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Steven P. Stucker, C.P.G.
Lead Engineer
Environmental Department

August 30, 2013

Mr. Scott Deyette
Project Manager
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway
Albany, New York 12233-7014

Re: **Malone (Amsden Street) Former MGP Site**
Site #: V00469
IRM Pre-Design Investigation Report for Tax Parcel 98.81-1-4 (Former Carter Property, property now owned by Travis Pritchard)

Dear Mr. Deyette:

This letter presents findings of a pre-design investigation (PDI) at Tax Parcel 98.81-1-4 (a.k.a. Pritchard property) that was completed during the weeks of July 22 and July 29, 2013. The objective of the PDI was to further assess the absence/presence and distribution of manufactured gas plant- (MGP-) related wastes previously encountered in the subsurface soil on Tax Parcel 98.81-1-4 and along the adjacent riverbank, with the intent of defining the limits of removal to be performed as an Interim Remedial Measure (IRM). This tax parcel is located approximately 300 feet north of National Grid's Malone (Amsden Street) former MGP site (the Site) located at 25 Amsden Street in Malone, Franklin County, New York (Figure 1). The presence of MGP-related wastes on Tax Parcel 98.81-1-4 and the adjacent riverbank appears to be associated with the Site. The PDI was completed in accordance with a New York Department of Environmental Conservation- (NYSDEC-) approved work plan titled "IRM Pre-Design Investigation of Tax Parcel 98.81-1-4 (Carter Property)". The work plan was submitted to the NYSDEC on April 26, 2013, and the NYSDEC provided approval of the work plan as documented in a May 23, 2013 letter to National Grid.

The PDI consisted of three general activities:

- Property Boundary Survey
- Riverbank Reconnaissance and Removal of Tar Pieces
- Test Pit Excavation

A description of these activities is provided below.

Property Boundary Survey

The first activity completed during the PDI was a property boundary survey for Tax Parcel 98.81-1-4. The boundary survey was completed by Thew Associates of Canton, New York (Thew). The boundary survey consisted of visiting the Franklin County Clerk's office to obtain

copies of the deed for Tax Parcel 98.81-1-4 and adjoining parcels, and obtaining filed maps pertinent to establishing the boundary lines for the parcel. The information from the County Clerk's office was then used to establish site control and enable staking of the property corners and property lines. The results of the property boundary survey have been incorporated into the property lines shown on Figure 1. It should be noted that the eastern property line, as recorded on the deed, is represented by the edge of water for the Salmon River. As such, the position of this property line varies with the meander and stage of the river.

In addition to completing the boundary survey and staking the property line for the parcel, Thew also staked the locations of the test pits (CTP-1 through CTP-6, and CTP-2A through 2C) that were previously completed on the parcel. The previous test pits were staked to provide a frame of reference for locating the additional test pits discussed below.

All surveying was completed in reference to the following datum:

- Horizontal: North American Datum of 1983 (NAD83) projected on the New York State Plane Coordinate System (East Zone)

- Vertical: North American Vertical Datum of 1988 (NAVD88)

Riverbank Reconnaissance and Removal of Tar Pieces

Once the property boundaries were staked near the riverbank, a reconnaissance was conducted on the riverbank of Tax Parcel 98.81-1-4. The purpose of the reconnaissance was to visually assess the absence/presence and extent of surficial tar pieces on the riverbank, and if possible, manually remove the tar pieces for subsequent disposal. The vegetation along the riverbank was cleared to the extent practicable by Asplundh Tree Expert Co. (Asplundh) prior to conducting the reconnaissance to enable visual observation of the riverbank.

The reconnaissance was completed on July 25 and 26, 2013. A NYSDEC representative was not present during the reconnaissance; however, Mr. Scott Deyette (NYSDEC) was informed of the results of the reconnaissance on July 29, 2013 when he arrived at the property to observe the test pit excavations. Mr. Travis Pritchard and/or Mr. Tim Carter visited the property for several minutes each day to check on the status of the field work. The reconnaissance consisted of manually moving rocks/debris along the riverbank to facilitate determining the absence/presence and extent of tar pieces. The visual appearance and the extent of the tar pieces were recorded in a field notebook and photo-documented. Each tar piece, or grouping of tar pieces (if several were observed in close proximity to each other) were flagged for subsequent locating by a surveyor (Thew). Thew located and determined the grade elevation of the tar pieces on August 1, 2013. Photographs of the tar pieces encountered during the reconnaissance are provided in the photo-documentation log in Attachment A.

A total of twelve (12) areas containing tar piece(s) were observed. The locations of these areas are shown on Figure 1 as RBT-1 through RBT-12, and a detailed description of the observations at each area is provided in Table 1. As shown on Figure 1, pieces of tar were not observed north

of the northern property line or south of the southern property line. In general, the tar pieces ranged from approximately 1 to 10 inches in diameter, were hardened/stiff, and exhibited an MGP-like odor when broken apart. The exception was a tar patty that was observed at RBT-9. The tar at this location had a taffy-like appearance and measured approximately 1.5-feet diameter with an approximate 2-inch thickness. The tar at RBT-9 had an appearance similar to the tar observed at CTP-2 in August 2011.

All of the tar pieces observed along the riverbank were manually removed and placed in a NYSDOT-approved 55 gallon drum and stored on the Amsden Street Site for future treatment/disposal by National Grid. Two representative samples were collected from the tar pieces for laboratory analysis: one sample was collected from the taffy-like tar at RBT-9 (labeled as WC-Bank-1) and one sample was collected from the hardened tar pieces (labeled as WC-Bank-2). The samples were analyzed for the following parameters:

- Target Compound List (TCL) volatile organic compounds (VOCs)
- TCL semi-VOCs (SVOCs)
- Polychlorinated biphenyls (PCBs)
- Target Analyte List (TAL) Metals
- Percent Sulfur
- Total Petroleum Hydrocarbons (TPH [DRO/GRO])
- British Thermal Unit (BTU) value
- Total Cyanide
- Full Toxicity Characteristic Leaching Procedure (TCLP) analytes
- Ignitability
- Reactivity
- Corrosivity

The waste characterization results for these samples are provided in Table 2. These results will be evaluated to determine the proper disposal facility. These samples did not exhibit any hazardous characteristics and PCBs were not detected. It is anticipated that this waste will be disposed at the same time the IRM is completed on Tax Parcel 98.81-1-4.

Test Pit Excavation

Nine test pits (CTP-7 through CTP-15) were excavated on July 29, 2013. The locations of the test pits are shown on Figure 1. Mr. Scott Deyette (NYSDEC) was present during the excavations to assist with identifying MGP-related waste in the test pits, and provide concurrence on the presence/absence of MGP-waste in each test pit. Mr. Tim Carter also visited the property to observe the field work.

The test pits were excavated to supplement the information gathered from the previous test pits and further assess the absence/presence and distribution of MGP-related wastes on Tax Parcel 98.81-1-4. As shown on Figure 1, test pits CTP-7 through CTP-15 were excavated to the north and south, as well as in-between (perpendicular to), the previous test pits. One test pit, CTP-15,

was excavated west of CTP-2/CTP-2A/B/C at the NYSDEC's request in order to evaluate the potential presence of MGP-related waste immediately west of the north-south aligned sanitary sewer which runs just west of test pits CTP-1 through CTP-14. The test pits were excavated using a track-mounted excavator operated by OP-TECH Environmental Services, Inc. (OP-TECH) of Massena, New York.

