
**TROY (SMITH AVE.) FORMER MGP SITE
INGALLS AVENUE SITE OPERABLE UNIT**

TROY, NEW YORK

**Draft
Site Investigation Report**

November 2003

Prepared for:

Niagara Mohawk

A National Grid Company



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1.0 Introduction

Niagara Mohawk, A National Grid Company (Niagara Mohawk), at the request of the New York State Department of Environmental Conservation (NYSDEC), agreed to perform subsurface investigations at the Ingalls Avenue site to evaluate the site for the possible presence of residuals at the site.

2.0 Background

The Ingalls Avenue site (the “Site”) consists of: a portion of Ingalls Avenue, a municipal road owned by the City of Troy, and a combination of private property owned by Ms. Helen Mlock and land formerly under the waters of the Hudson River as part of a former canal owned by New York State. A site map is presented as Figure 1.

The former canal was filled in the early 20th century. NYSDEC posited that waste material may have been a component of the material used to fill the canal. A removal effort, limited to an area adjoining Ingalls Avenue, was performed in May 1999. As stated in the August 1999 Draft Waste Removal Report, the removal was limited to the capacity of one roll-off container.

In response to NYSDEC’s October 5, 2001 letter to Niagara Mohawk, and subsequent meetings between Niagara Mohawk and NYSDEC on October 25, 2001 and July 30, 2002, Niagara Mohawk agreed to perform an investigation of the Site with the objective of evaluating the nature of canal backfill material.

In support of the proposed investigation, Niagara Mohawk prepared a draft Site Characterization Work Plan (Foster Wheeler Environmental Corporation, 2002), which was approved by NYSDEC on December 20, 2002. The Work Plan specified the excavation of eight test pits across the site to a maximum depth of 15 ft, and collection of soil samples to be analyzed for total cyanide from areas where residuals were encountered. At the request of NYSDEC, the work plan also provided for the collection of a groundwater sample from monitoring well MW-19, associated with the Troy (Smith Ave.) site, as a component of the remedial investigation (RI) for that site.

Initiation of the scope of work presented in the work plan was delayed until Niagara Mohawk and NYSDEC resolved Site ownership and access issues in the summer of 2003.



3.0 Methodology

3.1 Site Reconnaissance

The underground facilities protective organization (UFPO) was contacted to locate any on-site underground utilities. One storm sewer aligned parallel to Ingalls Avenue was identified through this effort. The City of Troy demarcated the storm sewer. Other subsurface utilities were not identified. Immediately prior to the initiation of test pit excavations, TtFW performed a Site reconnaissance from President Street, between Ingalls Avenue and Middleburg Street, to the Hudson River to evaluate whether locations of test pits should be modified from the work plan based on Site observations. One test pit (TP-8) was relocated based on the presence of a storm sewer along Ingalls Avenue identified through UFPO.

3.2 Test Pits





A total of eight test pits were excavated at the Site to allow visual evaluation of the materials used to fill the former canal. The approximate locations and configuration of the test pits are depicted on Figure 1.

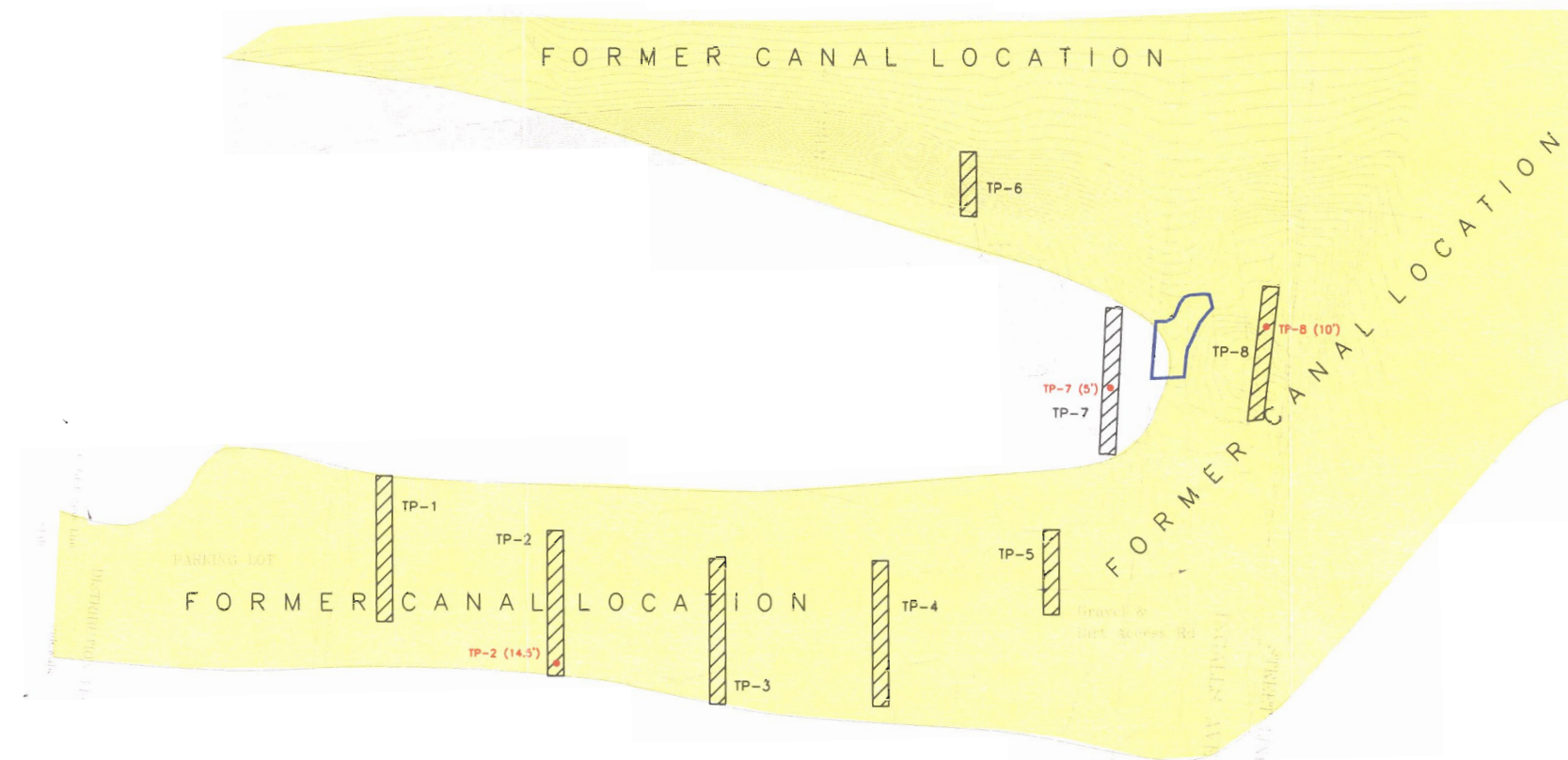
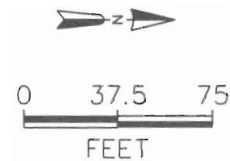
- Five test pits (TP-1 through TP-5) were excavated between the parking lot to the south and Ingalls Avenue to north (see Figure 1), within the approximate footprint of the former canal.
- One test pit (TP-8) was excavated adjacent to and north of the northern terminus of the 1999 waste removal area.
- One test pit (TP-6) was excavated adjacent to the Hudson River within the western portion of the footprint of the former canal.
- One test pit (TP-7) was excavated within the apparent footprint of the former peninsula formed by the former canal.

