

April 12, 2011

R. Scott Deyette
Chief, Inspection Unit
Remedial Bureau C
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7014

Subject: Technical Memorandum - Adjacent Property Test Pit Investigation
Interim Remedial Measure (IRM)
Fort Edward (Canal St.) Non-Owned Former MGP Site
Fort Edward, Washington County, Site #V00472

Dear Mr. Deyette,

Enclosed please find a Technical Memorandum describing the test pit investigation activities conducted from March 21, 2011 through March 23, 2011 on neighboring properties to the east and south of the National Grid Fort Edward (Canal St.) non-owned former MGP site. The technical memorandum includes one figure depicting locations of test pit investigations, one figure depicting sewer easements associated with the National Grid site, and a photographic log of investigation activities.

Upon your review of the technical memorandum, we would like to schedule a telephone conference to discuss proposed remediation activities to address MGP impacts identified during the test pit investigations.

If you have any questions or comments, then please contact me at (315) 428.5652 or steven.stucker@us.ngrid.com.

Sincerely,



On behalf of

Steven P. Stucker
Environmental Department

cc: Deanna Ripstein, New York State Dept. of Health
Richard Malcolm, MWH Americas
Andy Krieves, Hartgen Archeological Associates

April 12, 2011

ELECTRONIC DELIVERY
(via steven.stucker@us.ngrid.com)

Memorandum

To: Mr. Steven Stucker, National Grid

From: Richard Malcolm, MWH

**RE: Canal Street Fort Edward MGP Site IRM
Adjacent Property Test Pit Investigation**

An Interim Remedial Measure (IRM) was completed for the Canal St., Fort Edward NY former manufactured gas plant (MGP) Site. Excavation and site restoration in accordance with the NYSDEC approved IRM Work Plan were conducted between July 6, 2009 and July 23, 2009. Results of documentation samples collected in accordance with the IRM Work Plan exceeded 6NYCRR 375-6.8(b) Restricted Residential Soil Clean-up Objectives (SCOs) as described in the July 21, 2009 memorandum summarizing soil sample results. Additional documentation samples were collected as proposed in the September 3, 2009 Addendum to the Work Plan to further delineate soils on the northern property boundary, as well as to establish proposed additional excavation limits along the southern border of the previous IRM excavation. Excavation was completed to revised excavation limits as identified in your June 16, 2010 email with attached figure to Scott Deyette of NYSDEC, and approved by Mr. Deyette on June 24, 2010.

During the course of excavation to the revised limits, a four-inch clay tile pipe was discovered along the southeast wall of the excavation on July 22, 2010. The clay pipe contained coal tar, appeared to run from west to east, and was comprised of approximately 24" long segments laid end-to-end with no gasket or joints evident. Beginning July 26, 2010, the pipe was uncovered from the IRM excavation eastward to the property boundary. On July 28, 2010 the pipe was excavated at the eastern property boundary and capped with triple-folded polyethylene sheeting and duct tape. No investigation was conducted to delineate the pipe location or extents on the adjacent property east of the National Grid property.

During inspection of the clay tile pipe trench prior to backfill, a seam of coal tar was observed on both sides of the trench in one location approximately fifty feet east of the IRM excavation. Prior to backfilling this portion of the trench, the backhoe was used to expand the trench excavation in an attempt to remove coal tar that had presumably leaked from the clay tile pipe. On July 29, 2010 the excavation was extended approximately four feet north of the clay tile pipe trench and six feet south. In both instances, a seam of tar was observed at approximately thirty inches below grade, extending north and south past the limits of excavation. Excavation south of the clay pipe trench was resumed on August 3, 2010. Several large trees were cleared, and the excavation was completed from the clay pipe trench to the southern property boundary. The seam of tar in this area appeared to follow the route of a former peat-lined trench. Excavation was halted at the southern property boundary. Remaining tar that appeared to continue

southward off the property was photographed. No investigation was conducted to delineate the peat-lined trench location or extents on the adjacent property south of the National Grid property.