Test pits were approximately 9 to 12 feet long and were excavated approximately one-half foot into the water table. The total depth of the pits ranged between 4.5 to 7 feet. Soils recovered from the test pits were visually characterized for soil type and presence of debris, odor, staining, and potential MGP-related wastes (if any) and screened using a photoionization detector (PID) to assess the presence of volatile organic vapors. Observations and measurements made at each test pit were recorded in a field notebook and each test pit was photo-documented. The observations made at each test pit are included on the test pit logs in Attachment B. Photographs of each test pit are provided in the photo-documentation log in Attachment A.

One test pit was also excavated at the location of existing test pit CTP-2. This test pit was excavated to facilitate collection of a representative waste characterization sample (WC-CTP-2) at this location. The sample was analyzed for the same suite of parameters listed above for the riverbank tar pieces. The sampling results are provided in Table 2. These results will be evaluated to determine the proper disposal facility (to be discussed in the forthcoming IRM Work Plan).

Each test pit was backfilled using material excavated from that test pit. The material was returned to the test pit in the approximately order from which it was removed. Thew located and determined the grade elevation of completed test pits on August 1, 2013.

Fill materials were encountered at the surface of every test pit, and the thickness of the fill ranged between approximately 2 to 5 feet. The composition of the fill was relatively consistent between test pits, and was comprised of fine to coarse sand and gravel with cobbles, boulders, and a varying degree of anthropogenic materials (e.g., glass, metal, wood, cloth, paper, plastic, brick). A finer-grained deposit of fine to medium sand with decayed wood was observed below the fill in four of the test pits (CTP-10, CTP-11, CTP-13, and CTP-15). This deposit was observed at the approximate river level, and was likely emplaced by river activities..

Potential MGP-related wastes were not observed by personnel on-site in any test pits. A faint petroleum-like odor and grey stained soil was observed at test pit CTP-10 at approximately 4 to 6 feet below grade; however, the PID did not detect any volatile organic vapors from this material.

Conclusions and Recommendations

The tar pieces observed on the riverbank were within the limits of the property boundary of Tax Parcel 98.81-1-4 (i.e., tar pieces were not observed on the riverbank to the north or south of the property boundary). All readily observable tar pieces were removed from the riverbank during the PDI. National Grid recognizes that additional tar pieces may be exposed due to riverbank erosion.

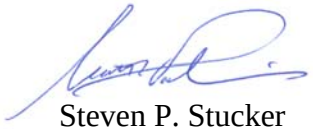
Since MGP-related wastes were not observed in the nine additional test pits, National Grid concludes that the distribution of subsurface tar on Tax Parcel 98.81-1-4 is not widespread, but is isolated to a few areas:

- CTP-1, where two softball sized pieces of hardened tar were observed in August 2011;
- Test pits CTP-2, CTP-2A, and CTP-2B, where an approximate 6-inch layer of taffy-like tar was observed at approximately 4.5 to 5 feet below grade in August 2011; and
- Scattered as small pieces of tar along the riverbank.

These limited areas impacted by MGP waste shall be addressed in a forthcoming IRM Work Plan following concurrence by all appropriate parties. National Grid will provide this work plan to address the subsurface tar on Tax Parcel 98.81-1-4 within approximately 30 days after receiving the NYSDEC's written concurrence on this recommendation.

Please contact me by phone at 315-428-5652 or by e-mail at Steven.Stucker@us.ngrid.com if you have any questions.

Sincerely,



, for
Steven P. Stucker
Environmental Department

Attachments

cc: Deanna Ripstein, NYSDOH
Michael Moore, Young/Sommer LLC (Carter Property)
John Parkinson, National Grid
Brian Stearns, National Grid
Travis Pritchard
Scott Powlin, ARCADIS
Cathy Geraci, ARCADIS

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Tables

TABLE 1
RIVERBANK RECONNAISSANCE ON TAX PARCEL 98.81-1-4 – OBSERVATION OF TAR PIECES ON JULY 25 AND 26, 2013

IRM PRE-DESIGN INVESTIGATION OF TAX PARCEL 98.81-1-4
NATIONAL GRID
MALONE (AMSDEN STREET) FORMER MGP
MALONE, NEW YORK

Observation Location	Distance South of Northern Property Line (ft)	Distance from Water's Edge (ft)	Description
RBT-1	5	3	Four pieces of hardened tar; each piece 2" to 3" diameter; flat.
RBT-2	20	6	One piece of hardened tar; 3" diameter: flat: embedded fabric.
RBT-3	33	2	Five pieces of hardened tar; 1" diameter; round.
RBT-4	41	8	Three pieces of hardened tar; 2" to 3" diameter; moss covered.
RBT-5	44	4	Three pieces of hardened tar; 1" to 3" diameter.
RBT-6	59	9	One piece of hardened tar; 5" diameter; round.
RBT-7	131	4	Eleven pieces of hardened tar; 1" to 3" diameter.
RBT-8	169	4	Eleven pieces of hardened tar; 1" to 3" diameter; at base of ash tree.
RBT-9	215	3	One tar patty; taffy-like; ~ 1.5' oval; 2" thick; embedded in bank.
RBT-10	276	3	Eight pieces of hardened tar; seven pieces 1" to 3"; one piece 6" to 10".
RBT-11	311	10	One piece of hardened tar at top of bank; 2" diameter.
RBT-12	102	5	Three pieces of hardened tar; 1" to 2" diameter.