Test pits were excavated using a track-mounted excavator to a maximum depth of 15 ft below ground surface (bgs). Test Pit Excavation Logs are included as Appendix A. Groundwater was not encountered in any of the excavations. TtFW observed the excavations. Excavated material was placed on the ground surface. Material removed from the test pits was visually evaluated. Soil strata from each excavation were backfilled in reverse order from which they were excavated and subsequently compacted. Coordinates of the ends of each excavation were determined using a Differential Global Positioning System (DGPS) and were recorded in the field logbook.

Samples were collected from three excavations and submitted to Severn-Trent Laboratories, Inc. (Edison, New Jersey) for analysis for total cyanide in accordance with the Site Characterization Work Plan. Health and safety procedures for sampling activities presented in the Site Specific Environmental Health and Safety Plan for the Ingalls Avenue Waste Removal (TtFW, 2003) were followed. Sampling quality assurance/quality control procedures were consistent with those of the remedial investigation of the Troy (Smith Ave.) site.

Legend

-  Approximate Test Pit Locations
-  Former Canal
-  Approximate Area of Ingalls Ave. Waste Removal (1999)
-  Approximate Soil Sample Location (depth shown in parentheses)



REFERENCE

- 1) NMPC DRAWING TITLED "SMITH AVE. - SHAKER RD. #16 EXPOSED PIPELINE UNDER HUDSON RIVER", DRAWING NO. D-31979-1, INDEX NO. 21.0-A1.6-M49.
- 2) TAX MAPS NO. 090-62 & 090-70, CITY OF TROY, COUNTY OF RENSSELAER.
- 3) NMPC DWG. NO. D-31979-E, INDEX NO. 21.0-A1.6-M49 TITLED "SMITH AVE. - SHAKER RD. #16, EXPOSED PIPELINE UNDER THE HUDSON RIVER, DATED 8/30/1995."

NOTE

- 1) VERTICAL DATUM ON THIS DRAWING IS NGV - 29.
- 2) HORIZONTAL DATUM FOR THIS PROJECT IS NEW YORK STATE PLANE AND 1983, EASTERN ZONE.
- 3) PROPERTY INFORMATION IS BASED ON TAX MAPS SHOWN IN REF. NO. 3.

	TEST PIT EAST END		TEST PIT WEST END	
	Northing	Easting	Northing	Easting
TP-1	1426570.722	711180.598	1426592.392	711095.692
TP-2	1426627.991	711229.521	1426640.511	711146.614
TP-3	1426702.197	711238.271	1426705.000	711196.787
TP-4	1426778.808	711238.106	1426779.919	711195.455
TP-5	1426855.916	711208.411	1426862.023	711167.521
TP-6	1426811.936	711033.566	1426827.973	710991.342
TP-7	1426883.200	711132.570	1426883.245	711075.083
TP-8	1426930.869	711116.050	1426940.536	711070.134

N:\GIS\NM Troy\Ingalls Avenue\Test Pit Locations and Excavation Area 111003 wo lines.DWG



TETRA TECH FW INC.

TITLE:

Test Pit Locations
Site Investigation Report
Ingalls Avenue Operable Unit, Troy, New York

Niagara Mohawk
A National Grid Company



DWN.: MK	DATE: 11/06/03	PROJECT NO.:
CHKD.:	REV.: 0	FIGURE NO.: 1
DES.: LEN	APPD.:	



4.0 Results

Test pits indicated the presence of fill material generally consisting of sand and gravels as well as brick, metal debris, ash, coal, and slag. Native materials were not observed in the test pits with the exception of an area of silty sands overlying gravel and weathered shale observed in the western half of test pit TP-6 (adjacent to the Hudson River).

