



EXCAVATION REPORT

CITY OF HERMANTOWN
WATER MAIN EXTENSION

JUNCTION FOOD-N-FUEL SITE

MPCA LEAK # 3534
HERMANTOWN PUBLIC WORKS SITE # PB4144
TPT # 12E-206

JANUARY, 2013

John Mulder, City Administrator
City of Hermantown
5105 Maple Grove Road
Hermantown, Minnesota 55811

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**EXCAVATION REPORT
CITY OF HERMANTOWN WATER MAIN EXTENSION
JUNCTION FOOD-N-FUEL SITE**

I. INTRODUCTION

PROJECT SETTING

The Junction Food-N-Fuel site contains remnant petroleum impacts to its soil and groundwater, with its groundwater impacts extending to two neighboring properties. The properties and businesses involved are as follows:

- The Junction Food-N-Fuel Property
5493 Miller Trunk Highway
Hermantown, Minnesota
 - Owned by the Curtis Oil company (the project's Responsible Party), the property is now occupied by the Casa Latte Coffee Shop. This property contains the source area of the site's petroleum impacts.

- The Radco Property
5497 Miller Trunk Highway
Hermantown, Minnesota
 - Now occupied by Turbo Diesel and Electric, this property contains one water supply well (PW-5497) which has received petroleum impacts.

- The MMT Heating and Cooling Property
4621 Lindahl Road
Hermantown, Minnesota
 - This property contains one water supply well (PW-4621) which has received petroleum impacts.

Recently, the city of Hermantown commenced an improvement project (Public Works Site # PB4144) involving the extension of one of its municipal water mains northwestward along Highway 53 to the highway's intersection with Highway 194 (Figures 1 and 2). Prior to the project's commencement, it was recognized that a branch line at the water main's new terminus as well as three associated spur lines would be installed in the vicinity of the Junction Food-N-Fuel site's remnant soil contaminant plume. In consideration of this, the MPCA was notified of the city's intentions; a project work plan was compiled and submitted to MPCA Project Manager Amy Miller on April 10th, 2012. Ms. Miller responded with her approval of the work plan on June 1st, 2012.

Parties involved in the project have been as follows:

City of Hermantown **Project Sponsor**
5105 Maple Grove Road
Hermantown, Minnesota 55811
John Mulder, City Administrator 218-729-3600

Salo Engineering, Inc. **Construction Engineering / Design Firm**
4560 Norway Pines Place
Duluth, Minnesota 55811
Douglas Kerfield, Project Manager 218-727-8796

Northland Construction, Inc. **General Contractor**
4843 Rice Lake Road
Duluth, Minnesota 55803
Nathan Fox, Project Manager 218-625-2286

Twin Ports Testing, Inc. **Environmental Consultant**
1301 N. 3rd Street
Superior, Wisconsin 54880
Jon Hinkel, Project Manager 715-392-7114

GENERAL STRATEGY

In the MPCA's authorization to proceed, the following directives were included:

- 1) Any potentially petroleum-impacted soils removed during the excavation needed to be field screened for petroleum-related organic vapors;
- 2) those soils registering below 10 parts per million (ppm) organic vapors could be returned to the excavation as unregulated backfill;
- 3) those soils registering between 10 ppm and 200 ppm organic vapors could be reused as backfill, but only under specified conditions;
- 4) those soils registering above 200 ppm organic vapors could not be returned to the excavated areas, but had to be disposed of off-site at an MPCA-approved facility.

II. METHODS AND PROCEDURES

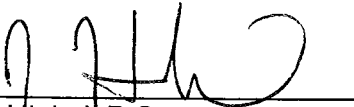
The city of Hermantown's excavation in the vicinity of the Junction Food-N-Fuel site commenced in mid-November, 2012. The excavation work was conducted in stages, each corresponding to specific section installations of the new water line components, with several soil stockpiles generated over the course of the project. The individual excavations at each stage were kept open for only limited times as needed to complete each line section's installation. In the areas close to the Junction Food-N-Fuel site's remnant soil contaminant plume, excavation backfilling commenced only after stockpile field screening was completed and clearance to backfill was given.

