SEPTEMBER 2011.
- THE ORDER OF SAMPLING RESULTS IS:

High Flow Surface Water	Low Flow Surface Water	Low Flow Sediment	Pore Water

- RESULTS ARE PROVIDED IN UG/L FOR WATER SAMPLES AND MG/KG FOR SEDIMENT SAMPLES.
- QUALIFIERS INCLUDE "J" MEANING ESTIMATED VALUE AND "U" MEANING NOT DETECTED AT THE GIVEN DETECTION LIMIT. IN ADDITION, "NS" INDICATES THE LOCATION WAS NOT SAMPLED DURING THAT EVENT.
- DUPLICATE SAMPLES WERE COLLECTED AT SW-SD02 AND SW-SD17 FOR THE SURFACE WATER AND SEDIMENT EVENTS, AND AT SW-SD30 FOR THE PORE WATER EVENT. DUPLICATE SAMPLE RESULTS ARE PROVIDED IN PARENTHESES.

SOURCES:

1) AERIAL PHOTOGRAPHY: PAMAP PROGRAM, PA DEPT. OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, 2008

2) AERIAL PHOTOGRAPHY: AXIS GEOSPATIAL, 2011

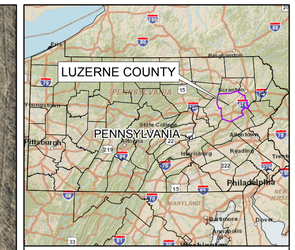
FIGURE 4-4

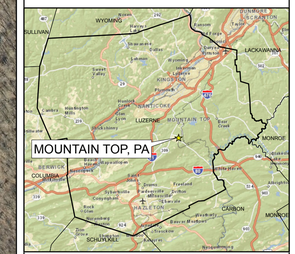
TCE CONCENTRATIONS IN SURFACE WATER, SEDIMENT AND PORE WATER SAMPLES

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

Document Path: T:\GIS\Mountain Top, PA\Geospatial\MXD Versions\RI_FS\Final\Figure_4_4_SWPW.mxd





LEGEND

- SPRING
- SAMPLED WELL
- WELL (NOT SAMPLED)
- GUARDIAN WELL

0 250 500
FEET

1 INCH = 300 FT
PRINTED AT ANSI D (22" X 34")

SOURCES:

1) AERIAL PHOTOGRAPHY: PAMAP PROGRAM, PA DEPT. OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, 2008

2) AERIAL PHOTOGRAPHY: AXIS GEOSPATIAL, 2011

3) WELLS: BANC3, 2013

NOTES:

1) ALL UNITS IN µg/L

2) DATA QUALIFIERS:
J - ESTIMATED
U - NOT DETECTED AT METHOD DETECTION LIMIT PROVIDED

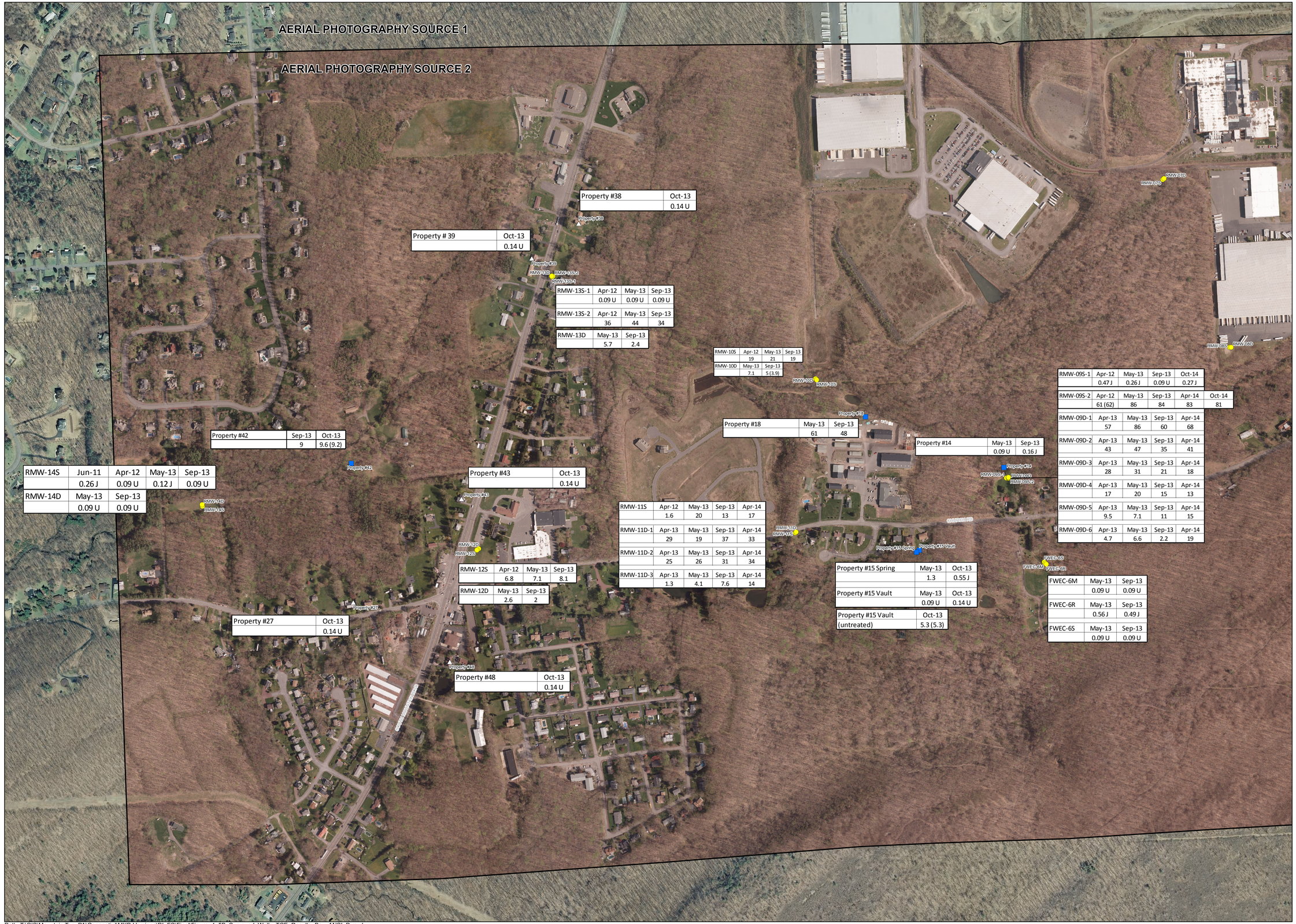
3) VALUES IN PARENTHESES REPRESENT THE CONCENTRATIONS IN DUPLICATE SAMPLES

FIGURE 4-5A

TCE CONCENTRATIONS IN MONITORING WELLS, GUARDIAN WELLS AND SPRINGS

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH



Property #38	Oct-13
	0.14 U

Property # 39	Oct-13
	0.14 U

RMW-13S-1	Apr-12	May-13	Sep-13
	0.09 U	0.09 U	0.09 U

RMW-13S-2	Apr-12	May-13	Sep-13
	36	44	34

RMW-13D	May-13	Sep-13
	5.7	2.4

RMW-10S	Apr-12	May-13	Sep-13
	19	21	19

RMW-10D	May-13	Sep-13
	7.1	5 (3.9)

Property #18	May-13	Sep-13
	61	48

Property #14	May-13	Sep-13
	0.09 U	0.16 J

RMW-09S-1	Apr-12	May-13	Sep-13	Oct-14
	0.47 J	0.26 J	0.09 U	0.27 J

RMW-09S-2	Apr-12	May-13	Sep-13	Apr-14	Oct-14
	61 (62)	86	84	83	81

RMW-09D-1	Apr-13	May-13	Sep-13	Apr-14
	57	86	60	68

RMW-09D-2	Apr-13	May-13	Sep-13	Apr-14
	43	47	35	41

RMW-09D-3	Apr-13	May-13	Sep-13	Apr-14
	28	31	21	18

RMW-09D-4	Apr-13	May-13	Sep-13	Apr-14
	17	20	15	13

RMW-09D-5	Apr-13	May-13	Sep-13	Apr-14
	9.5	7.1	11	15

RMW-09D-6	Apr-13	May-13	Sep-13	Apr-14
	4.7	6.6	2.2	19

Property #42	Sep-13	Oct-13
	9	9.6 (9.2)

RMW-14S	Jun-11	Apr-12	May-13	Sep-13
	0.26 J	0.09 U	0.12 J	0.09 U

RMW-14D	May-13	Sep-13
	0.09 U	0.09 U

Property #43	Oct-13
	0.14 U

RMW-11S	Apr-12	May-13	Sep-13	Apr-14
	1.6	20	13	17

RMW-11D-1	Apr-13	May-13	Sep-13	Apr-14
	29	19	37	33

RMW-11D-2	Apr-13	May-13	Sep-13	Apr-14
	25	26	31	34

RMW-11D-3	Apr-13	May-13	Sep-13	Apr-14
	1.3	4.1	7.6	14

RMW-12S	Apr-12	May-13	Sep-13
	6.8	7.1	8.1

RMW-12D	May-13	Sep-13
	2.6	2

Property #27	Oct-13
	0.14 U

Property #48	Oct-13
	0.14 U

Property #15 Spring	May-13	Oct-13
	1.3	0.55 J

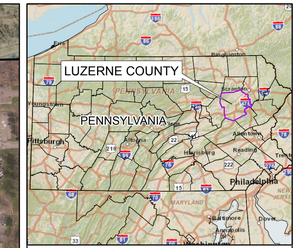
Property #15 Vault	May-13	Oct-13
	0.09 U	0.14 U