Wood chips, exhibiting a sulfurous odor were detected in three test pits. These sulfurous materials were observed in test pits TP-2 (at approximately 13 to 15 ft bgs), TP-7 (at approximately 5 to 6 ft bgs), and TP-8 at approximately 3 ft bgs and at approximately 10 ft bgs). One sample was collected from each of these test pits and submitted to Severn-Trent Laboratories, Inc. (STL) for total cyanide analysis. The results of total cyanide analysis of each sample collected are presented in Table 1. Laboratory reports containing raw analytical results are included as Appendix B.

Table 1. Test Pit Soil Sample Results for Total Cyanide

Sample ID	Depth (ft)	Total cyanide concentration
		(mg/kg)
TP-2	14.5	47.4
TP-7	5	195
TP-8	10	137

5.0 Conclusions

The results of the test pit investigation indicate the presence of sulfurous material at depth at isolated locations in the canal depression formerly located at the Site. Although the residual appears to have been a component of the material used to fill the former canal, the investigation results indicate that the material is not widespread at the Site. Neither standards nor guidance have been established by New York State for cyanide in soil. As acknowledged by NYSDEC, "reports have indicated that the cyanide at former MGP sites is a ferri-ferrocyanide compound of low toxicity. In addition, hydrogen cyanide is typically not present in purifier waste" (NYSDEC, 2000).

The USEPA (2001) has established generic soil screening levels (SSLs) for 110 chemicals under residential and commercial/industrial scenarios at Superfund sites. The current USEPA SSL established for cyanide is 1,600 mg/kg for cyanide under a residential use scenario and 23,000 mg/kg under a commercial/industrial use scenario. These screening levels were developed for a direct contact/soil ingestion exposure pathway, using a non-cancer hazard quotient of 1. As presented in Table 1, the concentrations of total cyanide detected at the Site (47.4 mg/kg to 137 mg/kg at depths ranging from 5 to 14 feet bgs) are well below the most conservative residential direct contact/soil ingestion exposure pathway soil screening value.



Detected cyanide concentrations ranging from 47.4 mg/kg to 195 mg/kg do not appear to require further delineation or remediation based on regulatory standards or available guidance. No further action at the Site is considered necessary.

6.0 References

Tetra Tech FW, Inc. 2003. Site Specific Environmental Health and Safety Plan for the Ingalls Avenue Waste Removal.

Foster Wheeler Environmental Corporation, 2002: Troy (Smith Ave.) Former MGP Site Ingalls Avenue Site Operable Unit – Draft Site Investigation Work Plan. Foster Wheeler Environmental Corporation, November 2002.

NYSDEC, 2000: Niagara Mohawk Troy - Water Street Former Manufactured Gas Plant Site Operable Unit 1: Area 4-Upland Disposal Troy (C), Rensselaer County Site Number 4-42-029A. New York State Department of Environmental Conservation. November 2000.

USEPA, 2001: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites - Peer Review Draft. United States Environmental Protection Agency, March 2001.



APPENDIX A – TEST PIT LOGS



Tetra Tech FW, Inc.
TEST PIT LOG

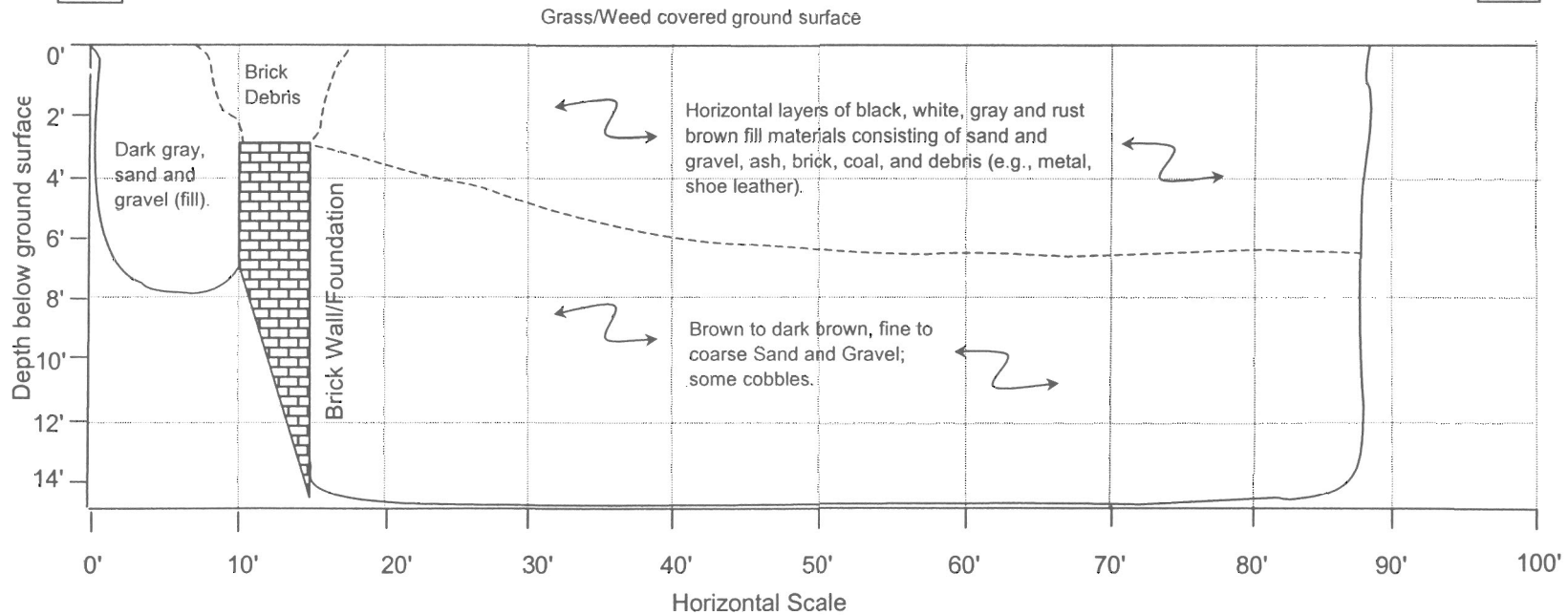
Project: Troy, (Ingalls Ave)
 Test Pit No. TP-1
 Date: 9/24/2003
 Logged By: J. Imhoff
 Pit Orientation: East to West

Start Time: 8:30
 Final Length 88'
 Final Depth 15'
 Final Width 5-6 ft.