Twin Ports Testing (TPT) visited the site during each excavation stage for observation, soil sampling and field screening, and to document the excavation's progress. Stockpiled soil samples and excavation sidewall soil samples were collected and field screened for petroleum-related organic vapors using a portable photoionization detector (equipped with a 10.6 eV lamp and calibrated to an isobutylene standard prior to field activities). The field screening procedure included sealing the collected soil samples in individual disposable plastic bags, and an allowance of a minimum of 10 minutes to develop potential petroleum vapors within the plastic bag head-spaces. The sample bags were then entered with the instrument probe and the resulting organic vapor readings were recorded.

The excavation was observed by TPT on November 20th, 28th, and December 13th, 2012. Materials encountered during the excavation included mostly brown sandy, silty clay till with minor gravel and cobbles. A minor peat layer measuring approximately ½ foot in thickness was observed at approximately 6 feet deep along the southeastern portion on the excavation's sidewall. No appreciable groundwater was observed to collect within any of the portions of the excavation at any time.

Results of the soil sample field screening are listed in Table 1. Over the course of the excavation, the excavated soil stockpile samples' field screening results ranged between 0.0 and 6.1 ppm organic vapors. Field screening results from the excavations' sidewall samples ranged between 0.0 and 8.4 ppm organic vapors. As no excavated soils were observed to exceed 10 ppm in their organic vapor readings, all stockpiled soils were returned to the excavation as unregulated backfill. No soils were removed from the site for off-site disposal. The city of Hermantown's excavation activities at the site were completed December 13th, 2012.

This report was completed January 17th, 2013.
Twin Ports Testing, Inc.



Jon Hinkel, P.G.
Senior Project Manager
Environmental Department.

attachments: Figure 1: Site Location Map
Figure 2: Site Map Showing Planned Water Line Route
Figure 3: Excavation Diagram

Table 1: Field Screening Readings

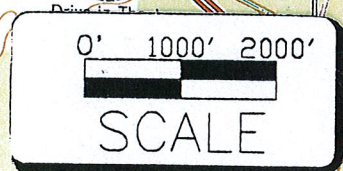

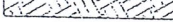


Figure 1
Site Location
Junction Food-N-Fuel Site
Hermantown, Minnesota
Adolph and West Duluth
USGS 7½' Quadrangles

LEGEND

-  FILTER LOG TYPE STRAW LOG
-  EROSION BLANKET

PELTO PROPERTIES LLC
395-0035-00050

APPROXIMATE SOIL
CONTAMINATION AREA

USAN ARTHUR M. ETUX
395-0010-00701

CURTIS FAMILY
LIMITED PARTNERSHIP
395-0010-00702

LINDAHL RD

POND

R.O.W.

SPUR 4

SPUR 1

SPUR 2

SPUR 3

MAIN WATER
LINE

BRANCH
LINE

U.S. HWY 53 MILLER TRUNK HWY.

U.S. HIGHWAY 194

STATE OF MN
395-0010-00710
R.O.W.

MCDONALD JOHN E
395-0010-00763

R.O.W.
DOUGHERTY DANIEL D
395-0010-00955



SCALE
0 25 50'

