



Minnesota Pollution Control Agency

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Monitoring Report Guidance Document 4-08

This form must be completed annually for Minnesota Pollution Control Agency (MPCA) review following the submittal of Guidance Document 4-06 *Investigation Report Form*. Under certain circumstances MPCA staff may request submittal of this form on an alternate schedule (e.g., quarterly, semi-annually).

All site monitoring results and additional work activities requested by the MPCA must be included and used to support the site management decision. Include any additional information that is important for making the site management decision. Refer to MPCA Guidance Document 1-01 *Petroleum Remediation Program General Policy* for the overall site investigation objectives and to other MPCA guidance documents for details on investigation methods. Do not revise or delete any text from this report form. Attach all applicable figures, tables, and appendices, and indicate those that have been updated during this reporting period. **All data provided must be cumulative.**

MPCA Site ID: Leak00017358

Date: August 24, 2009

Responsible Party Information

Name: City of Minneapolis – Cam Haugland
Street/Box: 1200 Currie Avenue North
City, Zip: Minneapolis, MN 55403

Phone #: 612-673-5425

Alternate Contact (if any) for Responsible Party:

Phone #:

Leak Site Information

Leak Site Name: Minneapolis Fleet Services

Phone #: 612-673-5425

Leak Site Address: 1911 26th Street

City: Minneapolis

Zip Code: 55401

County: Hennepin

Environmental Professional Information

By signing this document, I/we acknowledge that we are submitting this document on behalf of and as agents of the responsible person or volunteer for this leak site. I/we acknowledge that if information in this document is inaccurate or incomplete, it will delay the completion of remediation and may harm the environment and may result in a reduction in Petrofund reimbursement. In addition, I/we acknowledge on behalf of the responsible person or volunteer for this leak site that if this document is determined to contain a false material statement, representation, or certification, or if it omits material information, the responsible person or volunteer may be found to be in violation of Minn. Stat. § 115.075 (2007) or Minn. R. 7000.0300 (Duty of Candor), and that the responsible person or volunteer may be liable for civil penalties.

MPCA staff are instructed to reject unsigned reports and reports that have been altered.

<u>Name and Title of Report Author(s)</u>	<u>Signature</u>	<u>Date Signed</u>
Dennis P. McComas		8/24/09
Erik A. Brenegan		8/24/09

<u>Name and Title of Report Reviewer(s)</u>	<u>Signature</u>	<u>Date Signed</u>
_____	_____	_____
_____	_____	_____

Name(s) of Field Technician(s): _____

Company and mailing address:

Thatcher Engineering, Inc.
Dennis P. McComas, PG
3055 Old Highway 8, Suite 103
Minneapolis, MN 55418
612-781-2188

Section 1: Work Completed

- 1.1 Describe all site work completed since the *Investigation Report Form* or the last *Monitoring Report* was submitted. This should include both field and non-field related activities.

The last report submitted for MPCA review was the General Excavation Report Worksheet dated January 13, 2009. Two additional soil borings were completed on March 27, 2009 per the scope of the additional work requested in correspondence from the MPCA dated February 23, 2009. The additional work included two additional soil borings to be located in a tank and pump island location with collection of soil and groundwater samples. This report documents the results of the soil borings, laboratory chemical analysis and additional information on property use in the vicinity of the site.

- 1.2 If additional work requested in the most recent MPCA correspondence has not been completed, explain why.

Section 2: Observation and Analytical Results

2.1 Soil and Ground Water Results

Two additional soil borings were completed at the site. GP-2 was advanced in the location of a former 15,000-gallon gasoline UST. GP-3 was advanced in the location of the former pump islands. No Diesel Range Organics (DRO), Benzene, Toluene Ethylbenzene, Xylenes (BTEX), MTBE, or GRO were detected in the soil samples obtained from GP-2 (27-29) and GP-3 (25-27). No BTEX or DRO was detected in GP-1.

As discussed in the previous Excavation Report, DRO was detected in a groundwater sample obtained from GP-1 at a concentration of 750 micrograms per liter (ug/L). DRO was detected in GP-3 at a concentration of 310 ug/L. No petroleum constituents were detected in GP-2.

The non-petroleum compounds trichloroethene (GP2) and chloroform (in GP-3) were detected in groundwater samples at concentrations above the method detection limits. Chloroform was detected at 23.3 ug/L in GP-3 which is below the HRL of 30 ug/L. Trichloroethene was detected at 1.4 ug/L in GP-2 which is below the HRL of 5 ug/L.