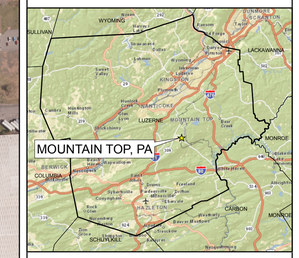
Property #15 Vault (untreated)	Oct-13
	5.3 (5.3)

FWEC-6M	May-13	Sep-13
	0.09 U	0.09 U

FWEC-6R	May-13	Sep-13
	0.56 J	0.49 J

FWEC-6S	May-13	Sep-13
	0.09 U	0.09 U





LEGEND

- SPRING
- SAMPLED WELL
- WELL (NOT SAMPLED)
- GUARDIAN WELL

0 250 500
FEET

1 INCH = 300 FT
PRINTED AT ANSI D (22" X 34")

SOURCES:

1) AERIAL PHOTOGRAPHY: PAMAP PROGRAM, PA DEPT. OF CONSERVATION AND NATURAL RESOURCES, BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY, 2008

2) AERIAL PHOTOGRAPHY: AXIS GEOSPATIAL, 2011

3) WELLS: BANC3, 2013

NOTES:

1) ALL UNITS IN µg/L

2) DATA QUALIFIERS:
J - ESTIMATED
U - NOT DETECTED AT METHOD DETECTION LIMIT PROVIDED

3) VALUES IN PARENTHESES REPRESENT THE CONCENTRATIONS IN DUPLICATE SAMPLES

4) IN APRIL 2014, A TCE CONCENTRATION OF 110 µG/L WAS OBSERVED AT RMW-09S-1; BASED ON PRIOR AND SUBSEQUENT TCE CONCENTRATIONS OBSERVED IN THIS WELL, THIS RESULT IS CONSIDERED ANOMALOUS AND NOT DEPICTED ON THIS FIGURE.

FIGURE 4-5B

TCE CONCENTRATIONS IN MONITORING WELLS, GUARDIAN WELLS AND SPRINGS

MOUNTAIN TOP, PENNSYLVANIA

TETRA TECH

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Figure 4-6A
Discrete Fracture Network Analysis - Rock Cores
Mountain Top RI/FS
Mountain Top, Pennsylvania