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

DAVID SALO
PRINTED NAME

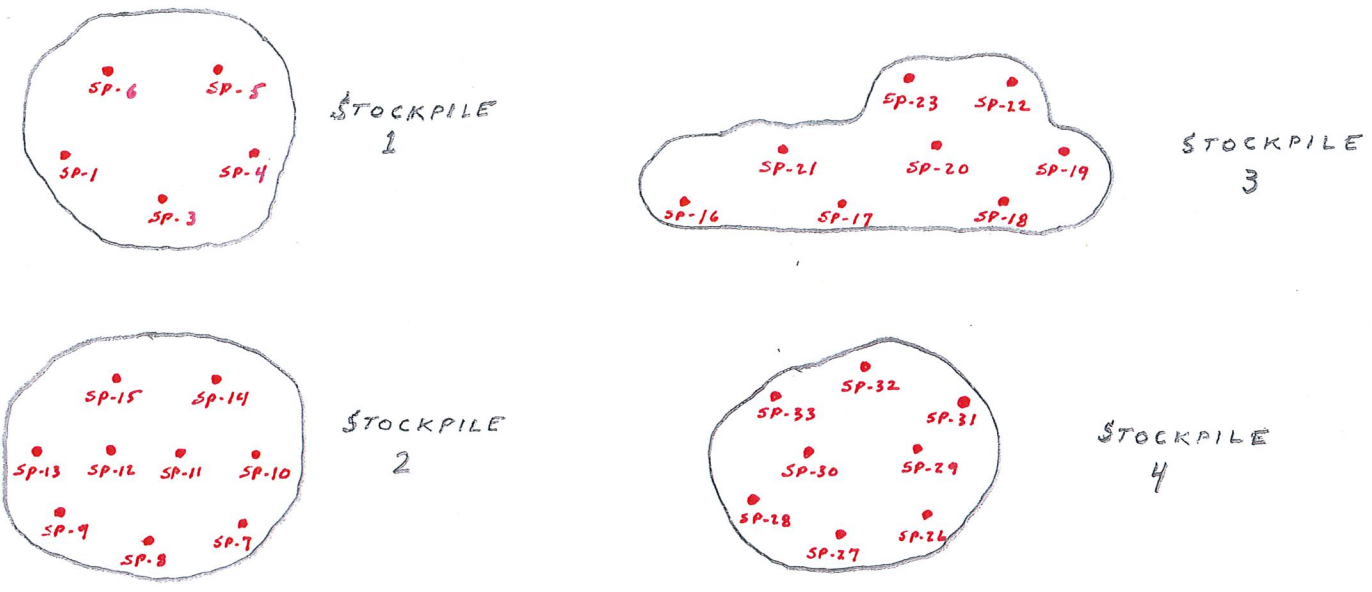
1					
2	DATE				
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EROSION CONTROL
WATER DISTRICT 314R - U.S. HIGHWAY 53

4					
5					
6					
NO	DATE	REVISION	BY	JOB NO.	E 1894B

Figure 2
Site Map Showing Planned Water Line
Component Installations
Intersection of Highways 53 and 194
Hermantown, Minnesota
(Salo Engineering Files)

STOCKPILE DIAGRAMS



© MW-2 MONITORING WELL

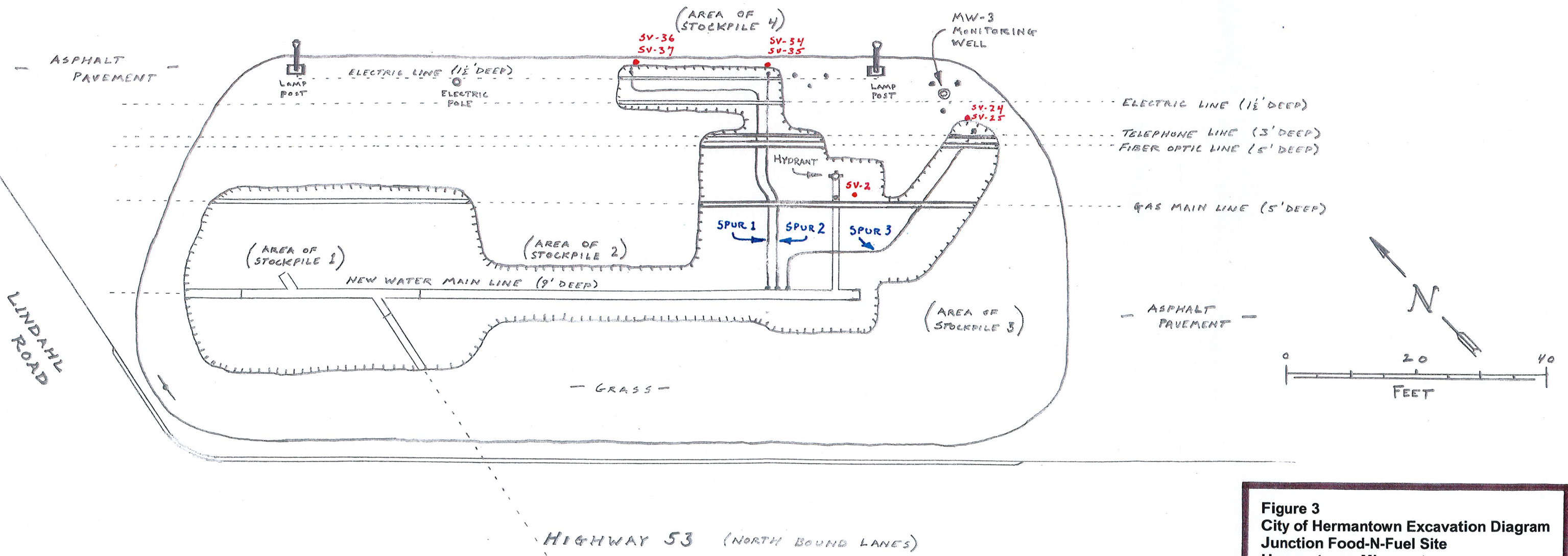
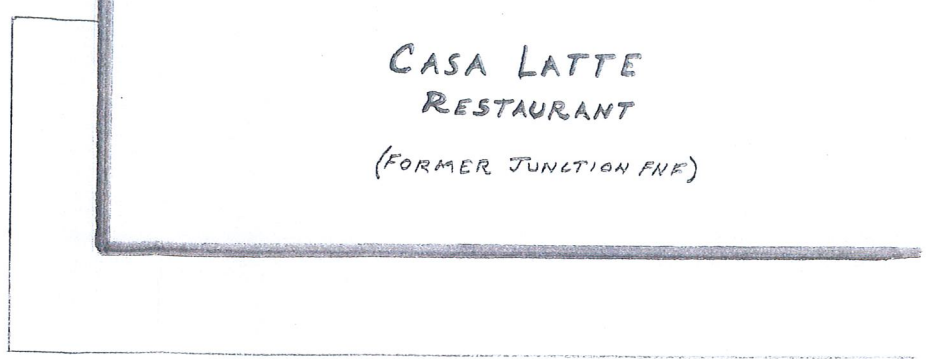


Figure 3
 City of Hermantown Excavation Diagram
 Junction Food-N-Fuel Site
 Hermantown, Minnesota
 (TPT rendering, 1/16/13)

TABLE 1

FIELD SCREENING READINGS
CITY OF HERMANTOWN EXCAVATION
JUNCTION FOOD-N-FUEL SITE

Sample Location	Sample Number	Depth	Field Screening Reading
stockpile 1	SP-1	--	0.0
excavation	SV-2	9'	8.4
stockpile 1	SP-3	--	0.0
	SP-4	--	0.0
	SP-5	--	0.0
	SP-6	--	0.0
stockpile 2	SP-7	--	0.2
	SP-8	--	0.0
	SP-9	--	0.2
	SP-10	--	0.0
	SP-11	--	0.0
	SP-12	--	0.0
	SP-13	--	0.0
	SP-14	--	0.0
stockpile 3	SP-15	--	0.0
	SP-16	--	0.0
	SP-17	--	0.0
	SP-18	--	0.0
	SP-19	--	1.6
	SP-20	--	0.0
	SP-21	--	0.0
	SP-22	--	0.0
SP-23	--	0.0	

Sample Location	Sample Number	Depth	Field Screening Reading
excavation	SV-24	4'	0.0
	SV-25	7.5'	0.0
stockpile 4	SP-26	--	0.0
	SP-27	--	0.0
	SP-28	--	0.0
	SP-29	--	1.3
	SP-30	--	0.0
	SP-31	--	0.2
	SP-32	--	6.1
excavation	SP-33	--	0.2
	SV-34	4'	0.0
	SV-35	7.5'	0.0
	SV-36	4'	0.0
	SV-37	7.5'	0.0

Notes:

All field screening readings are given in parts per million petroleum-related organic vapors.

All depths are given in feet below the surface.

Detections are given in **bold** type.