In response to these findings, additional investigation activities were proposed on adjacent properties to the south and east of the site as an Addendum (dated September 13, 2010) to the approved IRM Work Plan, originally dated April, 2009. An email notice of no further NYSDEC or NYSDOH comments to the addendum was received September 13, 2010. Additionally, prior to mobilizing for field investigations, an archeological phase IA literature review and sensitivity assessment was completed and submitted to New York State Office of Parks, Recreation and Historic Preservation (OPRHP).

This memorandum summarizes the investigation and delineation of the clay tile pipe on properties east of the National Grid site and investigation of properties south of the National Grid site that resulted in no further delineation of the peat-lined trench. A brief summary of the phase IA assessment is also included.

Phase IA Literature Review and Sensitivity Assessment

A meeting with OPRHP was held to discuss potential impacts to archeologically sensitive areas associated with the proposed investigation locations. Subsequently, a work plan summarizing archeological investigation and monitoring activities was submitted and approved by OPRHP on December 15, 2010.

A phase IA literature review and sensitivity assessment was completed by Hartgen Archeological Associates, Inc. and submitted to OPRHP on January 11, 2011. The investigation was conducted according to the New York Archaeological Council's Standards for Cultural Resource Investigations and the Curation of Archaeological Collections (1994), which are endorsed by OPRHP. The report was prepared according to OPRHP's State Historic Preservation Office (SHPO) Phase I Archaeological Report Format Requirements (2005).

The assessment indicated a moderate potential to discover intact pre-contact and/or historical archeological deposits and features. Based upon this potential, the report recommended phase IB archeological monitoring, including artifact identification, collection, and processing. Specifically, the archeologists were to provide descriptive information concerning the two conveyances from the manufactured-gas plant, as they have not been well-documented in New York archeology. Information concerning the length, width, depths and construction material, techniques, and methods were to be collected by the monitoring archeologist.

On January 21, 2011, OPRHP issued a letter stating their concurrence with the recommendations. Hartgen Archeological Associates, Inc. was contracted to perform the phase IB monitoring. A report of their findings will be issued separate from this Technical Memorandum and submitted to OPRHP.

Adjacent Properties to the East - Clay Tile Pipe

Investigation of the clay tile pipe to determine the extent of travel and approximate route on the adjacent properties to the east was conducted by excavating test pits from March 21, 2011 through March 23, 2011. **Figure 1** depicts test pit locations on the adjacent properties and a Washington County Sewer Authority combined sewer overflow (CSO) drain line. **Attachment 1** contains a photographic log of test pit activities.

The known terminus of the pipe at the eastern boundary of the National Grid property served as a starting location. Ten test pits were advanced sequentially from west to east at distances varying between ten and fifty feet, depending upon vegetation, topography, and other obstructions. The test pits were excavated perpendicular to the expected path of travel of the clay tile pipe and ranged in depth from six inches below grade at the eastern end (TP#9) to approximately 4'-6" below grade in the center portion (TP#4 and TP#5). TP#6 was completed parallel to the path of travel because the pipe direction changed unexpectedly in that location, returning to a more easterly flow. A large diameter reinforced concrete pipe was identified running north to south between TP#9 and TP#10, bisecting the anticipated route of the clay tile pipe. This pipe was identified as a Washington County Sewer Authority CSO discharge. After locating the clay tile pipe in TP#9, approximately three feet west of the CSO, TP#10 was excavated on the east side. The clay tile pipe was not located on the eastern side of the CSO pipeline, although coal ash was observed in the excavation. The clay tile pipe traverses approximately 276 linear feet from the National Grid property to TP#9, adjacent to the CSO.

The test pits were excavated only to the extent required to identify the location, depth, and approximate direction of travel of the clay tile pipe. Once the pipe was located in each test pit, it was photographed, and absence/presence of coal tar or other MGP residual materials was noted. **Table 1** below summarizes observations recorded for each test pit. No materials were removed from test pits for disposal. Spoils for each test pit were placed on a piece of HDPE liner at the side of the excavation. Upon completion of observation and documentation, each test pit was backfilled immediately by returning the spoils to the excavation and compacting the material with the bucket of the backhoe or mini-excavator.