Notes:
ft = feet
" = inch
 = foot

TABLE 2
WASTE CHARACTERIZATION SAMPLING RESULTS

IRM PRE-DESIGN INVESTIGATION OF TAX PARCEL 98.81-1-4
NATIONAL GRID
MALONE (AMSDEN STREET) FORMER MGP
MALONE, NEW YORK

Location ID: / Date Collected:	Units	WC-Bank-1 07/29/13	WC-Bank-2 07/29/13	WC-CTP-2 07/29/13
PCBs				
Aroclor-1016	mg/kg	0.046 U	0.041 U	0.048 U
Aroclor-1221	mg/kg	0.046 U	0.041 U	0.048 U
Aroclor-1232	mg/kg	0.046 U	0.041 U	0.048 U
Aroclor-1242	mg/kg	0.046 U	0.041 U	0.048 U
Aroclor-1248	mg/kg	0.046 U	0.041 U	0.048 U
Aroclor-1254	mg/kg	0.11 U	0.099 U	0.11 U
Aroclor-1260	mg/kg	0.11 U	0.099 U	0.11 U
Volatile Organics				
1,1,1-Trichloroethane	mg/kg	1.1 U	0.12 U	0.00043 U
1,1,2,2-Tetrachloroethane	mg/kg	0.64 U	0.069 U	0.00095 U
1,1,2-trichloro-1,2,2-trifluoroethane	mg/kg	2.0 U	0.21 U	0.0013 U
1,1,2-Trichloroethane	mg/kg	0.82 U	0.089 U	0.00076 U
1,1-Dichloroethane	mg/kg	1.2 U*	0.13 U*	0.00072 U
1,1-Dichloroethene	mg/kg	1.4 U*	0.15 U*	0.00072 U
1,2,4-Trichlorobenzene	mg/kg	1.5 U	0.16 U	0.00036 U
1,2-Dibromo-3-chloropropane	mg/kg	2.0 U	0.21 U	0.0029 U
1,2-Dibromoethane	mg/kg	0.15 U	0.016 U	0.00075 U
1,2-Dichlorobenzene	mg/kg	1.0 U*	0.11 U*	0.00046 U
1,2-Dichloroethane	mg/kg	1.6 U*	0.17 U*	0.00029 U
1,2-Dichloropropane	mg/kg	0.64 U	0.069 U	0.0029 U
1,3-Dichlorobenzene	mg/kg	1.0 U	0.11 U	0.00030 U
1,4-Dichlorobenzene	mg/kg	0.55 U	0.059 U	0.00082 U
2-Butanone	mg/kg	12 U	1.3 U	0.0022 U
2-Hexanone	mg/kg	8.0 U	0.87 U	0.0029 U
4-Methyl-2-pentanone	mg/kg	1.3 U	0.14 U	0.0019 U
Acetone	mg/kg	16 U	1.7 U	0.0049 U
Benzene	mg/kg	16 *	0.51 *	0.00029 U
Bromodichloromethane	mg/kg	0.78 U	0.085 U	0.00079 U
Bromoform	mg/kg	2.0 U	0.21 U	0.0029 U
Bromomethane	mg/kg	0.86 U	0.093 U	0.00053 U
Carbon Disulfide	mg/kg	1.8 U	0.61	0.0029 U
Carbon Tetrachloride	mg/kg	1.0 U	0.11 U	0.00057 U
Chlorobenzene	mg/kg	0.52 U*	0.056 U*	0.00078 U
Chloroethane	mg/kg	0.82 U	0.088 U	0.0013 U
Chloroform	mg/kg	2.7 U	0.29 U	0.00036 U
Chloromethane	mg/kg	0.93 U	0.10 U	0.00035 U
cis-1,2-Dichloroethene	mg/kg	1.1 U*	0.12 U*	0.00075 U
cis-1,3-Dichloropropene	mg/kg	0.94 U	0.10 U	0.00085 U
Cyclohexane	mg/kg	0.87 U	0.094 U	0.00082 U
Dibromochloromethane	mg/kg	1.9 U	0.20 U	0.00075 U
Dichlorodifluoromethane	mg/kg	1.7 U	0.18 U	0.00049 U
Ethylbenzene	mg/kg	1.1 U*	0.12 U*	0.00041 U
Isopropylbenzene	mg/kg	0.59 U	0.064 U	0.00089 U
Methyl acetate	mg/kg	1.9 U	0.20 U	0.0011 U*
Methyl tert-butyl ether	mg/kg	1.5 U*	0.16 U*	0.00058 U
Methylcyclohexane	mg/kg	1.8 U	0.20 U	0.00089 U
Methylene Chloride	mg/kg	0.78 U	0.084 U	0.0027 U
Styrene	mg/kg	2.7 J	0.10 U	0.00029 U
Tetrachloroethene	mg/kg	0.53 U*	0.057 U*	0.00079 U
Toluene	mg/kg	9.0 *	0.33 J*	0.00044 U
trans-1,2-Dichloroethene	mg/kg	0.93 U*	0.10 U*	0.00061 U
trans-1,3-Dichloropropene	mg/kg	0.19 U	0.020 U	0.0026 U
Trichloroethene	mg/kg	1.1 U*	0.12 U*	0.0013 U
Trichlorofluoromethane	mg/kg	1.8 U	0.20 U	0.00056 U
Vinyl Chloride	mg/kg	1.3 U	0.14 U	0.00072 U
Xylenes (total)	mg/kg	15	0.31 J	0.00099 U
Total BTEX	mg/kg	40	1.2 J	ND

See Notes on Page 4.

TABLE 2
WASTE CHARACTERIZATION SAMPLING RESULTS

IRM PRE-DESIGN INVESTIGATION OF TAX PARCEL 98.81-1-4
NATIONAL GRID
MALONE (AMSDEN STREET) FORMER MGP
MALONE, NEW YORK

Location ID: / Date Collected:	Units	WC-Bank-1 07/29/13	WC-Bank-2 07/29/13	WC-CTP-2 07/29/13
VOCs TCLP				
1,1-Dichloroethene	mg/L	0.0029 U	0.0029 U	0.0029 U
1,2-Dichloroethane	mg/L	0.0021 U	0.0021 U	0.0021 U
2-Butanone	mg/L	0.013 U	0.013 U	0.013 U
Benzene	mg/L	0.38	0.0049 J	0.0041 U
Carbon Tetrachloride	mg/L	0.0027 U	0.0027 U	0.0027 U
Chlorobenzene	mg/L	0.0075 U	0.0075 U	0.0075 U
Chloroform	mg/L	0.0034 U	0.0034 U	0.0034 U
Tetrachloroethene	mg/L	0.0036 U	0.0036 U	0.0036 U
Trichloroethene	mg/L	0.0046 U	0.0046 U	0.0046 U
Vinyl Chloride	mg/L	0.009 U	0.009 U	0.009 U
Semivolatile Organics				
1,1'-Biphenyl	mg/kg	810 J	3.3 U	0.061 U
2,2'-Oxybis(1-Chloropropane)	mg/kg	240 U	5.6 U	0.10 U
2,4,5-Trichlorophenol	mg/kg	490 U	12 U	0.21 U
2,4,6-Trichlorophenol	mg/kg	150 U	3.5 U	0.065 U
2,4-Dichlorophenol	mg/kg	120 U	2.8 U	0.052 U
2,4-Dimethylphenol	mg/kg	610 U	14 U	0.27 U
2,4-Dinitrophenol	mg/kg	790 U	19 U	0.34 U
2,4-Dinitrotoluene	mg/kg	350 U	8.3 U	0.15 U
2,6-Dinitrotoluene	mg/kg	560 U	13 U	0.24 U
2-Chloronaphthalene	mg/kg	150 U	3.6 U	0.066 U
2-Chlorophenol	mg/kg	120 U	2.7 U	0.050 U
2-Methylphenol	mg/kg	70 U	1.6 U	0.030 U
2-Nitroaniline	mg/kg	730 U	17 U	0.32 U
2-Nitrophenol	mg/kg	100 U	2.4 U	0.045 U
3,3'-Dichlorobenzidine	mg/kg	2,000 U	47 U	0.86 U
3-Nitroaniline	mg/kg	520 U	12 U	0.23 U
4,6-Dinitro-2-methylphenol	mg/kg	780 U	18 U	0.34 U
4-Bromophenyl-phenylether	mg/kg	720 U	17 U	0.31 U
4-Chloro-3-Methylphenol	mg/kg	93 U	2.2 U	0.040 U
4-Chloroaniline	mg/kg	670 U	16 U	0.29 U
4-Chlorophenyl-phenylether	mg/kg	48 U	1.1 U	0.021 U
4-Methylphenol	mg/kg	130 U	3.0 U	0.055 U
4-Nitroaniline	mg/kg	250 U	6.0 U	0.11 U
4-Nitrophenol	mg/kg	550 U	13 U	0.24 U
Acetophenone	mg/kg	120 U	2.7 U	0.051 U
Atrazine	mg/kg	100 U	2.4 U	0.044 U
Benzaldehyde	mg/kg	250 U	5.9 U	0.11 U
bis(2-Chloroethoxy)methane	mg/kg	120 U	2.9 U	0.054 U
bis(2-Chloroethyl)ether	mg/kg	200 U	4.6 U	0.085 U
bis(2-Ethylhexyl)phthalate	mg/kg	730 U	17 U	0.32 U
Butylbenzylphthalate	mg/kg	610 U	14 U	0.26 U
Caprolactam	mg/kg	980 U	23 U	0.43 U
Carbazole	mg/kg	2,100 J	18 J	0.011 U
Dibenzofuran	mg/kg	3,400	56	0.039 J
Diethylphthalate	mg/kg	69 U	1.6 U	0.030 U
Dimethylphthalate	mg/kg	59 U	1.4 U	0.026 U
Di-n-Butylphthalate	mg/kg	780 U	18 U	0.34 U
Di-n-Octylphthalate	mg/kg	53 U	1.2 U	0.023 U
Hexachlorobenzene	mg/kg	110 U	2.7 U	0.049 U
Hexachlorobutadiene	mg/kg	120 U	2.7 U	0.050 U
Hexachlorocyclopentadiene	mg/kg	690 U	16 U	0.30 U
Hexachloroethane	mg/kg	180 U	4.1 U	0.076 U
Isophorone	mg/kg	110 U	2.7 U	0.049 U
Nitrobenzene	mg/kg	100 U	2.4 U	0.044 U
N-Nitroso-di-n-propylamine	mg/kg	180 U	4.2 U	0.078 U
N-Nitrosodiphenylamine	mg/kg	120 U	2.9 U	0.054 U
Pentachlorophenol	mg/kg	780 U	18 U	0.34 U
Phenol	mg/kg	240 U	5.6 U	0.10 U

See Notes on Page 4.