End Time: 10:30
 Weather: Sunny and Clear
 Surface Conditions: Level, grass and weeds.

E

W



Notes: No visual or olfactory evidence of suspected residuals observed in test pit.

Water Influx:

Seepage: NA

Static: NA

**Tetra Tech FW, Inc.
TEST PIT LOG**

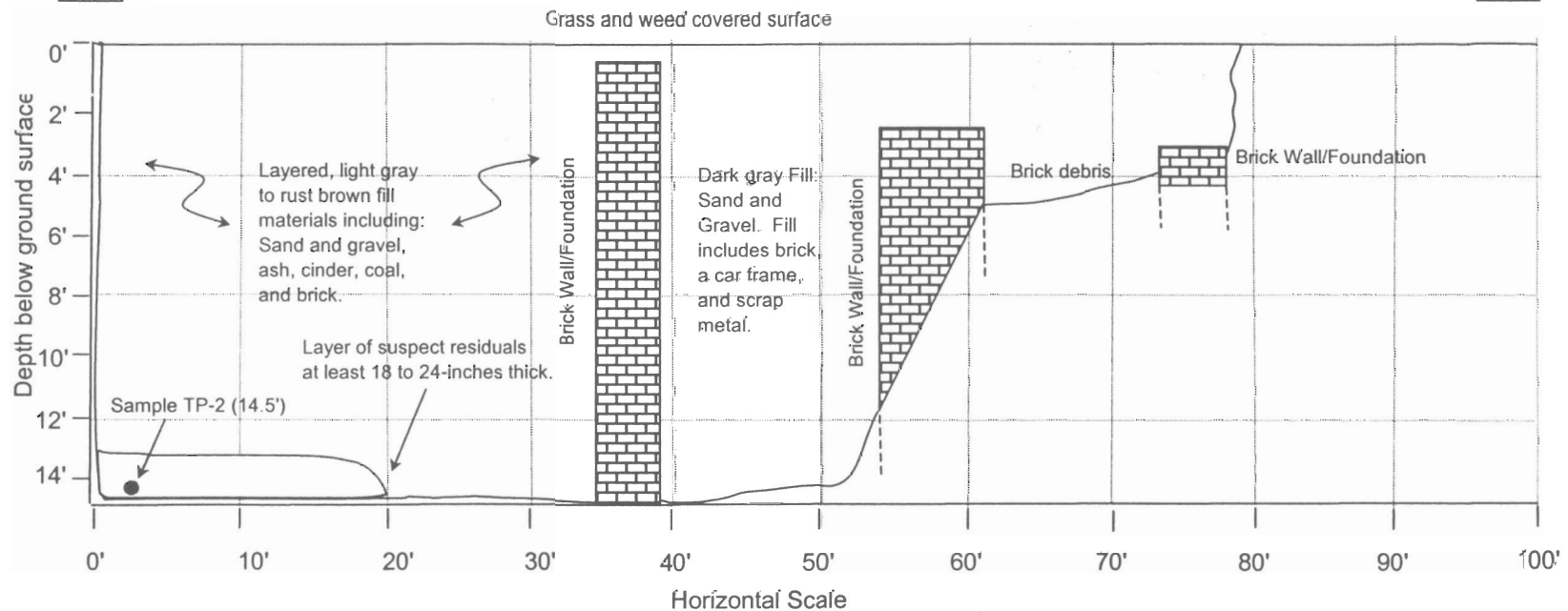
Project: Troy, (Ingalls Ave)
 Test Pit No. TP-2
 Date: 9/24/2003
 Logged By: J. Imhoff
 Pit Orientation: East to West

Start Time: 10:45
 Final Length 78'
 Final Depth 15' (max)
 Final Width 5-6 ft.

End Time: 14:00
 Weather: Rain, heavy at times
 Surface Conditions: Level, grass and weeds.

E

W



Notes: Suspect residuals consist of dark brown, densely matted wood chips with sulfurous odor. Sample TP-2 (14.5') collected at 11:15 from depth of 14.5 ft bgs at distance of 2.5 feet from the east end of the test pit.

Water Influx:

Seepage: NA

Static: NA

Tetra Tech FW, Inc.
TEST PIT LOG

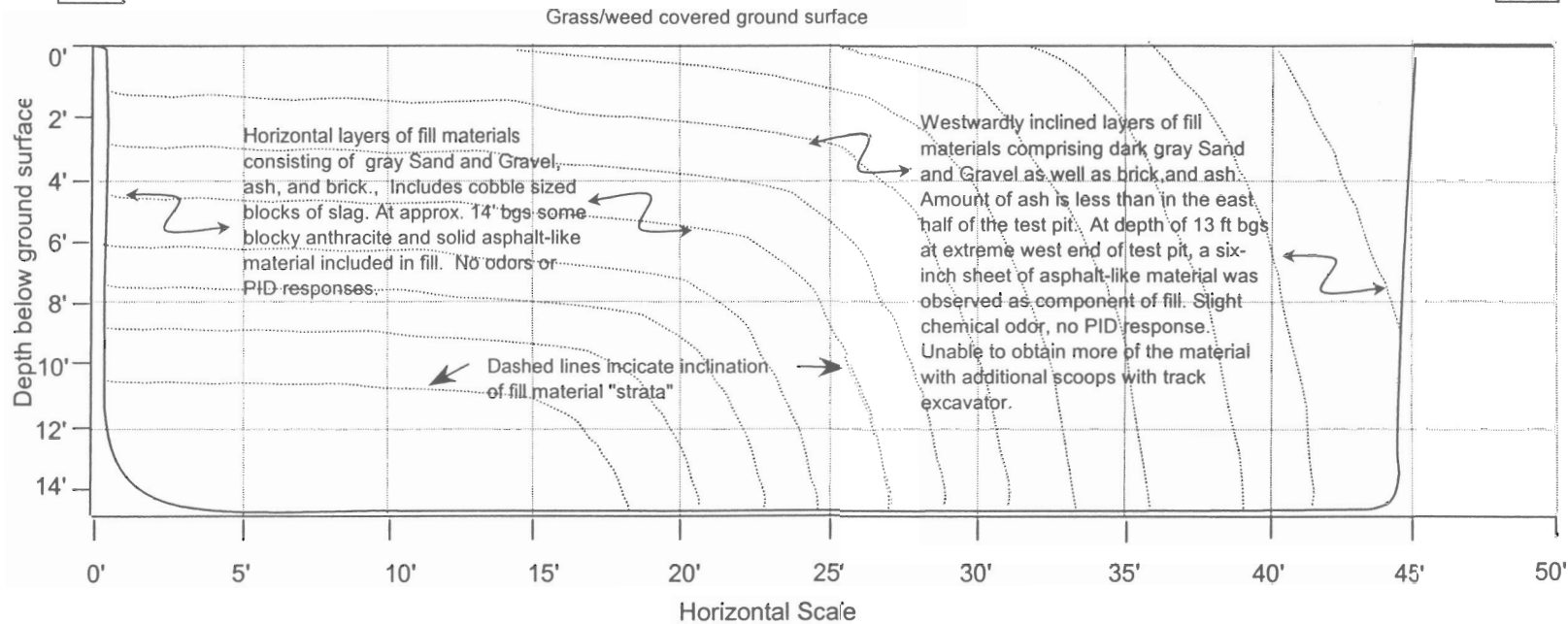
Project: Troy, (Ingalls Ave)
Test Pit No. TP-3
Date: 9/25/2003
Logged By: J. Imhoff
Pit Orientation: East to West

Start Time: 7:20
Final Length 45'
Final Depth 15' (max)
Final Width 5-6 ft.

End Time: 8:35
Weather: Sunny and Clear
Surface Conditions: Level, grass and weeds.

E

W



Notes: No visual or olfactory evidence of suspected residuals observed in test pit.

Excavation to west was terminated at 45 ft because evidence from TP-1 and TP-2 (building walls and nature of materials) suggested that the excavation was extending into material comprising the peninsula rather than the canal basin. Onsite NYSDEC representative agreed that further excavation to the west was not necessary.

Water Influx:

Seepage: NA

Static: NA

Tetra Tech FW, Inc.
TEST PIT LOG

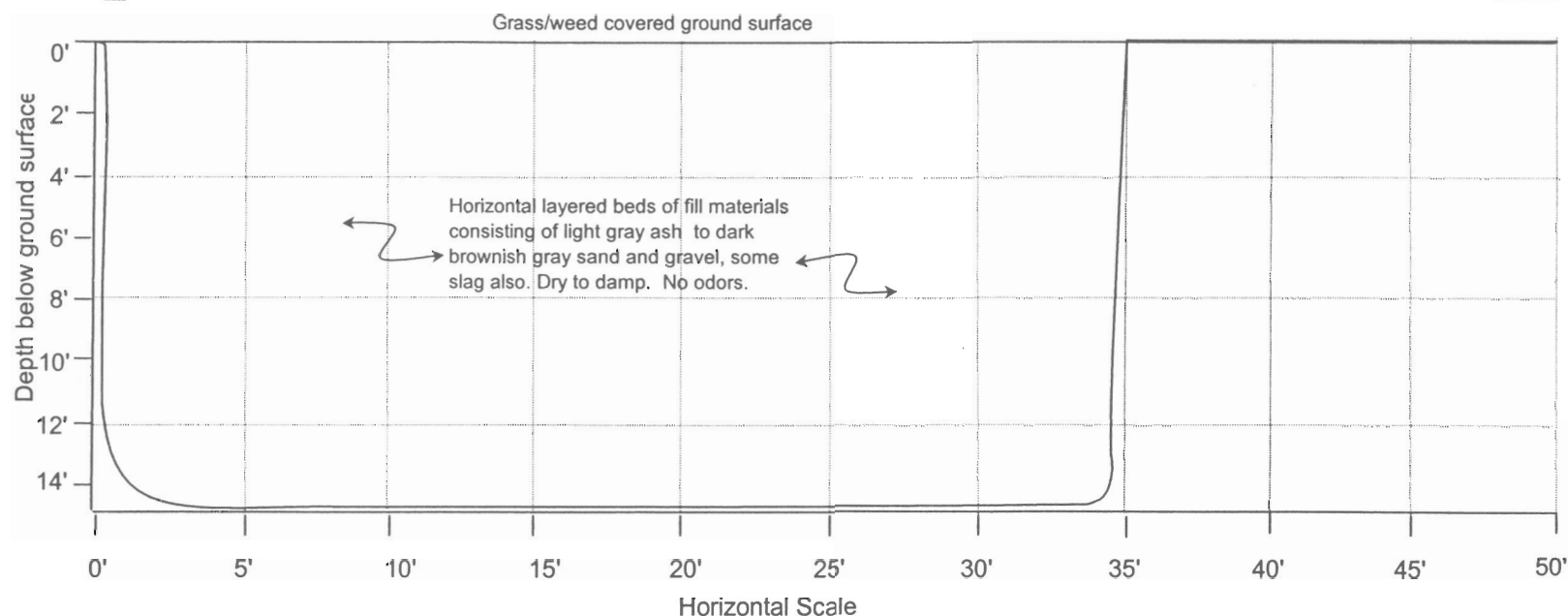
Project: Troy, (Ingalls Ave)
Test Pit No. TP-4
Date: 9/25/2003
Logged By: J. Imhoff
Pit Orientation: East to West

Start Time: 8:45
Final Length 35'
Final Depth 15'
Final Width 5-6 ft.