2.2 Field-Detectable Vapors (photoionization detector, explosimeter, etc.)

Discuss the results of any additional follow-up field vapor monitoring. Include a description of each vapor monitoring location and an explanation of monitoring methods and instruments used. Interpret the cumulative results as related to the identified receptors.

As discussed in the previous Excavation Report, elevated vapor readings were encountered in GP-1 at depths of 6-8 feet (16.4 ppm) in the location of the former 15,000-gallon UST. No elevated vapor readings were encountered in GP-2 and GP-3 to the completed depths of 35 feet. Please refer to the Excavation Report for vapor readings observed during tank excavation.

NOTE: If vapor concentrations exceed 10 percent of the lower explosive limit, exit the building and contact the local fire department immediately. Then contact the Minnesota Duty Officer (24 hours) at 651-649-5451 (metro and outside Minnesota) or 1-800-422-0798 (Greater Minnesota). TTY users call 651-297-5353 (V/TTY) or 1-800-627-3529 (V/TTY).

2.3 Vapor Intrusion (soil gas, sub-slab, indoor, ambient)

Discuss the results of any follow-up vapor intrusion assessment (VIA) activities including a description of each VIA sampling location and an interpretation of the results with respect to receptors.

2.4 Free Product

If free product is present, discuss what activities are being completed to measure and recover it. Describe the effectiveness of the recovery efforts and free product trends over the course of the investigation. Complete Table 14 and discuss the data compiled to date.

2.5 Other (e.g., surface water, contaminated surface soil, etc.)

Discuss the results of any additional monitoring or subsurface investigation conducted during this reporting period. Identify all monitoring locations on an attached site map by labeling each location. A description of sampling methods, including the instruments used, must be included in Section 6.

2.6 Site Conceptual Model

Discuss any changes to the overall site conceptual model that has altered the current site management decision based upon the information presented in this report.

Section 3: Site Management Decision

The site management decision should be based on the Program's objectives described in Guidance Document 1-01 *Petroleum Remediation Program General Policy*.

3.1 Recommendation for site:

- site closure
- additional ground water monitoring
- additional field-detectable vapor monitoring
- additional soil or ground water investigation
- additional soil gas/vapor intrusion investigation
- corrective action

3.2 If closure is recommended, summarize significant investigative events and describe how the site-specific exposure pathways identified in the site conceptual model (SCM) have been adequately addressed.

In addition to the soil borings, information regarding the uses of surrounding properties was requested. Please refer to Figure 3 for a depiction of property use. The properties north of 26th Street East and west of the alley that borders the site property to the west are residential properties. An addition to the building adjacent to the USTs (1911 26th Street East, depicted on Figure 2) was completed in the location of the former USTs. The buildings adjacent to 1911 26th Street East are being renovated to offices along with one building located to the east. With the exception of the existing service garages located to the southwest of the site property, the adjacent asphalt plant and associated buildings are being demolished for replacement with a City of Minneapolis service garage.

Based on the results of the additional soil borings and analytical results of soil and groundwater, the remaining contamination appears to be highest in the immediate vicinity of the former 15,000-gallon diesel UST. Significant soil and groundwater contamination does not appear to be present in the locations of the former dispensers or former 15,000-gallon gasoline UST. Based on the results of the additional soil borings, a full Limited Site Investigation does not appear to be warranted at this time. We recommend that the leak site be granted regulatory closure.

3.3 If additional monitoring or subsurface investigation is recommended, provide details of all proposed activities (e.g., monitoring locations, sampling frequency, target analytes, additional monitoring wells, soil borings). Continue ground water monitoring and sampling in accordance with the previously-approved schedule until the MPCA responds to this report.

3.4 If additional vapor intrusion investigation is recommended, provide details of proposed activities such as completing an indoor building survey, sub-slab vapor sampling, indoor air sampling, or locations for additional soil gas sampling.

3.5 If corrective action is recommended, provide a conceptual approach by completing Guidance Document 4-19 *Conceptual Corrective Action Design Worksheet* and include in Section 6. See Guidance Document 4-10 *Elements of the Corrective Action Design* for more information on the corrective action design process and other requirements. (Note: If a *Conceptual Corrective Action Design Worksheet* is submitted, MPCA staff will review this report at a higher-than-normal priority to determine if corrective action is required.)

Section 4: Figures

Attach the following figures in the order listed below. All figures must include a north arrow, scale, and legend. Approximate scales are not acceptable.