TABLE 2
WASTE CHARACTERIZATION SAMPLING RESULTS

IRM PRE-DESIGN INVESTIGATION OF TAX PARCEL 98.81-1-4
NATIONAL GRID
MALONE (AMSDEN STREET) FORMER MGP
MALONE, NEW YORK

Location ID: / Date Collected:	Units	WC-Bank-1 07/29/13	WC-Bank-2 07/29/13	WC-CTP-2 07/29/13
Semivolatile Organics (Cont.)				
2-Methylnaphthalene	mg/kg	2,800	13 J	0.16 J
Acenaphthene	mg/kg	990 JB	27 JB	0.028 JB
Acenaphthylene	mg/kg	5,800	110	0.16 J
Anthracene	mg/kg	5,600	650	0.11 J
Benzo(a)anthracene	mg/kg	3,600	1,100	0.43 J
Benzo(a)pyrene	mg/kg	3,700	1,100	0.44 J
Benzo(b)fluoranthene	mg/kg	4,100	1,200	0.60 J
Benzo(g,h,i)perylene	mg/kg	3,800	540	0.22 J
Benzo(k)fluoranthene	mg/kg	1,800 J	600	0.24 J
Chrysene	mg/kg	3,400	960	0.44 J
Dibenzo(a,h)anthracene	mg/kg	460 J	130	0.055 J
Fluoranthene	mg/kg	13,000 B	3,100 B	0.84 JB
Fluorene	mg/kg	4,000	160	0.045 J
Indeno(1,2,3-cd)pyrene	mg/kg	2,500	490	0.19 J
Naphthalene	mg/kg	14,000	55	1.5
Phenanthrene	mg/kg	19,000 B	1,200 B	0.35 JB
Pyrene	mg/kg	11,000 B	2,400 B	0.60 JB
Total PAHs	mg/kg	100,000 J	14,000 J	6.4 J
SVOCs TCLP				
1,4-Dichlorobenzene	mg/L	0.0092 U	0.00046 U	0.00046 U
2,4,5-Trichlorophenol	mg/L	0.0096 U	0.00048 U	0.00048 U
2,4,6-Trichlorophenol	mg/L	0.012 U	0.00061 U	0.00061 U
2,4-Dinitrotoluene	mg/L	0.0089 U	0.00045 U	0.00045 U
2-Methylphenol	mg/L	1.4	0.0004 U	0.0004 U
3-Methylphenol	mg/L	3.4	0.0016 J	0.0004 U
4-Methylphenol	mg/L	3.4	0.0016 J	0.00036 U
Hexachlorobenzene	mg/L	0.01 U	0.00051 U	0.00051 U
Hexachlorobutadiene	mg/L	0.014 U	0.00068 U	0.00068 U
Hexachloroethane	mg/L	0.012 U	0.00059 U	0.00059 U
Nitrobenzene	mg/L	0.0058 U	0.00029 U	0.00029 U
Pentachlorophenol	mg/L	0.044 U	0.0022 U	0.0022 U
Pyridine	mg/L	0.0082 U	0.00041 U	0.00041 U
Inorganics				
Aluminum	mg/kg	39.7	807	3,520
Antimony	mg/kg	0.440 U	0.440 U	2.10 J
Arsenic	mg/kg	0.440 U	1.00 J	6.40
Barium	mg/kg	0.330 J	14.5	120
Beryllium	mg/kg	0.0310 U	0.0720 J	0.210 J
Cadmium	mg/kg	0.0330 U	0.0990 J	4.40
Calcium	mg/kg	62.7 B	754 B	4,690 B
Chromium	mg/kg	0.220 U	2.10	15.3
Cobalt	mg/kg	0.0550 U	0.530 J	2.00
Copper	mg/kg	0.290 J	9.40	109
Cyanide	mg/kg	2.2	1.1	1.1
Iron	mg/kg	83.9 B	2,030 B	11,200 B
Lead	mg/kg	0.980 J	34.2	307
Magnesium	mg/kg	22.0 B	172 B	1,030 B
Manganese	mg/kg	1.70	42.2	133
Mercury	mg/kg	0.00830 U	0.0980	7.00
Nickel	mg/kg	0.250 U	1.30 J	8.30
Potassium	mg/kg	23.8 J	91.5	278
Selenium	mg/kg	0.440 U	0.440 U	1.40 J
Silver	mg/kg	0.220 U	0.220 U	1.90
Sodium	mg/kg	14.2 U	23.9 JB	117 JB
Thallium	mg/kg	0.330 U	0.330 U	0.320 U
Vanadium	mg/kg	0.120 U	2.10	7.70
Zinc	mg/kg	16.5 B	50.4 B	912 B

See Notes on Page 4.