TABLE 1
Test Pits Investigations – East Properties

Name	Date Excavated	Depth to Pipe	Pipe Observation	MGP Observation	Groundwater
TP#1	3/21/2011	3'	Oblong section of clay tile, no joints/gasket	Tar observed in excavation	Not encountered
TP#2	3/21/2011	3'	4" clay tile, no joints/gasket	Tar observed in excavation	Not encountered
TP#3	3/21/2011	4'	4" clay tile, no joints/gasket	Tar observed in excavation	Not encountered
TP#4	3/21/2011	4'-6"	Turned south between TP#3 & TP#4	None	Not encountered
TP#5	3/22/2011	4'-6"	4" clay tile, no joints/gasket	None	Not encountered
TP#6	3/22/2011	2'	Turned east, brick around pipe	Tar, coal ash in excavation	GW observed at approx 1'
TP#7	3/23/2011	1'	Two 4" clay tile pipes laid side-by-side	Coal ash in excavation	GW observed at approx 1'
TP#8	3/23/2011	0'-6"	Two 4" clay tile pipes laid side-by-side	Coal ash in excavation	GW observed at approx 6"
TP#9	3/23/2011	0'-6"	Two 4" clay tile pipes laid side-by-side	Coal ash in excavation	GW observed at approx 6"
TP#10	3/23/2011	N/A	Not located	Coal ash in excavation	GW observed at approx 6"

Adjacent Properties to the South

Investigation of the adjacent properties to the south was conducted by excavating test pits on March 22, 2011 and March 23, 2011. **Figure 1** depicts test pit locations on the adjacent properties and the approximate location of a septic tank as identified by the homeowner on the McCue parcel adjoining the National Grid property. **Attachment 1** contains a photographic log of test pit activities.

Test pit investigations on the southern properties were intended to locate and delineate the former peat lined trench that was discovered in July, 2010. Due to concerns raised by the homeowner directly south of the National Grid property regarding access and potential impact to the septic tank, the first test pit (TP-A) was conducted on the property further south. An approximately thirty foot long excavation was completed to a depth of between seven and nine feet below grade. At the western end of this excavation, an 18" clay tile pipe was located, running north to south. The pipe was damaged during excavation and pieces were examined for evidence of MGP residual materials or coal tar. No odors, tar, ash, or other MGP residual materials were present in the excavation or in the pipe.

Once a test pit location was agreed upon for the McCue parcel, excavation was completed of an approximately thirty foot long test pit (TP-B) to a depth of between seven and nine feet below grade. During excavation of the western end of this test pit, bones from a buried mule or horse were discovered. These were investigated and documented by the archeologists from Hartgen Archeological Associates, Inc. and will be discussed in more detail in their Phase IB Archeological Monitoring Report. Approximately three feet to the east of the mule burial, the 18" clay tile pipe was located. This section of the pipe was investigated for evidence of MGP impact, with none identified.

The 18" clay tile pipe appears to coincide with a suspected pipe route identified on an easement diagram for the National Grid property (**Figure 2**). Neither the easement diagram, nor the field investigation of this pipe indicates a correlation to the peat-lined trench. No coal tar, ash, or other evidence of MGP impact was noted anywhere in the excavations completed for TP-A and TP-B. **Table 2** below summarizes the observations from the two test pits. Spoils for each test pit were placed on a piece of HDPE liner at the side of the excavation. Upon completion of observation and documentation, each test pit was backfilled immediately by returning the spoils to the excavation and compacting the material with the bucket of the backhoe or mini-excavator.

TABLE 2
Test Pits Investigations – South Properties

Name	Date Excavated	Depth to Pipe	Pipe Observation	MGP Observation	Groundwater
TP-A	3/22/2011	7'	18" Clay Tile, bell and spigot	None	GW observed at approx. 8'
TP-B	3/23/2011	7'	18" Clay Tile, bell and spigot	None	GW observed at approx. 8'

Site Restoration

The test pit locations were restored to original grade to the extent possible considering the snow remaining on site and the saturation of soils from snowmelt and rain. After the snow has melted and the soil moisture decreases, all test pit locations will be dressed with hand tools, raked, and seeded to establish vegetation and prevent erosion. Photographs of the test pit locations in the lawn areas on the southern properties after backfill, as well as the route of egress for the backhoe and a parking area across Canal Street to the north are included in **Attachment 1**. These areas will be restored to the satisfaction of property owners.