End Time: 10:15
Weather: Sunny and Clear
Surface Conditions: Level, grass and weeds.

E

W



Notes:

Excavation to west was terminated at 35 ft because evidence from previous test pits (building walls and nature of materials) suggested that the excavation was extending into material comprising the peninsula rather than the canal basin. Onsite NYSDEC representative agreed that further excavation was not necessary.

No visual or olfactory evidence of suspected residuals observed during excavation of the test pit.

Water Influx:

Seepage: NA

Static: NA

Tetra Tech FW, Inc.
TEST PIT LOG

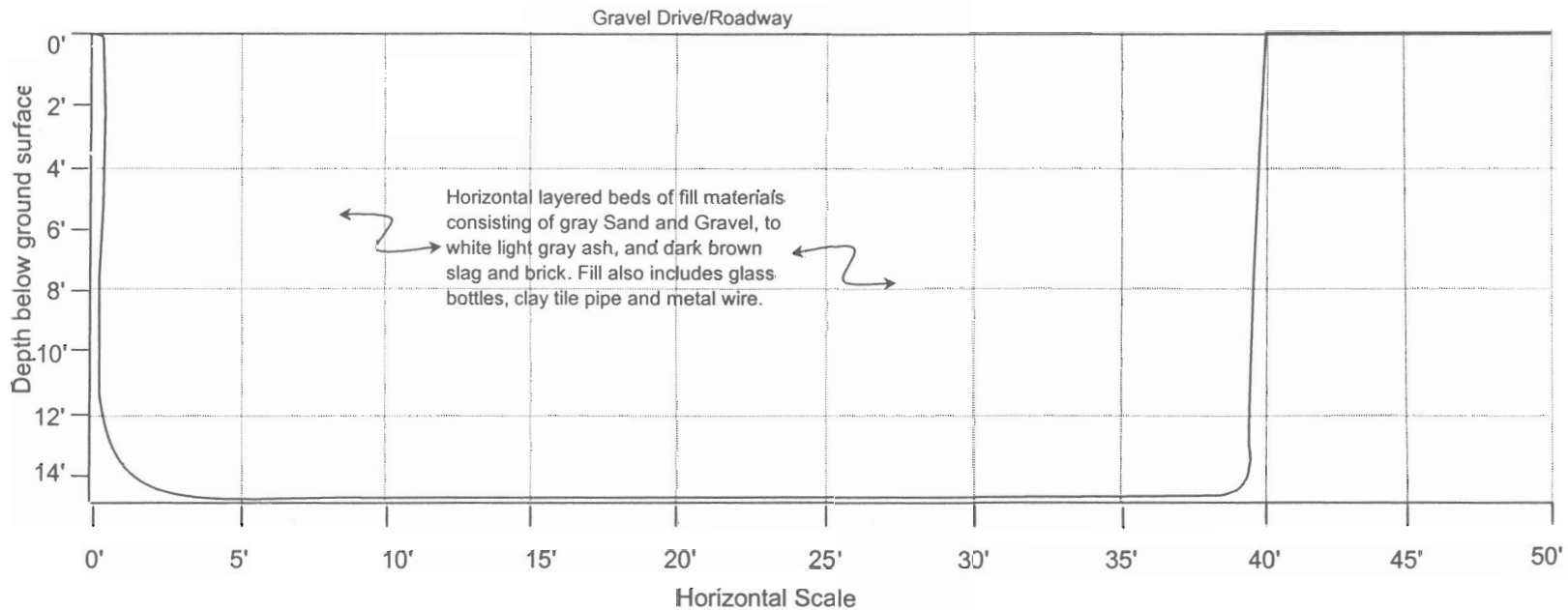
Project: Troy (Ingalls Ave)
Test Pit No. TP-5
Date: 9/25/2003
Logged By: J. Imhoff
Pit Orientation: East to West

Start Time: 10:15
Final Length 40'
Final Depth 15'
Final Width 5-6 ft.

End Time: 11:15
Weather: Sunny and Clear
Surface Conditions: Level, grass and weeds.

E

W



Notes:

No visual or olfactory evidence of suspected residuals observed during excavation of the test pit.
Excavation to west was terminated at 40 ft because evidence from previous test pits (building walls and nature of materials) suggested that the excavation was extending into material comprising the peninsula rather than the canal basin. Onsite NYSDEC representative agreed that further excavation was not necessary.

Water Influx:

Seepage: NA

Static: NA

Tetra Tech FW, Inc.
TEST PIT LOG

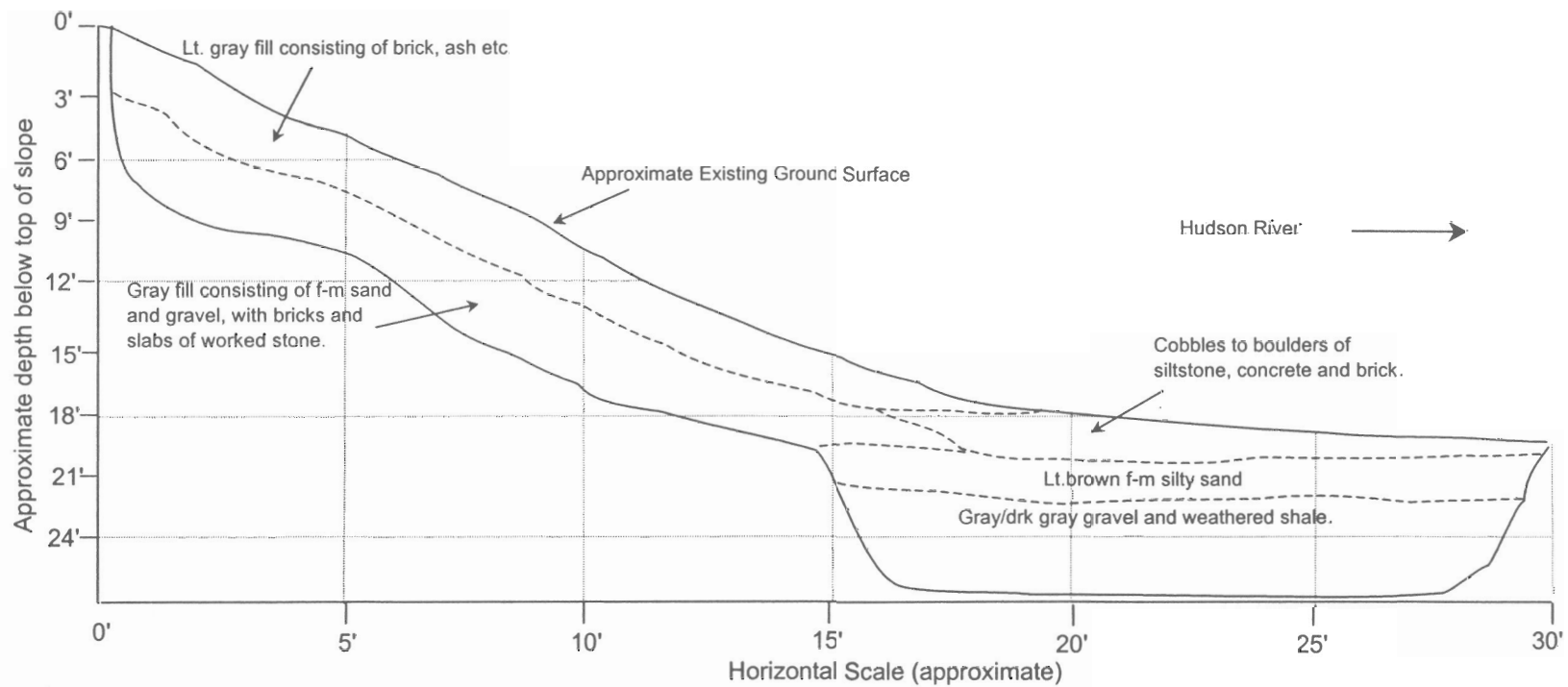
Project: Troy (Ingalls Ave)
 Test Pit No. TP-6
 Date: 9/25/2003
 Logged By: J. Imhoff
 Pit Orientation: East to West

Start Time: 12:00
 Final Length 30' (approximate)
 Final Depth 10' (maximum)
 Final Width 4-5 ft.

End Time: 12:40
 Weather: Overcast
 Surface Conditions: Steep, heavily vegetated embankment.

E

W



Notes: No visual or olfactory evidence of suspected residuals observed in test pit.

This log is a combined representation of three overlapping-adjacent test pits that were excavated on the slope: one excavated at the top of the slope, one in the middle of the slope and the third at the toe of the slope.

Excavation to west stopped as native deposits (sand, gravel, weathered shale) were encountered.

Water Influx:

Seepage: NA

Static: NA

Tetra Tech FW, Inc.
TEST PIT LOG

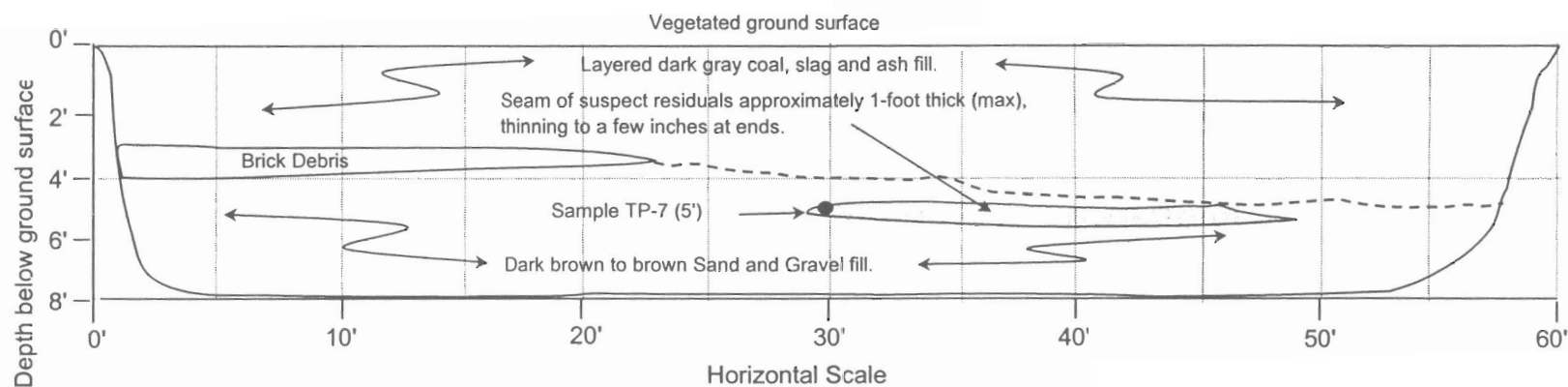
Project: Troy (Ingalls Ave)
Test Pit No. TP-7
Date: 9/25/2003
Logged By: J. Imhoff
Pit Orientation: West to East

Start Time: 13:30
Final Length 60'
Final Depth 8'
Final Width 4-5 ft.

End Time: 15:10
Weather: Overcast with light rain
Surface Conditions: Vegetated hillside, south of roadway.

W

E



Notes: Suspect residuals consist of dark brown, densely matted wood chips with sulfurous odor. Sample TP-7 (5') collected at 14:00 from depth of 5 ft bgs at distance of 30 feet from the west end of the test pit.

Depth of test pit limited due to its proximity to road (Ingalls Ave) and lack of space for stockpiling soils.

Water Influx:
Seepage: NA
Static: NA

**Tetra Tech FW, Inc.
TEST PIT LOG**

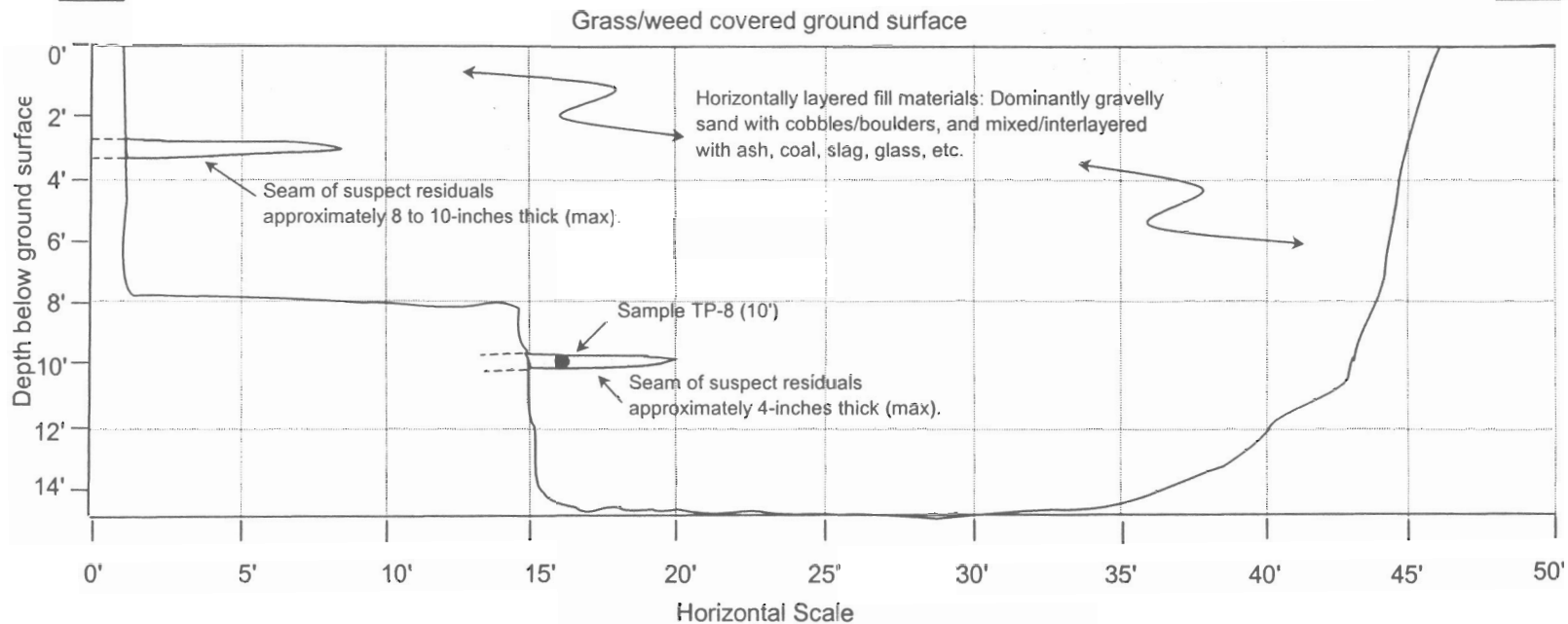
Project: Troy, (Ingalls Ave)
 Test Pit No. TP-8
 Date: 9/25/2003
 Logged By: J. Imhoff
 Pit Orientation: West to East

Start Time: 15:30
 Final Length 46'
 Final Depth 15 (max)
 Final Width 4-5 ft.

End Time: 16:45
 Weather: Rain, heavy at times
 Surface Conditions: Grass and weeds

W

E



Notes: Suspect residuals consist of dark brown, densely matted wood chips with strong, sulfurous odor. Sample TP-8 (10') collected at 16:00 from depth of 10 ft bgs at distance of 16 feet from the west end of the test pit.
 Length defined by limits of limited removal conducted in 1999 and by the location of suspect residuals observed in test pit TP-7.

Water Influx: _____
 Seepage: NA
 Static: NA

APPENDIX B – LABORATORY ANALYTICAL RESULTS



SUMMARY OF ANALYTICAL RESULTS: P894

Sample ID	TP-2-14.5	TP-7-5	TP-8-10
Lab Sample No.	465524	465525	465526
Sampling Date	9/24/2003 0:00	9/24/2003 0:00	9/24/2003 0:00
Matrix	SOLID	SOLID	SOLID
Dilution Factor			
Units			
WET CHEMISTRY			
Total Cyanide (mg/kg)	47.4	195	137

NR - Not analyzed.

U - The compound was not detected at the indicated concentration.

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