TABLE 2
WASTE CHARACTERIZATION SAMPLING RESULTS

IRM PRE-DESIGN INVESTIGATION OF TAX PARCEL 98.81-1-4
NATIONAL GRID
MALONE (AMSDEN STREET) FORMER MGP
MALONE, NEW YORK

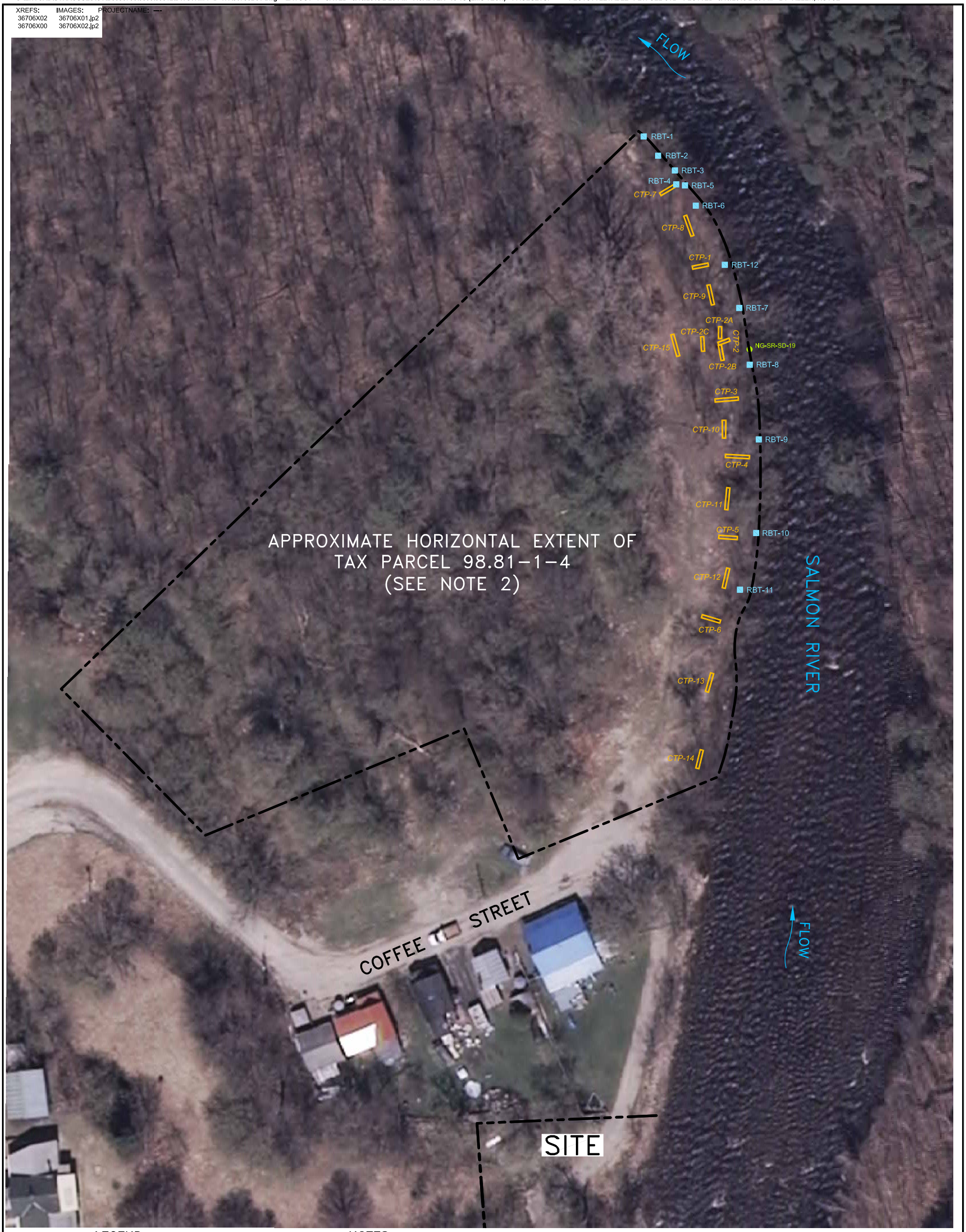
Location ID: / Date Collected:	Units	WC-Bank-1 07/29/13	WC-Bank-2 07/29/13	WC-CTP-2 07/29/13
Inorganics TCLP				
Arsenic	mg/L	0.0056 U	0.0061 J	0.0064 J
Barium	mg/L	0.068 B	0.18 B	1.5 B
Cadmium	mg/L	0.0024	0.0018	0.044
Chromium	mg/L	0.0013 JB	0.0014 JB	0.0025 JB
Lead	mg/L	0.015	0.12	0.6
Mercury	mg/L	0.00012 U	0.00012 U	0.00012 U
Selenium	mg/L	0.0087 U	0.0087 U	0.0087 U
Silver	mg/L	0.0017 U	0.0017 U	0.0017 U
Miscellaneous				
BTU	BTU/lb	11,600	2,720	200 U
corrosivity by pH	SU	6.63	6.77	7.62
Flashpoint	Degrees F	NA	NA	NA
Percent Total Sulfur	% by dwt	0.4	0.25	0.17
Reactive Cyanide	mg/kg	15.8	0.00300 U	0.00300 U
Reactive Sulfide	mg/kg	0.57 U	0.57 U	0.57 U
Gasoline Range Organics				
Diesel Range Organics [C10-C28]	mg/kg	55,000	22,000	31
GRO (C6-C10)	mg/kg	7.2 U	100	0.17 U
Pesticides TCLP				
Endrin	mg/L	0.000069 U	0.000069 U	0.000014 U
Gamma-BHC (Lindane)	mg/L	0.00003 U	0.00003 U	0.000006 U
Heptachlor	mg/L	0.000043 U	0.000043 U	0.0000085 U
Heptachlor Epoxide	mg/L	0.000027 U	0.000027 U	0.0000053 U
Methoxychlor	mg/L	0.000071 U	0.000071 U	0.000014 U
Technical Chlordane	mg/L	0.00015 U	0.00015 U	0.000029 U
Toxaphene	mg/L	0.0006 U	0.0006 U	0.00012 U
Herbicides TCLP				
2,4,5-TP	mg/L	0.00036 U	0.00036 U	0.00036 U
2,4-D	mg/L	0.0004 U	0.0004 U	0.0004 U

Qualifier Type	Lab Qualifiers	Definition
Inorganic	B	Indicates an estimated value between the instrument detection limit and the
Inorganic	J	Indicates an estimated value.
Inorganic	U	The compound was analyzed for but not detected. The associated value is the
Organic	*	LCS or LCSD exceeds the control limits.
Organic	B	Analyte was also detected in the associated method blank.
Organic	J	Indicates an estimated value.
Organic	ND	None detected.
Organic	U	The compound was analyzed for but not detected. The associated value is the

Figure

CITY: SYRACUSE, N.Y . DIV/GROUP: ENV/IM-DV DB: B. DECLERCQ, R. ALLEN PM: S. POWLIN
G:\ENVCAD\SYRACUSE\ACT\B0036706\0000\00012\DWG\IRM-P-D-INV\36706B01.dwg LAYOUT: 1 SAVED: 8/19/2013 2:26 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: --- PLOTSTYLETABLE: PLTFULL.CTB PLOTTED: 8/19/2013 2:26 PM BY: ALLEN, ROYCE

XREFS: 36706X02 36706X00
IMAGES: 36706X01.jp2 36706X02.jp2
PROJECTNAME: ---



LEGEND:

- SEDIMENT SAMPLE LOCATION
- APPROXIMATE HORIZONTAL EXTENT OF TAX PARCEL 98.81-1-4 (SEE NOTE 2)
- TEST PIT LOCATION
- TAR PIECE(S) OBSERVED ON RIVER BANK

NOTES:

1. AERIAL PHOTOGRAPHS OBTAINED FROM THE NEW YORK STATE GEOGRAPHIC INFORMATION SYSTEM (NYS GIS) WEBSITE DATED 2008.
2. PROPERTY LINES FOR TAX PARCEL 98.81-1-4 BASED ON A SURVEY PERFORMED BY THEW ASSOCIATES LAND SURVEYORS, DATED 8/16/13.

0 60' 120'
GRAPHIC SCALE

NATIONAL GRID • MALONE, NEW YORK
MALONE (AMSDEN STREET) FORMER MGP SITE
IRM PRE-DESIGN INVESTIGATION - TAX PARCEL 98.81-1-4

INVESTIGATION LOCATIONS

ARCADIS

FIGURE 1

Attachment A

Photo-Documentation Log

Riverbank Tar Photos

RBT-1

RBT-2

RBT-3

RBT-4

RBT-5

RBT-6

RBT-7

RBT-8

RBT-9

RBT-10

RBT-11

No picture taken.

RBT-12

Test Pit Photos

CTP-7

CTP-8

CTP-9

CTP-10

CTP-11

CTP-12

CTP-13

CTP-14

CTP-15

Attachment B

Test Pit Logs

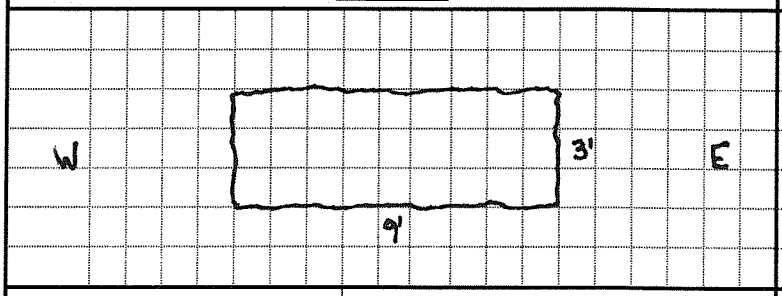
Test Pit Log

Test Pit ID: CTP-7

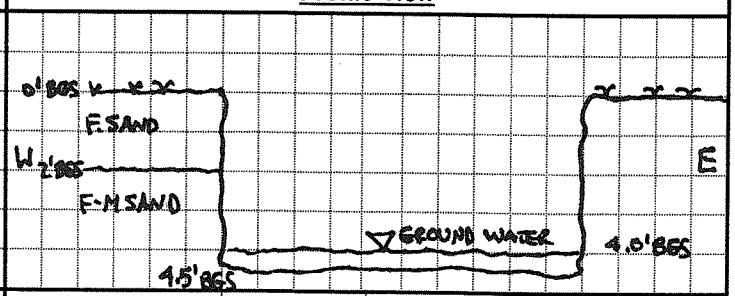
Client:	National Grid	**Date:**	7/29/2013
Project:	Coffee Street	**Weather:**	Sun and Clouds
Location:	Malone, NY	**Temperature:**	80 F
Project #:	B0036706.0000.00012	**Wind:**	SW to NE
Geologist:	Marcus Eriksson	**Subcontractor:**	Op Tech
Coordinates:		**Equipment:**	Excavator