If you have any questions regarding these test pit activities on properties adjacent to the National Grid site, please contact me at (412) 668-0153 or Richard.w.malcolm@us.mwhglobal.com.

Sincerely,

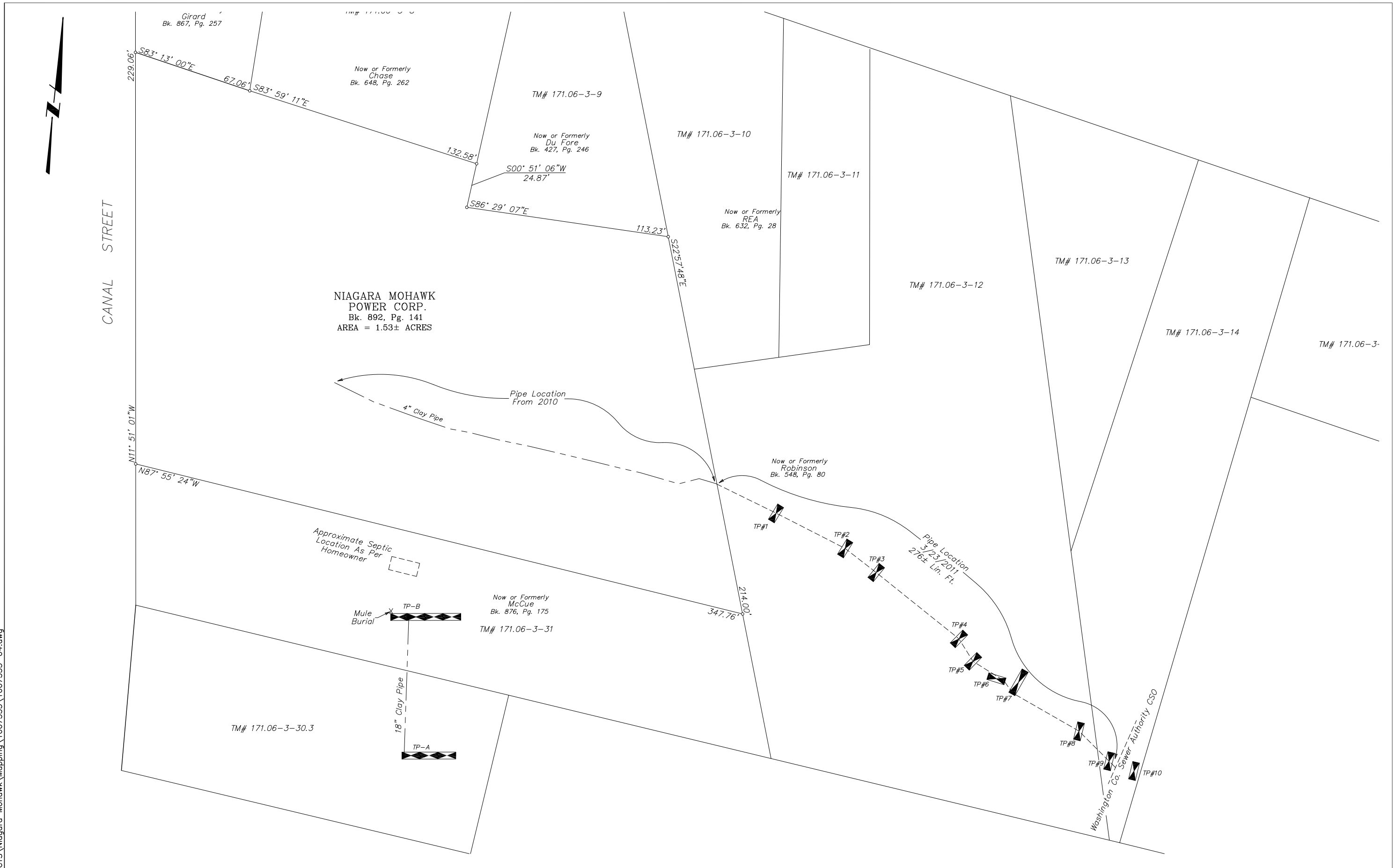
A handwritten signature in black ink, appearing to read 'R. W. Malcolm', followed by a horizontal line.

Richard W. Malcolm, P.E.
Supervising Engineer
MWH Americas, Inc.

Attachments:

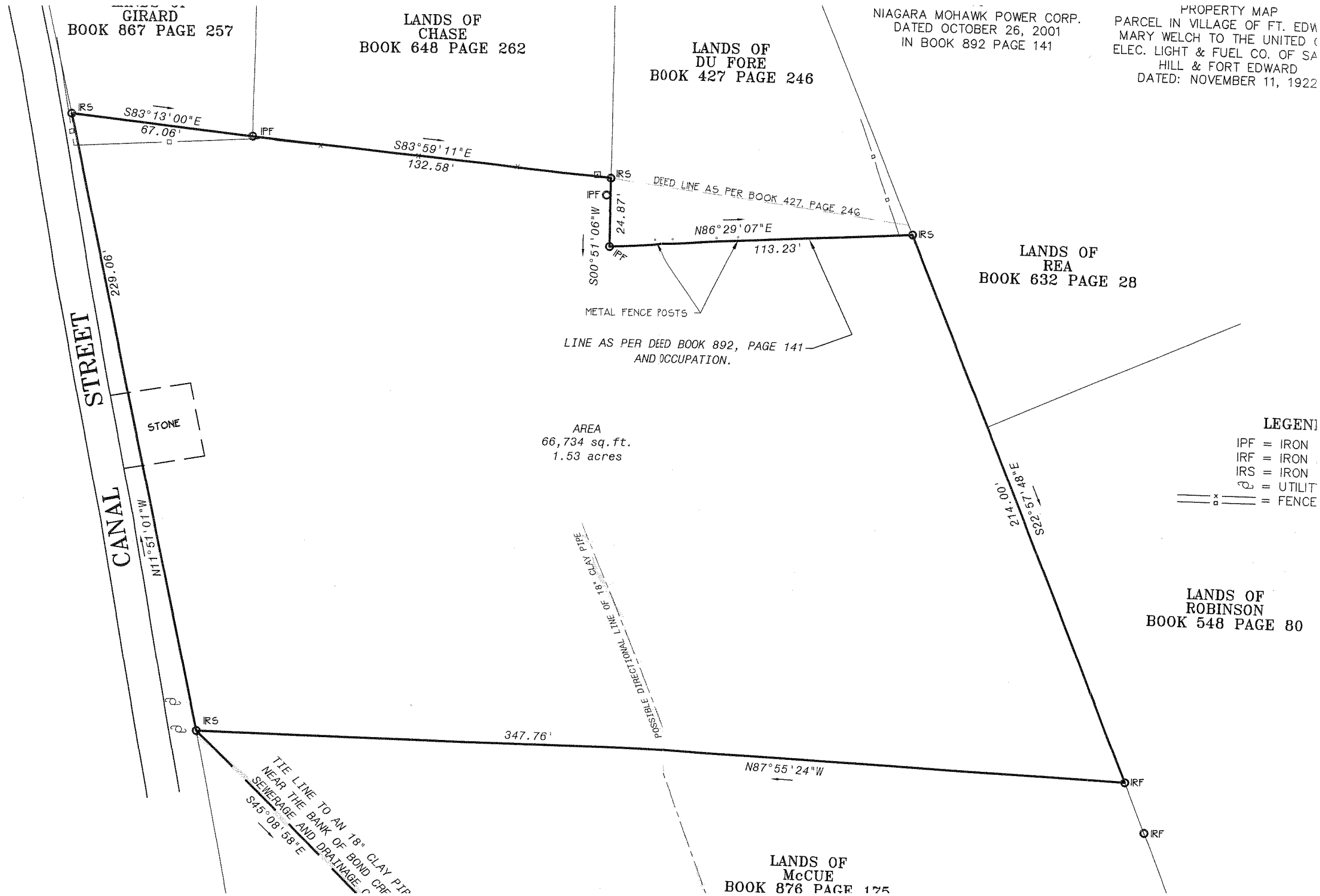
1. Figure 1 – Test Pits on Eastern and Southern Adjacent Properties
2. Figure 2 – Easement Diagram
3. Attachment 1 – Photographic Log

S:\IND PROJECTS\Niagara Mohawk Mapping\1007553\1007553-04.dwg



				SCALE:	<div>012</div> <div>IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE</div>	SURVEYED: GVG		<div><div></div></div> <div>MWH</div>	NATIONAL GRID FT. EDWARD (CANAL STREET)	TEST PITS ON EASTERN AND SOUTHERN ADJACENT PROPERTIES	FIGURE 1
				1"=50'		DRAWN: VEN					
REV	DATE	BY	DESCRIPTION			CHECKED: RWM					

S:\IND PROJECTS\Niagara Mohawk Mapping\NI-MO-10.DWG



REV	DATE	BY	DESCRIPTION

SCALE:
1"=40'

WARNING
1/2
IF THIS BAR DOES NOT MEASURE 1"
THEN DRAWING IS NOT TO SCALE

DESIGNED: _____
DRAWN: _____
CHECKED: _____







NATIONAL GRID
FT. EDWARD (CANAL STREET)



Easement Diagram



FIGURE
2



Customer: National Grid		Project Number: 1007553	
Site Name: Canal Street Former MGP		Site Location: Fort Edward, NY	
Photograph ID: 1			
Date: Mar 24, 2011			
Location: TP#1 - Eastern Properties			
Direction: N/A			
Comments: Pipe with some tar. Pipe section is oblong, rather than circular 4" diameter.			
Photograph ID: 2			
Date: Mar 24, 2011			
Location: TP#1 - Eastern Properties			
Direction: E			
Comments: Tar found in vicinity of pipe, but not necessarily inside. Approximately three feet below grade.			



Customer: National Grid		Project Number: 1007553	
Site Name: Canal Street Former MGP		Site Location: Fort Edward, NY	
Photograph ID: 3			
Date: Mar 24, 2011			
Location: TP#2 - Eastern Properties			
Direction: E			
Comments: Pipe with tar in vicinity (above pipe). Approximately three feet below grade.			
Photograph ID: 4			
Date: Mar 24, 2011			
Location: TP#3 - Eastern Properties			
Direction: E			
Comments: Pipe found approximately four feet below grade.			



Customer: National Grid		Project Number: 1007553	
Site Name: Canal Street Former MGP		Site Location: Fort Edward, NY	
Photograph ID: 5			
Date: Mar 24, 2011			
Location: TP#4 - Eastern Properties			
Direction: SW			
Comments: Pipe found approximately 4'-6" below grade. The pipe turned south between TP#3 and TP#4.			
Photograph ID: 6			
Date: Mar 24, 2011			
Location: TP#5 - Eastern Properties			
Direction: S			
Comments: Pipe found approximately 4'-6" below grade. Visible in photo just above chunk of ice.			



Customer:	National Grid	Project Number:	1007553
Site Name:	Canal Street Former MGP	Site Location:	Fort Edward, NY
Photograph ID: 7			
Date: Mar 24, 2011			
Location: TP#6 - Eastern Properties			
Direction: NE			
Comments: Large diameter clay pipe unearthed at surface in area of Test Pit 6. No tar or MGP residue associated with this pipe.			
Photograph ID: 8			
Date: Mar 24, 2011			
Location: TP#6 - Eastern Properties			
Direction: E			
Comments: Pipe with tar in vicinity. No tar inside pipe.			


Customer: National Grid		Project Number: 1007553	
Site Name: Canal Street Former MGP		Site Location: Fort Edward, NY	
Photograph ID: 9			
Date: Mar 24, 2011			
Location: TP#7 - Eastern Properties			
Direction: N			
Comments: Double pipes laid side-by-side. Coal ash above pipes, but little to no tar. Pipe located approximately one foot below grade.			
Photograph ID: 10			
Date: Mar 24, 2011			
Location: TP#8 - Eastern Properties			
Direction: S			
Comments: Double pipes laid side-by-side. Coal ash above pipes, but little to no tar. Pipe located approximately 6" below grade.			



Customer: National Grid		Project Number: 1007553	
Site Name: Canal Street Former MGP		Site Location: Fort Edward, NY	
Photograph ID: 11			
Date: Mar 24, 2011			
Location: TP#9 - Eastern Properties			
Direction: S			
Comments: Double pipes laid side-by-side. Coal ash above pipes, but little to no tar. Pipe located approximately 6" below grade.			
Photograph ID: 12			
Date: Mar 24, 2011			
Location: Brick structure at CSO Pipe			
Direction: E			
Comments: Bricks alongside CSO pipe in area where clay tile pipe would have intersected.			



Customer: National Grid		Project Number: 1007553	
Site Name: Canal Street Former MGP		Site Location: Fort Edward, NY	
Photograph ID: 13			
Date: Mar 24, 2011			
Location: TP#10 - east of CSO Pipe			
Direction: S			
Comments: Test pit excavation area on east side of CSO pipe. Coal ash found in this test pit, but no clay tile pipe or coal tar.			
Photograph ID: 14			
Date: Mar 24, 2011			
Location: TP-A - Southern Properties			
Direction: NW			
Comments: 18" clay tile pipe discovered approximately 7 feet below grade. No coal tar, MGP residue, or odors associated with the pipe.			

Customer: National Grid		Project Number: 1007553	
Site Name: Canal Street Former MGP		Site Location: Fort Edward, NY	
Photograph ID: 15			
Date: Mar 24, 2011			
Location: TP-A - Southern Properties			
Direction: NW			
Comments: Clay tile pipe approximately one foot above water table.			
Photograph ID: 16			
Date: Mar 24, 2011			
Location: TP-B - Southern Properties			
Direction: E			
Comments: Animal bones discovered during test pit activities on McCue property.			

Customer: National Grid		Project Number: 1007553	
Site Name: Canal Street Former MGP		Site Location: Fort Edward, NY	
Photograph ID: 17			
Date: Mar 24, 2011			
Location: TP-B - Southern Properties			
Direction: W			
Comments: Animal bones discovered during test pit activities on McCue property. Bones discovered approximately three feet below grade.			
Photograph ID: 18			
Date: Mar 24, 2011			
Location: TP-B - Southern Properties			
Direction: W			
Comments: 18" clay tile pipe discovered approximately 7 feet below grade. No coal tar, MGP residue, or odors associated with the pipe.			

Customer: National Grid		Project Number: 1007553	
Site Name: Canal Street Former MGP		Site Location: Fort Edward, NY	
Photograph ID: 19			
Date: Mar 24, 2011			
Location: TP-B - Southern Properties			
Direction: W			
Comments: 18" clay tile pipe discovered approximately 7 feet below grade. No coal tar, MGP residue, or odors associated with the pipe.			
Photograph ID: 20			
Date: Mar 24, 2011			
Location: Southern Properties			
Direction: NE			
Comments: McCue property where original test pit planned prior to relocation.			

Customer: National Grid		Project Number: 1007553	
Site Name: Canal Street Former MGP		Site Location: Fort Edward, NY	
Photograph ID: 21			
Date: Mar 24, 2011			
Location: Southern Properties			
Direction: E			
Comments: McCue property after backfill and clean-up at Test Pit "B."			
Photograph ID: 22			
Date: Mar 24, 2011			
Location: Southern Properties			
Direction: E			
Comments: Test Pit "B" after backfill and clean-up.			

Customer:	National Grid	Project Number:	1007553
Site Name:	Canal Street Former MGP	Site Location:	Fort Edward, NY
Photograph ID: 23			
Date: Mar 24, 2011			
Location: Southern Properties			
Direction: E			
Comments: Test Pit "A" after backfill and clean-up.			
Photograph ID: 24			
Date: Mar 24, 2011			
Location: Southern Properties			
Direction: NNE			
Comments: Southern properties where backhoe tracked out after completion of test pits.			

Customer: National Grid		Project Number: 1007553	
Site Name: Canal Street Former MGP		Site Location: Fort Edward, NY	
Photograph ID: 25			
Date: Mar 24, 2011			
Location: Southern Properties			
Direction: E			
Comments: Southernmost property where backhoe tracked out after completion of test pits.			
Photograph ID: 26			
Date: Mar 24, 2011			
Location: Northern parking area across Canal Street			
Direction: N			
Comments: Parking area where vehicles damaged grass.			