- Site Location Map using a U.S. Geological Survey 7.5 minute quadrangle map.
- One or more Site Maps showing:
 - Structures
 - Locations and depths of on-site buried utilities

- All past and present petroleum storage tanks, piping, dispensers, and transfer areas
- Extent of soil excavation
- Boring and well locations (including any drinking water wells on site)
- Horizontal extent of soil contamination
- Extent of contaminated surface soil
- Horizontal extent of ground water contamination
- Horizontal extent of NAPL
- Location of end points for all geologic cross sections
- Potential pathways that lead to surface water features within ¼ mile of the site

Distinguish sequential elements of investigations by dates, symbols, etc. in the key.

- Updated ground water gradient contour maps using water level elevations from each monitoring event since the last report. Show all wells at the site, and differentiate wells constructed in different aquifers. Label ground water contours and elevations at each data point used for contouring.
- Hydrograph for all monitoring and recovery wells.
- Graph(s) showing contaminant concentrations over time for all monitoring and recovery wells.
- Potential Receptor Map (scale 1 inch = 50 to 100 feet), centered on the release area, showing property boundaries and roads, and potential receptors such as buildings, water wells, underground utilities (distinguish between water, storm sewer, and sanitary sewer), surface waters, ditches, and any other pertinent items within 500 feet of the release source.
- Vapor Survey Map showing utilities and buildings with basements and monitoring locations within 500 feet (if a survey was required). If the survey area has been expanded beyond 500 feet, adjust the map to encompass the entire surveyed area.
- Vapor Intrusion Assessment Map showing all vapor intrusion samples and receptors at and within the 100-foot preliminary assessment area. If the assessment area has been expanded beyond 100 feet, adjust the map to encompass the entire assessment area.

Section 5: Tables

Attach all tables from the *Investigation Report Form* and indicate those that have been updated during this reporting period by marking the check box below. **Tables must include all cumulative data.**

Updated	Table Number and Name
<input type="checkbox"/>	Table 1. Tank Information
<input checked="" type="checkbox"/>	Table 2. Results of Soil Headspace Screening
<input checked="" type="checkbox"/>	Table 3. Analytical Results of Soil Samples
<input type="checkbox"/>	Table 4. Other Contaminants Detected in Soils (Petroleum or Non-petroleum Derived)
<input type="checkbox"/>	Table 5. Contaminated Surface Soil Results
<input checked="" type="checkbox"/>	Table 6. Water Level Measurements and Depths of Water Samples Collected from Borings
<input checked="" type="checkbox"/>	Table 7. Analytical Results of Water Samples Collected from Borings
<input checked="" type="checkbox"/>	Table 8. Other Contaminants Detected in Water Samples Collected from Borings (Petroleum or Non-petroleum Derived)
<input type="checkbox"/>	Table 9. Monitoring Well Completion Information
<input type="checkbox"/>	Table 10. Water Level Measurements in Wells
<input type="checkbox"/>	Table 11. Analytical Results of Water Samples Collected from Wells
<input type="checkbox"/>	Table 12. Other Contaminants Detected in Water Samples Collected from Wells (Petroleum or Non-petroleum Derived)
<input type="checkbox"/>	Table 13. Natural Attenuation Parameters
<input type="checkbox"/>	Table 14. Free Product Recovery
<input type="checkbox"/>	Table 15. Properties Located within 500 feet of the Release Source
<input type="checkbox"/>	Table 16. Water Supply Wells Located within 500 feet of the Release Source and Municipal or Industrial Wells within ½ mile
<input type="checkbox"/>	Table 17. Surface Water Receptor Information
<input type="checkbox"/>	Table 18. Utility Receptor Information
<input type="checkbox"/>	Table 19. Vapor Survey Results
<input type="checkbox"/>	Table 20. Results of Soil Gas Sampling for Vapor Intrusion Screening

**Table 1
Tank Information**

Tank #	Tank ** Material	UST or AST	Capacity (gallons)	Contents (product type)	Year installed	Tank Status*	Condition of Tank
001	F	UST	15,000	Gasoline	~1994	Removed (7/9/08)	Good
002	F	UST	15,000	Diesel	~1994	Removed (7/9/08)	Good

¹ "F" for fiberglass or "S" for Steel

² Indicate: removed (date), abandoned in place (date), or currently in use.

Add additional rows as needed.

Notes:

**Table 2
Results of Soil Headspace Screening**

Depth (ft)	Soil Boring ID																			
	GP-1	GP-2	GP-3																	
6-8	16.4	0.0	0.0																	
8-10	1.2	0.0	0.0																	
11-13	0.0	0.0	0.0																	
13-15	0.0	0.0	0.0																	
16-18	0.0	0.0	0.0																	
18-20	0.0	0.0	0.0																	
21-23	0.0	0.0	0.0																	
23-25	0.0	0.0	0.0																	
27-29	0.0	0.0	0.0																	
30-32	0.0	0.0	0.0																	
32-35	0.0	0.0	0.0																	

List instruments used and discuss field methods and procedures in Section 6. Add additional rows as needed, and copy the entire table if more columns are needed.

Notes:

**Table 3
Analytical Results of Soil Samples¹**

Boring ID	Sampled Depth (ft)	Date Sampled	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	GRO	DRO	Lab Type ²
GP-1	24-26	12/1/08	<0.057	<0.057	<0.057	<0.17	-	-	<7.1	Fixed
GP-2	27-29	3/27/09	<0.056	<0.056	<0.056	<0.17	<0.22	<5.6	-	Fixed
GP-3	25-27	3/27/09	<0.057	<0.057	<0.057	<0.17	<0.23	<5.7	<5.8	Fixed

¹ Report results in mg/kg. Use less than symbols to show detection limit.

² Indicate "mobile" or "fixed" in the lab type column.

Add additional rows as needed.

Notes:

Table 7
Analytical Results of Water Samples Collected from Borings¹

Boring ID	Date Sampled	Sampled Depth (ft)	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	GRO	DRO	Lab Type ²
GP-1	12/1/08	24.82	<1.0	<0.050	<1.0	<3.0	-	-	750	Fixed
GP-2	3/27/09	28.2	<1.0	<1.0	<1.0	<3.0	<1.0	<100	-	Fixed
GP-3	3/27/09	25.9	<1.0	<1.0	<1.0	<3.0	<1.0	<100	310	Fixed
Trip Blank										
Equip. Blank										
Lab Blank										
HRL ³			3	1,000	700	10,000	-----	NA	NA	

¹ Report results in µg/L. Use less than symbols to show detection limit.
² Indicate “mobile” or “fixed” in the lab type column.
³ See <http://www.health.state.mn.us/divs/eh/groundwater/hrltable.html> for list of current HRLs.
 Add additional rows as needed.
 Notes:

Table 8
Other Contaminants Detected in Water Samples Collected from Borings (Petroleum or Non-petroleum Derived)¹

Boring ID	Date Sampled	Sampled Depth (ft)	Trichloroethene	Chloroform	Lab Type ²
GP-1	12/1/08	24.82	-	-	Fixed
GP-2	3/27/09	28.2	1.4	<1.0	Fixed
GP-3	3/27/09	25.9	<1.0	23.3	Fixed
Trip Blank	3/27/09	-	<1.0	<1.0	Fixed
Equip. Blank					
Lab Blank					
HRL ³			5	30	

¹ Report results in µg/L. Use less than symbols to show detection limit.
² Indicate “mobile” or “fixed” in the lab type column.
³ See <http://www.health.state.mn.us/divs/eh/groundwater/hrltable.html> for list of current HRLs.
 Indicate other contaminants (either petroleum or non-petroleum derived) detected in water samples collected from soil borings and temporary wells. Add additional rows as needed, and copy the entire table if more columns are needed.
 Notes: NE = No established HRL.

Table 9
Monitoring Well Completion Information¹

Well Number	MDH Unique Well Number	Date Installed	Surface Elevation	Top of Casing Elevation	Bottom of Well Elevation	Screen Interval (Elev. - Elev.)	Total Well Depth from Surface (ft)

Table 15
Properties Located within 500 feet of the Release Source

Prop ID ¹	Property Address	Distance From Site (ft)	Water Supply Well			Public Water Supply		Base-ment (Y/N)	Sump (Y/N)	Possible Petroleum Sources (Y/N)	Comments (including property use)
			Well Present (Y/N)	How Determined ²	Well Use ³	Utilized (Y/N)	Confirmed by City (Y/N)				
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

¹ Property IDs should correspond to labeled properties in the Potential Receptor Map.

² For example, visual observation, personal contact, telephone, returned postcard, assumed (i.e., no postcard returned).

³ For example, domestic, industrial, municipal, livestock, lawn/gardening, irrigation.

Add additional rows as needed.

Notes:

Table 18
Utility Receptor Information

Utility ID ¹	Description	Construction Material	Depth to Top of Structure	Diameter	Flow Direction (for liquids)	Year Installed	Backfill Material	Distance to Water Table
Ex 1	Sanitary sewer main between Main St and 1 st Ave	PVC	7 ft	2 ft	West	1984	Sand	Top of structure at water table
Ex 2	Water main between Main St and 1 st Ave	Polyethylene	8 ft	4 in	West	1996	Sand	1 ft below water table
Ex 3	On-site water service line	Copper	6 ft	2 in	South	1980	Native soils	1 ft above water table
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

¹ ID should correspond to an identified utility line on the Potential Receptor Map.
Add more rows as needed.

Notes:

Utility ID ¹	Name, title, and telephone number for public entity contacted to obtain information or other source of information
Ex 1, 2	Mary Smith, City Engineer, XXX-XXX-XXXX
Ex 3	Site owner

¹ IDs should correspond to the same IDs in the above table.
Add more rows as needed.

Notes:

Section 6: Appendices

Attach all required or applicable appendices in the following order. Indicate those appendices that are included in this report by marking the check box. The appendix section of the report contains sufficient information to document all activities completed since the last report. All reproduced data must be legible. Reports missing required documentation are subject to rejection.

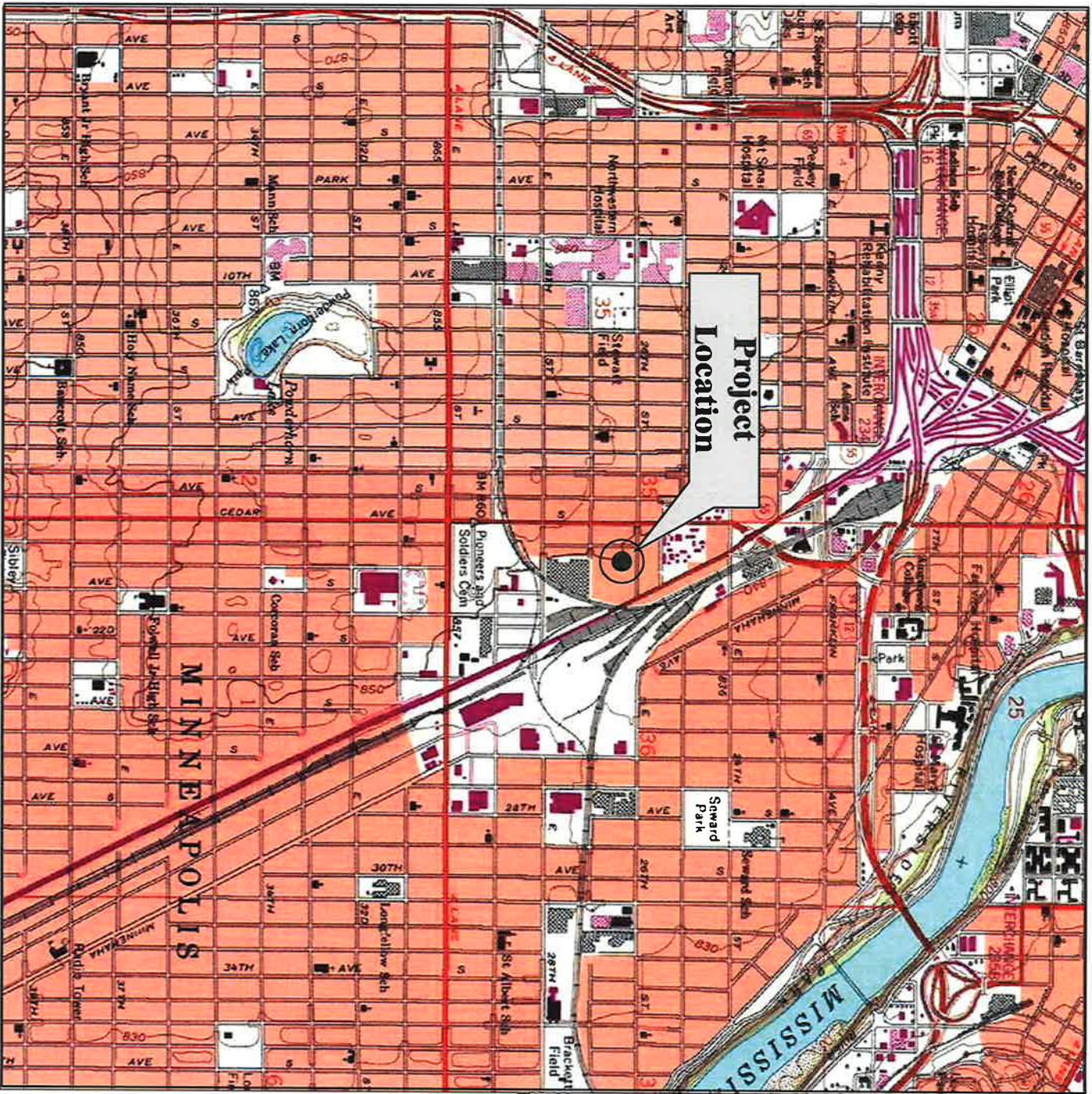
- Appendix A* Copies of most recent laboratory analytical reports for Soil, Soil Gas/Sub-slab Vapor/Indoor Air/Ambient Air, and Ground Water samples, including a copy of the Chain of Custody. Include laboratory QA/QC data, Chromatograms, and MIDH laboratory certification number.
- Appendix B* Methodologies and Procedures, Including Field Screening of Soil, Other Field Analyses, Soil Boring, Soil Sampling, Soil Gas/Sub-Slab/Indoor air/Ambient Air Sampling, Well Installation, and Water Sampling.
- Appendix C* Geologic Logs of Additional Soil Borings and Wells Installed. Include Well Construction Diagrams and Copies of the Minnesota Department of Health Well Record for new wells.
- Appendix D* Field or sampling data sheets (sampling forms, field crew notes, etc.).
- Appendix E* Guidance Document 1-03a *Spatial Data Reporting Form* (if not previously submitted or new site features need to be reported).
- Appendix F* Guidance Document 2-05 *Release Information Worksheet* (if not previously submitted).
- Appendix G* Guidance Document 4-19 *Conceptual Corrective Action Design Worksheet*.

Web pages and phone numbers

MPCA staff	http://www.pca.state.mn.us/pca/staff/index.cfm
MPCA toll free	1-800-657-3864
Petroleum Remediation Program web page	http://www.pca.state.mn.us/programs/just_p.html
MPCA Info. Request	http://www.pca.state.mn.us/about/inforequest.html
MPCA VIC program	http://www.pca.state.mn.us/cleanup/vic.html
MPCA Petroleum Brownfields Program	http://www.pca.state.mn.us/programs/vpic_p.html
MPCA SRS guidance documents	http://www.pca.state.mn.us/cleanup/riskbasedoc.html http://www.pca.state.mn.us/cleanup/riskbasedoc.html#surfacewaterpathway http://www.health.state.mn.us/divs/eh/groundwater/hrtable.html
MDH HRLs	1-800-818-9318
MDH DW hotline	http://www.state.mn.us/cgi-bin/portal/mn/jsp/content.do?id=-536881377&agency=Commerce
Petrofund Web Page	651-215-1775 or 1-800-638-0418
Petrofund Phone	651-649-5451 or 1-800-422-0798
State Duty Officer	

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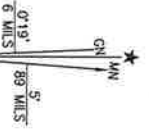
Figures



R24W

T29N

Magnetic North



UTM GRID AND 1983 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

USGS 7.5 Min Quadrangle: Minneapolis South, Minnesota

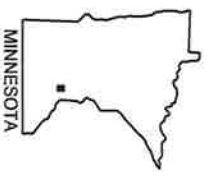
Site Location: NE¹/₄ of the SE¹/₄ of the NW¹/₄ of Section 26
SCALE 1:24000

Latitude: 44° 57' 19.09"
Longitude: 93° 14' 41.10"



CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

Quad Location



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FIGURE:

1

PROJECT TITLE: Mpls. Fleet Services

DRAWING TITLE: USGS Quad Map

PROJECT LOCATION: Minneapolis, MN

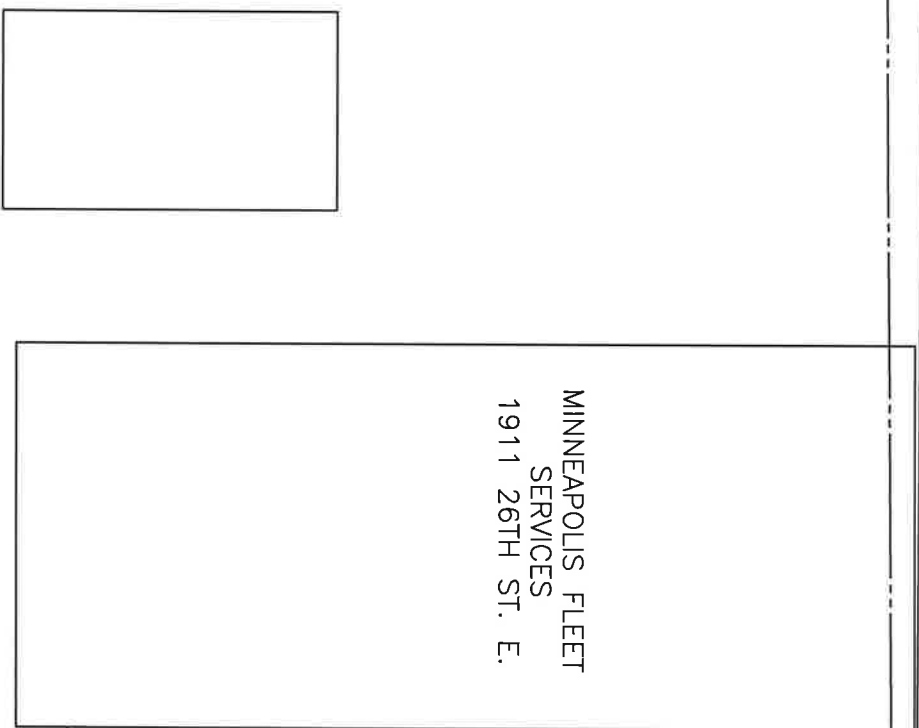
PROJECT #:

SCALE: 1"=200'
DRAWN BY: EMS

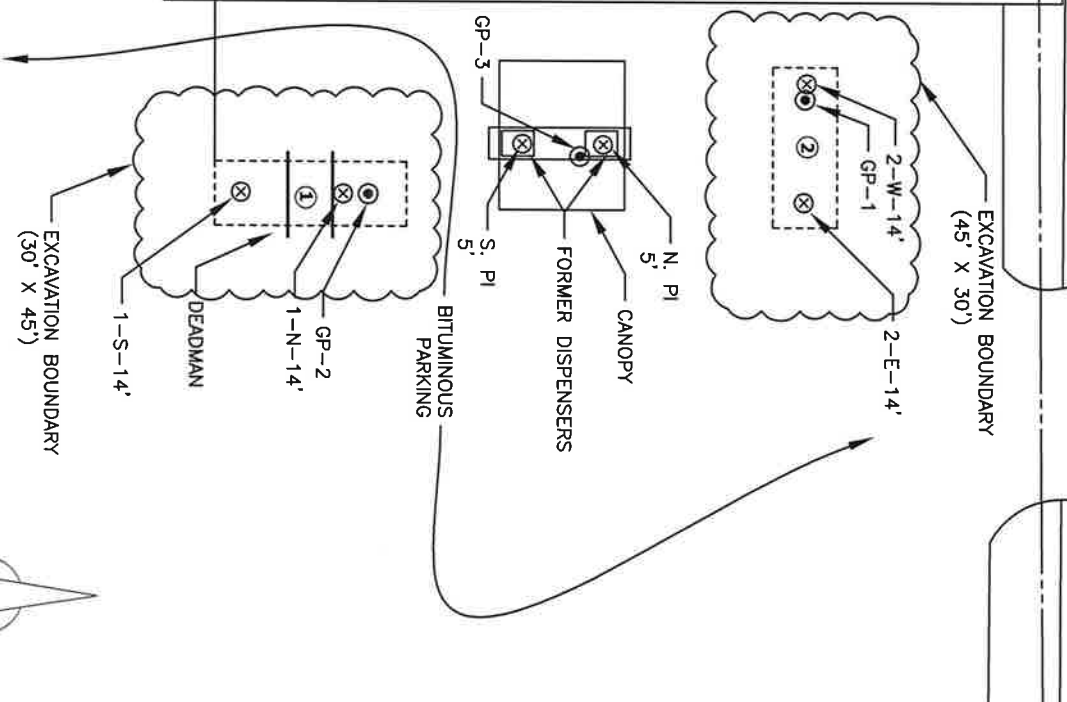


26TH STREET EAST

CONCRETE SIDEWALK



MINNEAPOLIS FLEET SERVICES
1911 26TH ST. E.



Legend

Sampling Points
Former USTs



- ① = 15,000 Gal Gasoline UST
- ② = 15,000 Gal Diesel UST

Geoprobe Location (12/1/08 & 3/27/09)

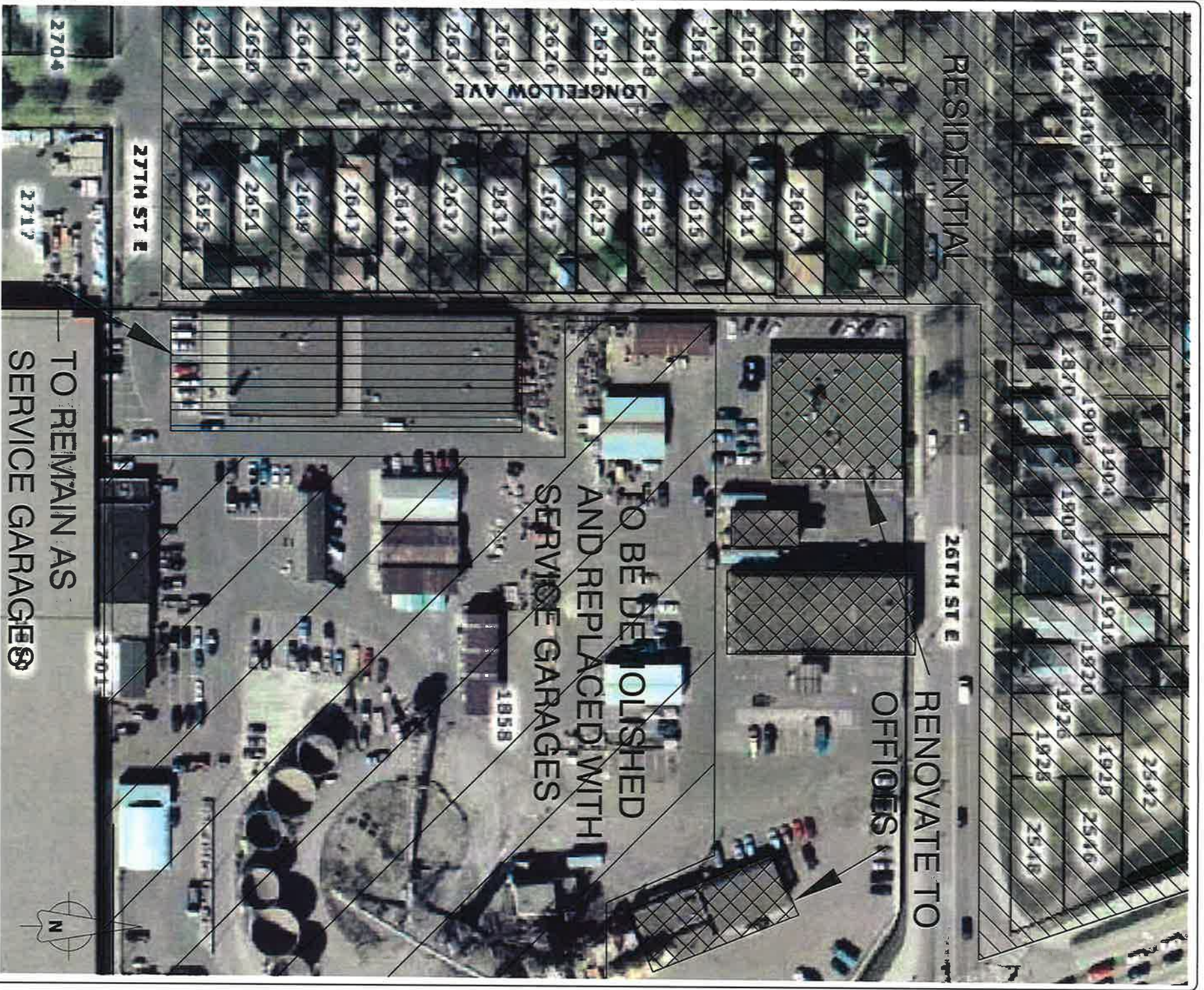


Thatcher
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FIGURE

2

PROJECT TITLE: Minneapolis Fleet Services
DRAWING TITLE: Site Map
PROJECT LOCATION: Minneapolis, MN
SCALE: 1" = 30'
DRAWN BY: TOM



TO REMAIN AS
SERVICE GARAGES

TO BE DEMOLISHED
AND REPLACED WITH
SERVICE GARAGES

RENOVATE TO
OFFICES (MI)



Matchner
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FIGURE

3

PROJECT TITLE: Minneapolis Fleet Services

DRAWING TITLE: Address Map

PROJECT LOCATION: Minneapolis, MN

LEAK #: SCALE: 1" = 100'
DRAWN BY: TOM