Sketch of Test Pit Layout:

Plan View



Profile View



Test Pit Dimensions:	**3' wide x 9' long**	**Total Depth:**	**4.5' bgs.**
Depth to Water:	**4' bgs**		

Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material	Samples Collected
0.0 – 2.0	0.0	Brown fine SAND, little Silt, fine to coarse subangular Gravel, Organics (roots), trace Metal (M,NP).	NA
2.0 – 4.5	0.0	Brown fine to medium SAND, little to some fine to coarse subrounded Gravel, little red Brick, Glass (M,NP).	NA

Notes:

NA = Not Available/Applicable; bgs = below ground surface; M = moist; S = saturated; NP = non-plastic.

Photograph Summary:

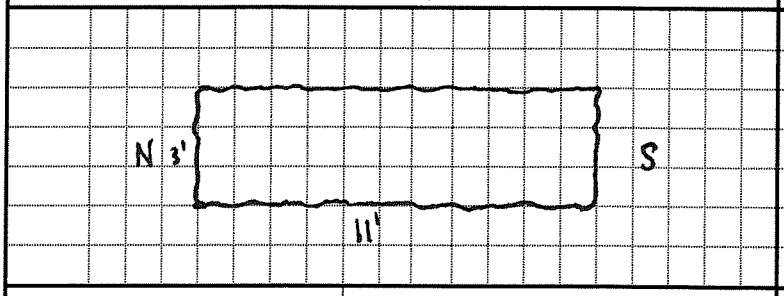
Test Pit Log

Test Pit ID: CTP-8

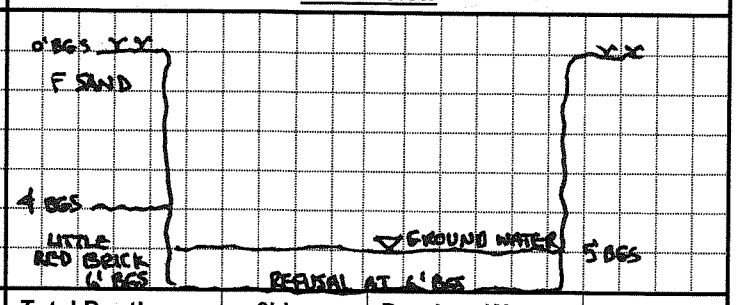
Client:	National Grid	**Date:**	7/29/2013
Project:	Coffee Street	**Weather:**	Sun and Clouds
Location:	Malone, NY	**Temperature:**	80 F
Project #:	B0036706.0000.00012	**Wind:**	SW to NE
Geologist:	Marcus Eriksson	**Subcontractor:**	Op Tech
Coordinates:		**Equipment:**	Excavator

Sketch of Test Pit Layout:

Plan View



Profile View



Test Pit Dimensions:	**3' wide x 11' long**	**Total Depth:**	**6' bgs.**	**Depth to Water:**	**5' bgs**

Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material	Samples Collected
0.0 – 6.0	0.0	Brown fine SAND, little fine to medium subangular Gravel, Organics (roots), little red Brick increases with depth, subround Cobbles increase with depth (M,NP).	NA

Notes:

NA = Not Available/Applicable; bgs = below ground surface; M = moist; S = saturated; NP = non-plastic.

Photograph Summary:

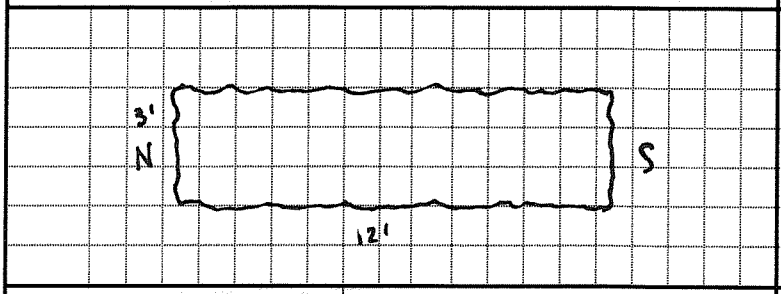
Test Pit Log

Test Pit ID: CTP-9

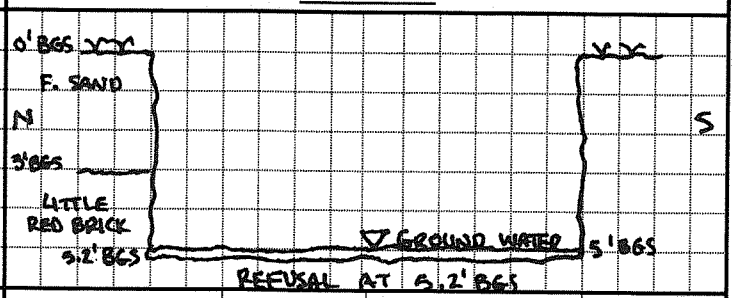
Client:	National Grid	**Date:**	7/29/2013
Project:	Coffee Street	**Weather:**	Sun and Clouds
Location:	Malone, NY	**Temperature:**	80 F
Project #:	B0036706.0000.00012	**Wind:**	SW to NE
Geologist:	Marcus Eriksson	**Subcontractor:**	Op Tech
Coordinates:		**Equipment:**	Excavator

Sketch of Test Pit Layout:

Plan View



Profile View



Test Pit Dimensions:	**3' wide x 12' long**	**Total Depth:**	**5.2' bgs.**	**Depth to Water:**	**5' bgs**

Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material	Samples Collected
0.0 – 5.2	0.0	Brown fine SAND, little fine to medium subangular Gravel, Organics (roots), Glass (bottles), little red Brick (3-3.5' bgs.), trace fire Brick, subround Cobbles increase with depth (M,NP).	NA

Notes:

NA = Not Available/Applicable; bgs = below ground surface; M = moist; S = saturated; NP = non-plastic.