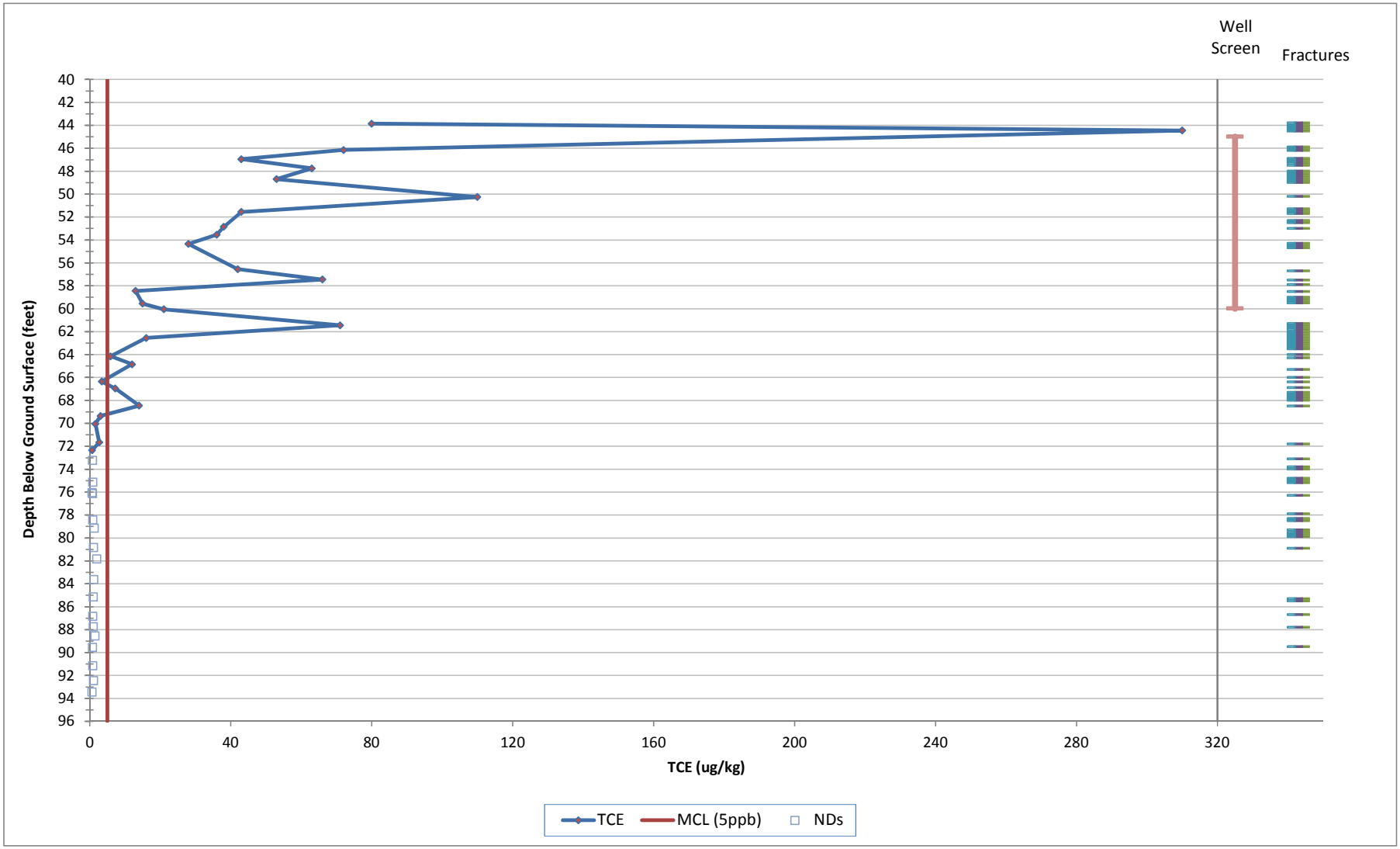


Figure 4-6B
Discrete Fracture Network Analysis - Pore Water (Estimated)
Mountain Top RI/FS
Mountain Top, Pennsylvania

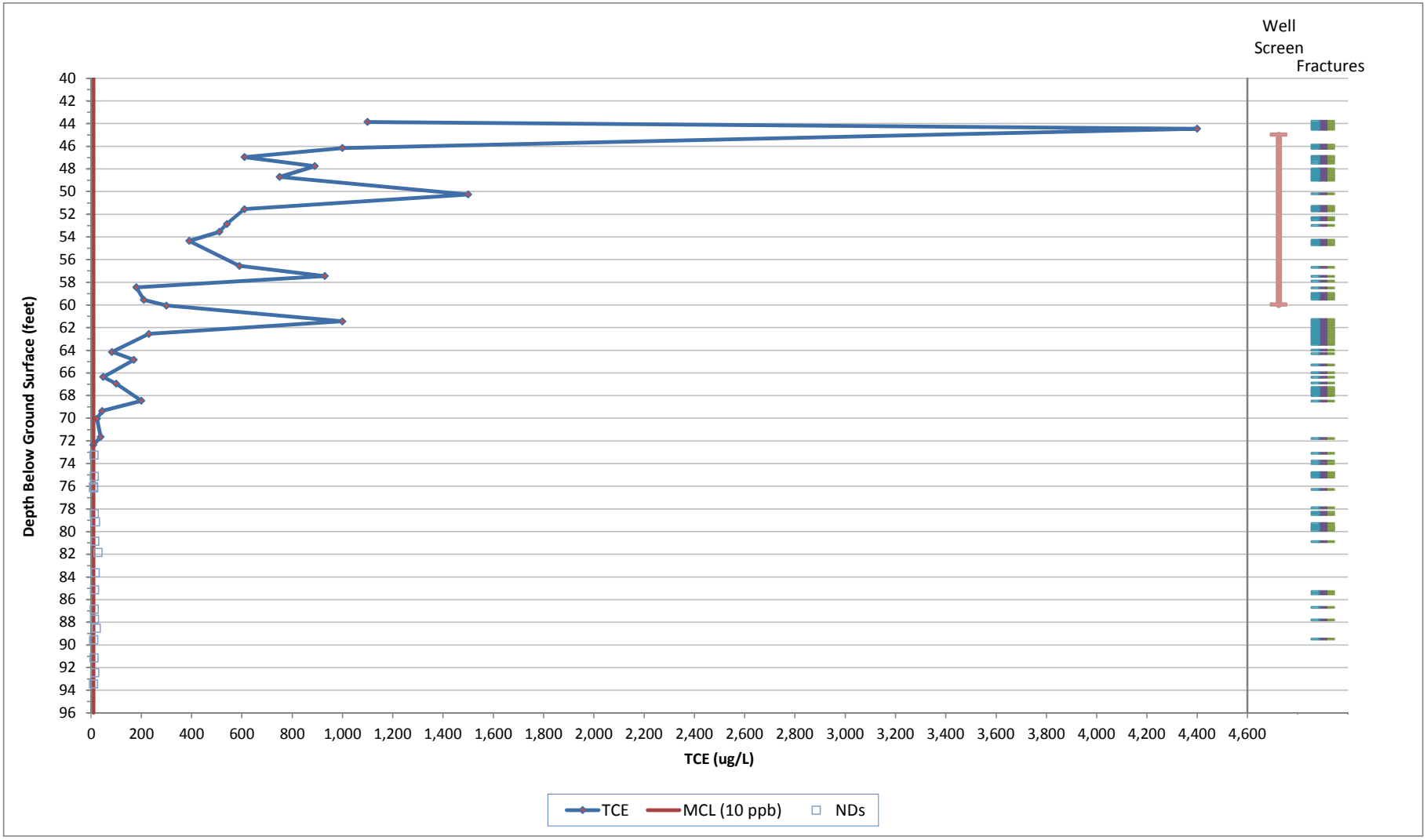


Figure 5-1
Reductive Dechlorination Pathways
Mountain Top RI/FS
Mountain Top, Pennsylvania

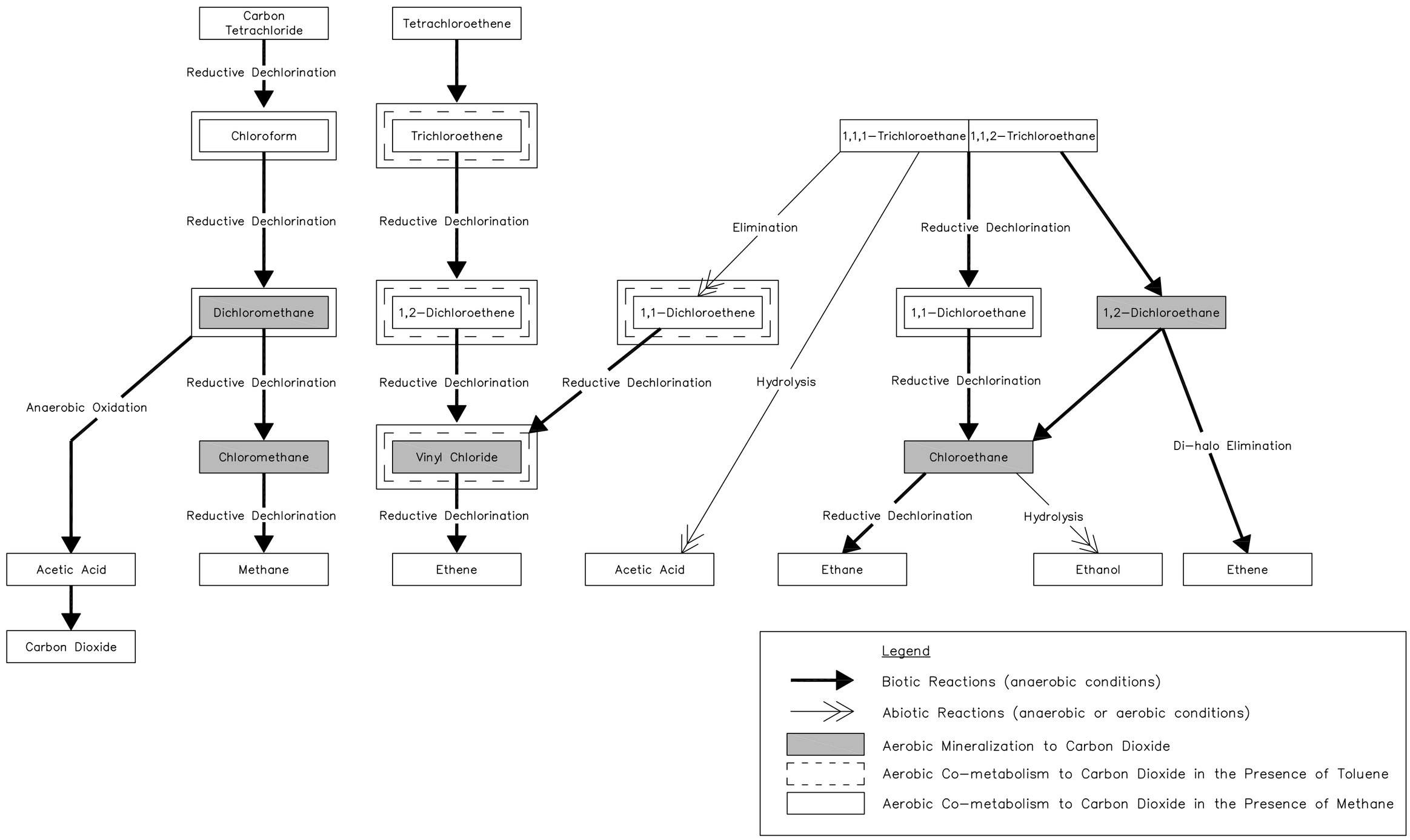
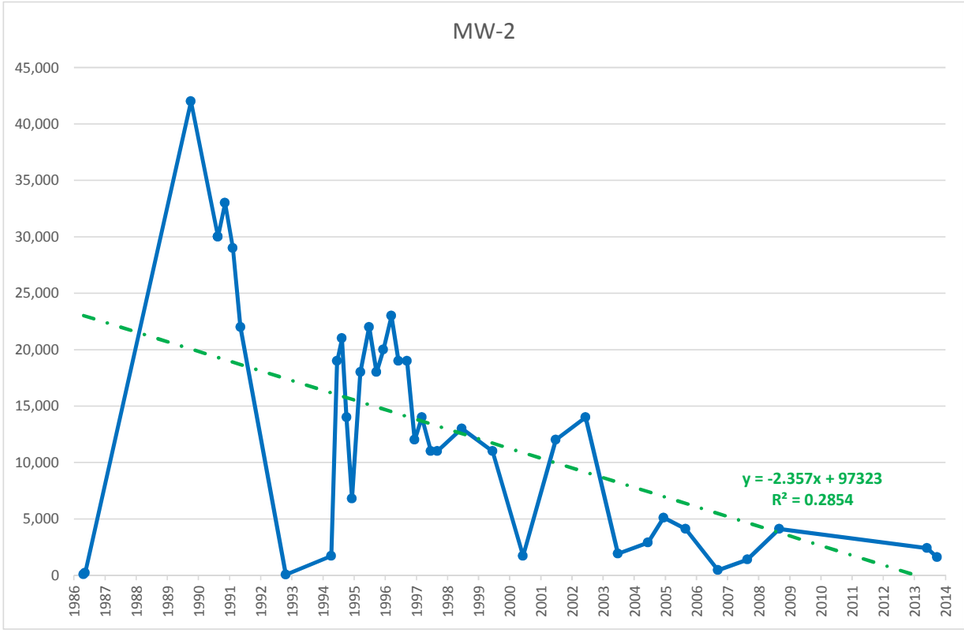
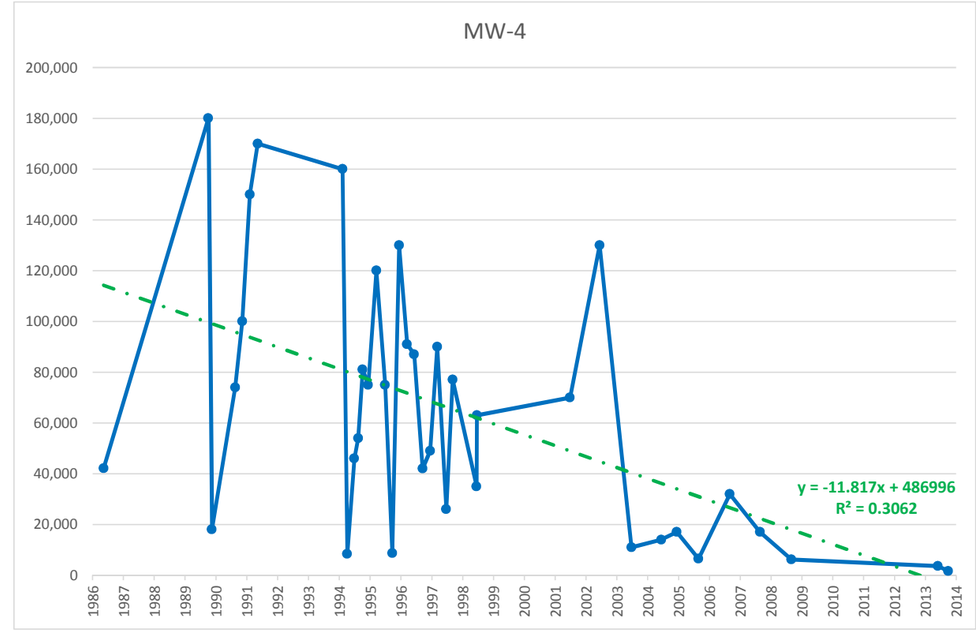
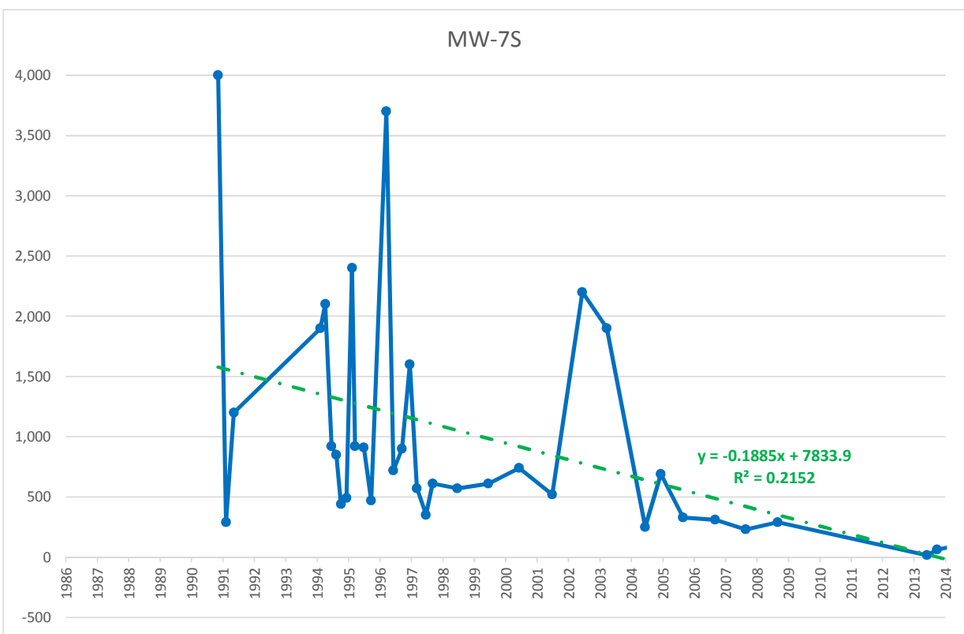


FIGURE 5-2
Trend Analysis of Historic and RI Data at Wells MW-2, MW-4 and MW-7S - Former FWEC Facility
Mountain Top RI/FS
Mountain Top, Pennsylvania

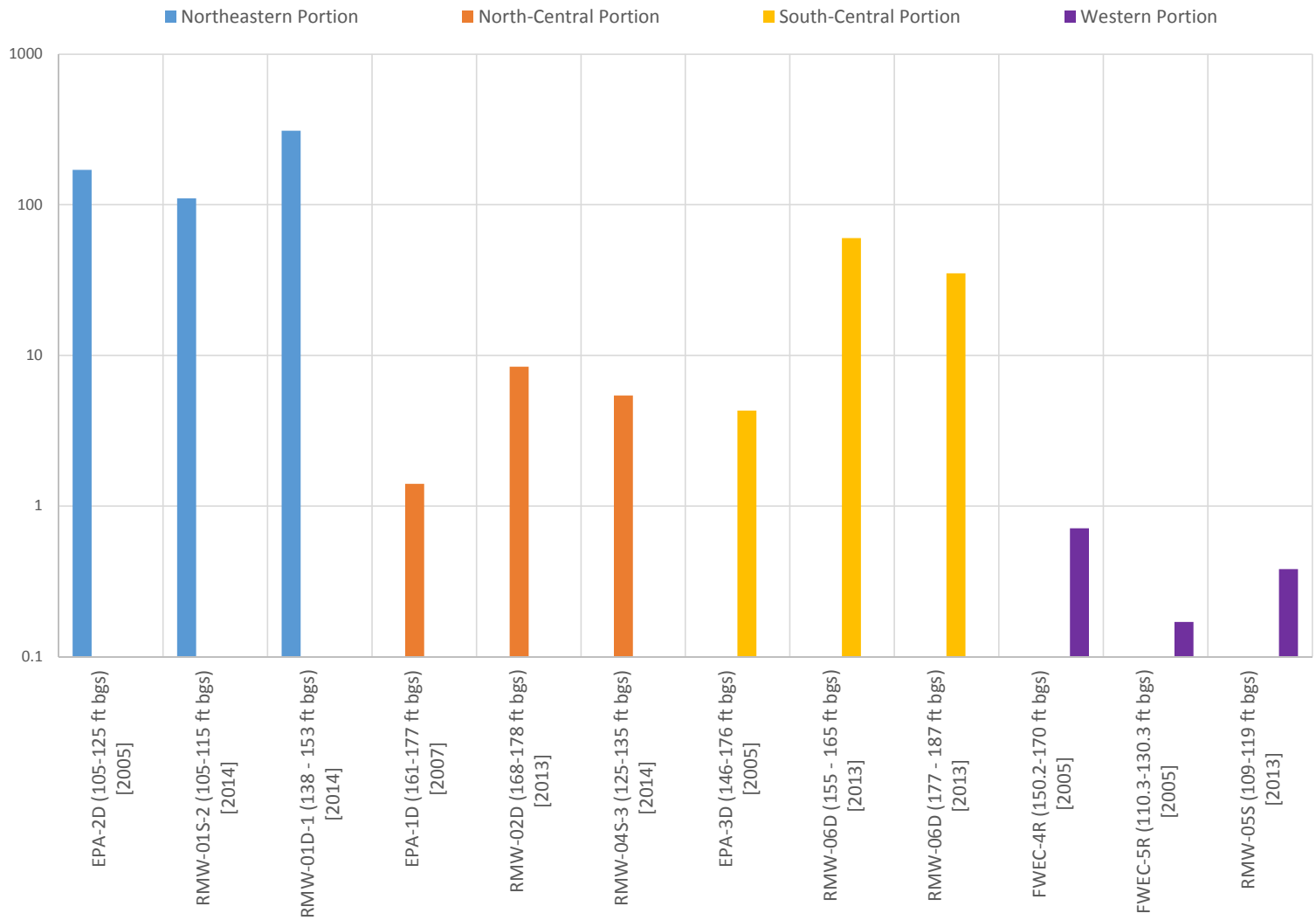






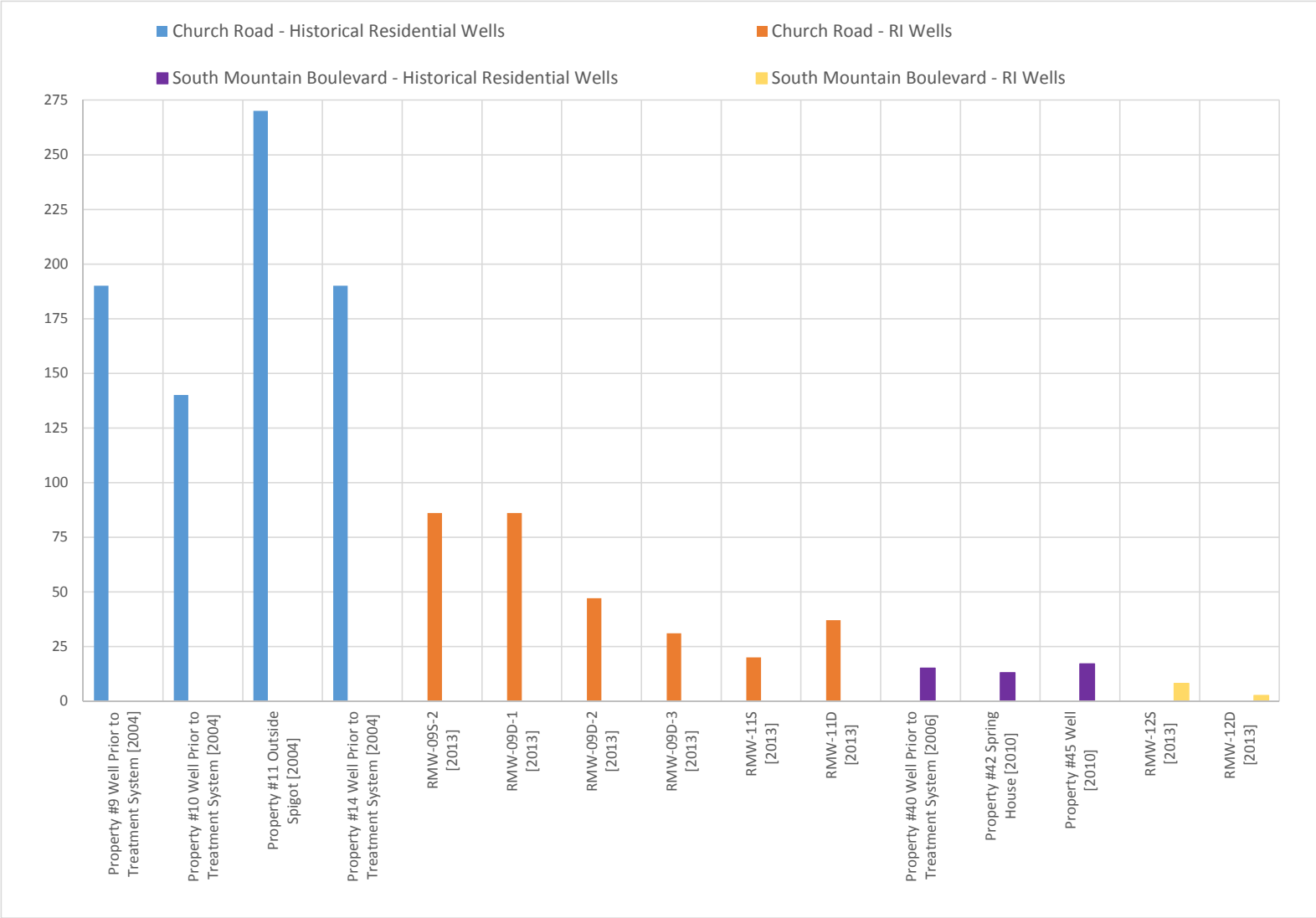
Notes:
TCE concentrations shown in ug/L (vertical axis).
Sampling dates are shown in years (horizontal axis).
Trendlines are shown as linear option with equation and R-square value provided.

FIGURE 5-3
Maximum Detected Concentrations within Similar Depth Intervals of Historic and RI Wells (Low-Flow Sampling Only) - Surrounding Industrial Properties
Mountain Top RI/FS
Mountain Top, Pennsylvania



Notes:
TCE concentrations are shown in ug/L on a logarithmic scale on the vertical axis.
Monitoring well identification, well interval (in curved parantheses) and date of low-flow methodology maximum value [in squared parantheses] are shown on the horizontal axis.

FIGURE 5-4
Maximum Detected Concentrations of Historic Residential Wells and RI Wells - Affected Area
Mountain Top RI/FS
Mountain Top, Pennsylvania



Notes:
TCE concentrations are shown in ug/L on the vertical axis.
Property identification with sampled location or monitoring well identification, and date of maximum value [in squared parantheses] are shown on the horizontal axis.