Photograph Summary:

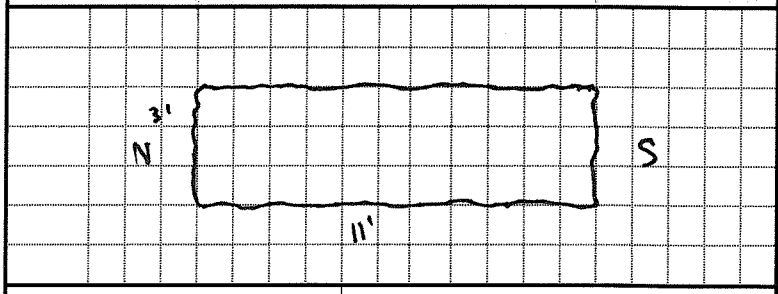
Test Pit Log

Test Pit ID: CTP-10

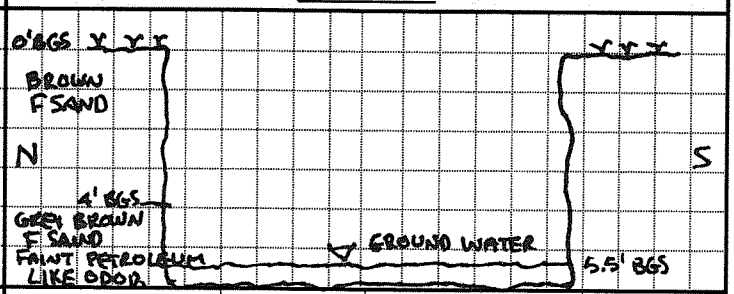
Client:	National Grid	**Date:**	7/29/2013
Project:	Coffee Street	**Weather:**	Sun and Clouds
Location:	Malone, NY	**Temperature:**	80 F
Project #:	B0036706.0000.00012	**Wind:**	SW to NE
Geologist:	Marcus Eriksson	**Subcontractor:**	Op Tech
Coordinates:		**Equipment:**	Excavator

Sketch of Test Pit Layout:

Plan View



Profile View



Test Pit Dimensions:	**3' wide x 11' long**	**Total Depth:**	**6' bgs.**
Depth to Water:	**5.5' bgs**		

Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material	Samples Collected
0.0 – 4.0	0.0	Brown fine SAND, little fine to coarse subangular to subrounded Gravel, Glass, Metal, Asphalt (shingles), Organics (roots, wood) (M,NP).	NA
4.0 – 6.0	0.0	Grey/brown fine SAND, little to some Silt, Organics (roots) (M,NP). *faint Petroleum-like odor, trace Grey/dark staining.	NA

Notes:

NA = Not Available/Applicable; bgs = below ground surface; M = moist; S = saturated; NP = non-plastic.

Photograph Summary:

ARCADIS

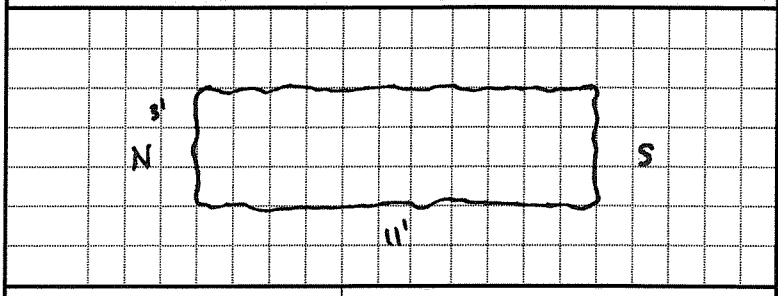
Test Pit Log

Test Pit ID: CTP-11

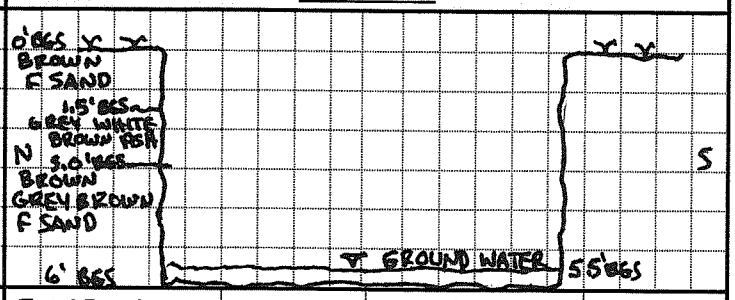
Client:	National Grid	**Date:**	7/29/2013
Project:	Coffee Street	**Weather:**	Sun and Clouds
Location:	Malone, NY	**Temperature:**	80 F
Project #:	B0036706.0000.00012	**Wind:**	SW to NE
Geologist:	Marcus Eriksson	**Subcontractor:**	Op Tech
Coordinates:		**Equipment:**	Excavator

Sketch of Test Pit Layout:

Plan View



Profile View



Test Pit Dimensions:	3' wide x 11' long	**Total Depth:**	6' bgs.
Depth to Water:	5.5' bgs		

Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material	Samples Collected
0.0 – 1.5	0.0	Brown fine SAND, little fine to coarse subangular Gravel, Organics, black Matting (silt fence), Glass (M,NP).	NA
1.5 – 3.0	0.0	Grey/white/brown ASH, little fine Sand (M,NP).	NA
3.0 – 6.0	0.0	Brown/grey fine SAND, little fine to coarse subrounded Gravel, little Organics (roots).	NA

Notes:

NA = Not Available/Applicable; bgs = below ground surface; M = moist; S = saturated; NP = non-plastic.

Photograph Summary:

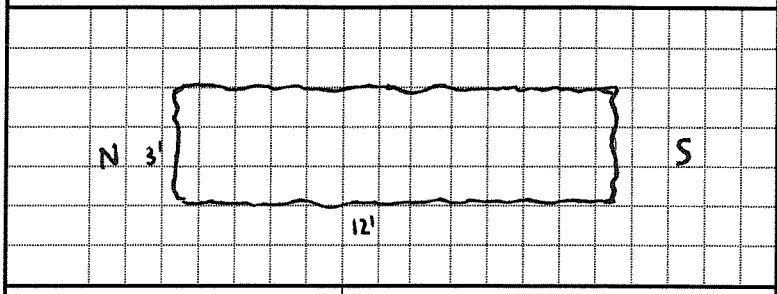
Test Pit Log

Test Pit ID: CTP-12

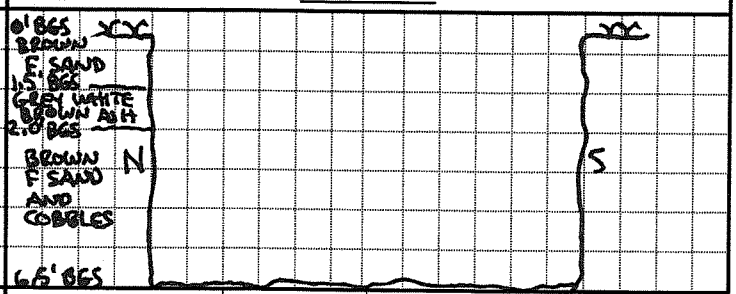
Client:	National Grid	**Date:**	7/29/2013
Project:	Coffee Street	**Weather:**	Sun and Clouds
Location:	Malone, NY	**Temperature:**	80 F
Project #:	B0036706.0000.00012	**Wind:**	SW to NE
Geologist:	Marcus Eriksson	**Subcontractor:**	Op Tech
Coordinates:		**Equipment:**	Excavator

Sketch of Test Pit Layout:

Plan View



Profile View



Test Pit Dimensions:	**3' wide x 12' long**	**Total Depth:**	**6.5' bgs.**	**Depth to Water:**	**NA**

Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material	Samples Collected
0.0 – 1.5	0.0	Brown fine SAND, little fine to coarse subangular Gravel, Organics (roots), Glass (bottles), Metal, Silt (M,NP).	NA
1.5 – 2.0	0.0	Grey/white/brown ASH, little fine Sand (M,NP).	NA
2.0 – 6.5	0.0	Brown fine SAND and COBBLES, little Silt (M,NP).	NA

Notes:

NA = Not Available/Applicable; bgs = below ground surface; M = moist; S = saturated; NP = non-plastic.

Photograph Summary:

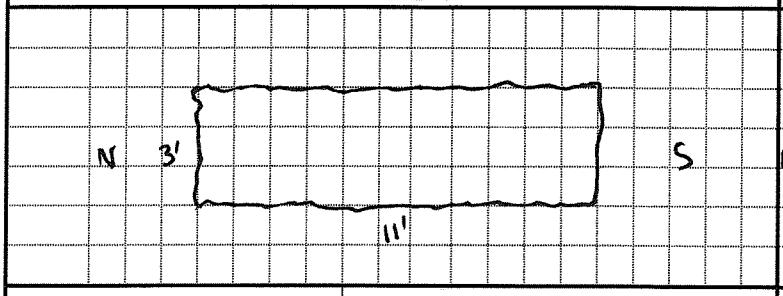
Test Pit Log

Test Pit ID: CTP-13

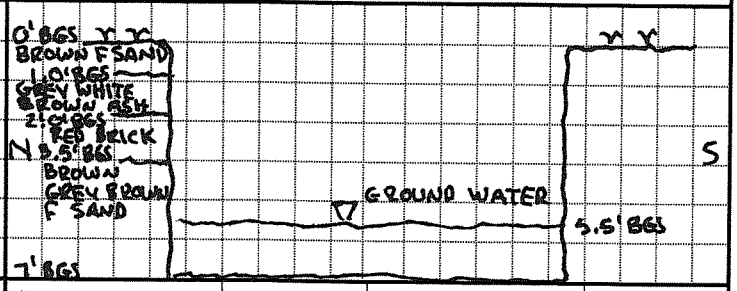
Client:	National Grid	**Date:**	7/29/2013
Project:	Coffee Street	**Weather:**	Sun and Clouds
Location:	Malone, NY	**Temperature:**	80 F
Project #:	B0036706.0000.00012	**Wind:**	SW to NE
Geologist:	Marcus Eriksson	**Subcontractor:**	Op Tech
Coordinates:		**Equipment:**	Excavator

Sketch of Test Pit Layout:

Plan View



Profile View



Test Pit Dimensions:	**3' wide x 11' long**	**Total Depth:**	**7' bgs.**
Depth to Water:	**5.5' bgs.**		

Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material	Samples Collected
0.0 – 1.0	0.0	Brown fine SAND, little fine to coarse subangular Gravel, Organics (roots) (M,NP).	NA
1.0 – 2.0	0.0	Grey/white/brown ASH, little fine Sand (M,NP).	NA
2.0 – 3.5	0.0	Red BRICK, little fine Sand (M,NP).	NA
3.5 – 7.0	0.0	Brown/grey fine SAND, little to some fine to coarse subrounded Gravel, little Silt, Organics (roots) (M,NP).	NA

Notes:

NA = Not Available/Applicable; bgs = below ground surface; M = moist; S = saturated; NP = non-plastic.

Photograph Summary:

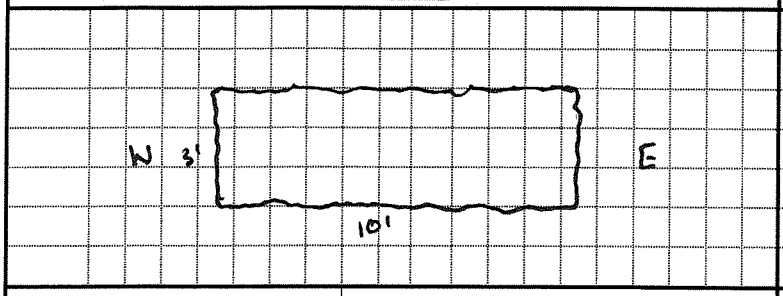
Test Pit Log

Test Pit ID: CTP-14

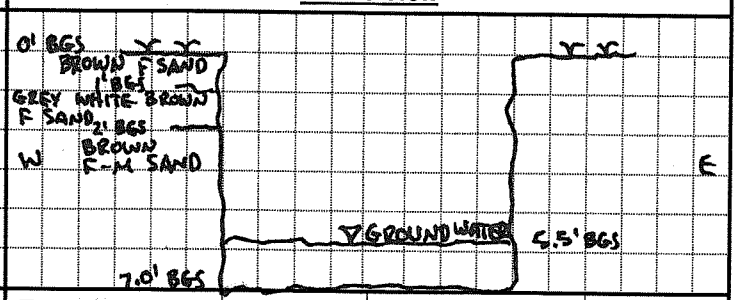
Client:	National Grid	**Date:**	7/29/2013
Project:	Coffee Street	**Weather:**	Sun and Clouds
Location:	Malone, NY	**Temperature:**	80 F
Project #:	B0036706.0000.00012	**Wind:**	SW to NE
Geologist:	Marcus Eriksson	**Subcontractor:**	Op Tech
Coordinates:		**Equipment:**	Excavator

Sketch of Test Pit Layout:

Plan View



Profile View



Test Pit Dimensions:	**3' wide x 10' long**	**Total Depth:**	7' bgs.
Depth to Water:	**5.5' bgs.**		

Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material	Samples Collected
0.0 – 1.0	0.0	Brown fine SAND, little fine to coarse subangular Gravel, Organics (roots), Glass (M,NP).	NA
1.0 – 2.0	0.0	Grey/white/brown ASH, little fine Sand (M,NP).	NA
2.0 – 7.0	0.0	Brown fine to medium SAND, little fine to coarse subrounded Gravel, Cobbles, little Silt, red Brick (M,NP).	NA

Notes:

NA = Not Available/Applicable; bgs = below ground surface; M = moist; S = saturated; NP = non-plastic.

Photograph Summary:

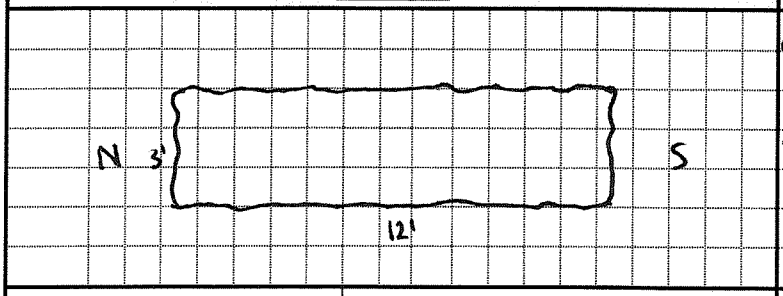
Test Pit Log

Test Pit ID: CTP-15

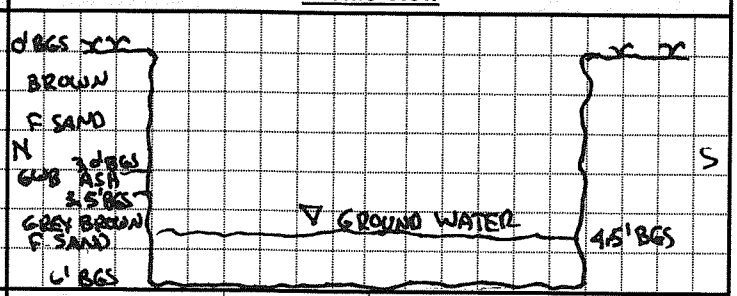
Client:	National Grid	**Date:**	7/29/2013
Project:	Coffee Street	**Weather:**	Sun and Clouds
Location:	Malone, NY	**Temperature:**	80 F
Project #:	B0036706.0000.00012	**Wind:**	SW to NE
Geologist:	Marcus Eriksson	**Subcontractor:**	Op Tech
Coordinates:		**Equipment:**	Excavator

Sketch of Test Pit Layout:

Plan View



Profile View



Test Pit Dimensions:	3' wide x 12' long	**Total Depth:**	6' bgs.	**Depth to Water:**	4.5' bgs.

Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material	Samples Collected
0.0 – 3.0	0.0	Brown fine SAND, little fine to coarse subangular Gravel, Organics (roots), Metal, red Brick (M,NP).	NA
3.0 – 3.5	0.0	Grey/white/brown ASH, little fine Sand (M,NP).	NA
3.5 – 6.0	0.0	Grey/brown fine SAND, little Silt, Organics (roots, peat) (M,NP).	NA

Notes:

NA = Not Available/Applicable; bgs = below ground surface; M = moist; S = saturated; NP = non-plastic.

Photograph Summary:
