ARCADIS Design & Consultancy for natural and built assets

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ENVIRONMENT

Subject:
Interim Groundwater Sampling Work Plan
Ford Twin Cities Assembly Plant, St. Paul, Minnesota
MPCA VIC Project Number VP23530
MPCA PBP Project Number PB3682

Date:
May 4th, 2018

Contact:
Ryan Oesterreich

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612.373.0225

Email:
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Our ref:
MN000653.0007

Dear Ms. Hadiaris:

This *Interim Groundwater Sampling Work Plan* (work plan) provides details regarding sampling a subset of the permanent monitoring wells currently at the former Twin Cities Assembly Plant (TCAP, Site) in St. Paul, Minnesota. The objective of this work is to continue to investigate the groundwater quality in the two saturated bedrock units (Platteville Limestone and St. Peter Sandstone) to determine if former activities at the former TCAP caused impacts at concentrations that exceed applicable risk-based screening standards promulgated by the Minnesota Pollution Control Agency (MPCA). This work plan does not include wells around Area C, which are addressed in a separate groundwater monitoring work plan.

SITE LOCATION

The Site is located at 966 South Mississippi River Boulevard in St. Paul, Ramsey County, Minnesota at the approximate easting coordinate 484562.5 meters (m) and northing coordinate 4973822.5 m. The Site is located in a mixed industrial, commercial, and residential use area on the eastern shore of the Mississippi River, along the east and west side of South Mississippi River Boulevard, south of Ford Parkway and west of South Cleveland Avenue, in St. Paul, Minnesota (**Figure 1**).

METHODOLOGY

Field logbook/documentation procedures and the field quality assurance program will be implemented in accordance with the approved June 2007 Field Sampling Plan (FSP, Arcadis 2007). Standard operating procedures updated since development of the FSP are attached.

A total of sixteen monitoring wells will be sampled (**Table 1**). Fourteen of the wells are located on the Main Parcel, and two wells are located on the River Parcel (**Figure 1**). All sixteen monitoring wells are screened within the bedrock groundwater. Well construction details and screened geology for each well is provided in **Table 1**. Each monitoring well will be gauged prior to commencing the groundwater sampling field activities using an electronic water level indicator. The water level indicator will be cleaned between each well using a detergent solution and rinsed with clean distilled water prior to deploying into the next monitoring well. The water level data will be used to calculate purge volumes and evaluate groundwater gradients and flow directions. Groundwater elevation data will be utilized to determine apparent groundwater flow direction, based on the potentiometric surface elevations.

All permanent monitoring wells will be sampled using a downhole pump after purging three well volumes. If wells go dry during purging they will be allowed to recharge and sampled with a disposable polyethylene bailer. A YSI 556 multi-sensor meter (or equivalent) will be used to monitor the groundwater conditions while purging. The parameters monitored will include: dissolved oxygen (DO), specific conductance, temperature, pH, and oxygen reduction potential (ORP). Groundwater samples will be containerized in laboratory supplied sample jars and submitted on ice under chain-of-custody protocols to the TestAmerica Canton, Ohio laboratory on a standard 10-day turnaround time (TAT).

Investigation-Derived Waste (IDW) generated during the course of the groundwater sampling will include purge water, personal protective equipment (PPE) and disposable sampling equipment (i.e. filters, tubing, PVC).

- Purge water generated during groundwater monitoring activities will be containerized for off-site disposal after review of laboratory analysis.
- PPE and disposal sampling equipment will be segregated and disposed of upon review of subsurface investigation results.

SCOPE OF WORK

As noted above, permanent monitoring wells on-site will be sampled for groundwater quality in consecutive quarters beginning in the second quarter of 2018. A summary of the analytes that will be collected from each well are shown below.

- VOCs using USEPA Method 8260,
- GRO using WI Modified Method,
- DRO using WI Modified Method,
- Dissolved TAL metals using USEPA Method 6010,
- Dissolved thallium using USEPA Method 6020
- PCBs using USEPA Method 8082, and

- Cyanide using USEPA Method 6010.

All groundwater samples analyzed for metals will be field filtered using a 0.45-micron disposable filter prior to sample collection. All TAL metals samples will include speciation for hexavalent and trivalent chromium.

REPORTING

Results of the sampling will be included in a quarterly summary report. The quarterly report will include a short discussion regarding the analytical results and any unexpected results or QA/QC issues, a potentiometric surface map and a site figure showing analytical exceedances of applicable screening criteria for the main parcel.

SCHEDULE

Groundwater sampling activities will be completed in the second quarter and third quarter of 2018. The need for groundwater sampling beyond the third quarter will be evaluated using data collected to date and the scheduled for property redevelopment.

If you have questions or need additional information, please call me at 612.373.0225 at your convenience.

Sincerely,

Arcadis U.S., Inc.

Ryan Oesterreich, PE, PG

Senior Engineer

Copies:

Shanna Schmitt, MPCA

Stacey VanPatten, MPCA

Bassou Oulgout, MPCA

Chuck Pinter, Ford Motor Company

Enclosures:

Tables

1 Permanent Monitoring Well Construction Summary

Figures

1 Site Location

REFERENCES:

Arcadis. 2007. Field Sampling Plan. Ford Motor Company, Twin Cities Assembly Plant, St. Paul, Minnesota. August 30.

Table 1
Permanent Monitoring Well Construction Summary
Ford Motor Company - Twin Cities Assembly Plant
966 South Mississippi River Boulevard
St. Paul, Minnesota

Well ID	Unique Well Number	Date Installed	Top of Screen	Bottom of Screen	Surface Completion Type	Screened Geology
			(ft bgs)	(ft bgs)		
AMW-01	751337	7/9/07	29	39	Above Ground	Platteville Limestone
AMW-02	751330	6/22/07	30	40	Above Ground	Platteville Limestone
AMW-03A	751333	7/2/07	30	40	Flush Mount	Platteville Limestone
AMW-03B	751332	6/29/07	141	151	Flush Mount	St. Peter Sandstone
AMW-04	751334	7/10/07	51	61	Flush Mount	Platteville Limestone
AMW-05	751339	7/2/07	19	29	Above Ground	St. Peter Sandstone
AMW-05B	756581	7/19/07	43	53	Above Ground	St. Peter Sandstone
AMW-06	751331	7/3/07	31	41	Above Ground	Platteville Limestone
AMW-08	751336	6/20/07	35	45	Flush Mount	Platteville Limestone
AMW-09	751335	6/21/07	80	90	Flush Mount	Platteville Limestone
AMW-10	756581	7/20/07	30	40	Above Ground	Platteville Limestone
AMW-27	812979	1/18/16	94	104	Above Ground	St. Peter Sandstone
AMW-28	812978	1/19/16	105	115	Above Ground	St. Peter Sandstone
AMW-29	812977	1/22/16	111	121	Above Ground	St. Peter Sandstone
AMW-30	812976	1/25/16	109	119	Above Ground	St. Peter Sandstone
AMW-31	812975	1/26/16	110	120	Above Ground	St. Peter Sandstone

Acronyms and Abbreviations:
AMW = Arcadis monitoring well
ft bgs = feet below ground surface

LEGEND:

- Platteville Limestone Monitoring Well
- St. Peter Sandstone Monitoring Well
- Former Buildings
- Ford Property Boundary

NOTES:

AMW = Arcadis Monitoring Well

Imagery Source: MnGeo WMS service, 2016 color 7-county
http://geoint.lmic.state.mn.us/cgi-bin/wms?

0 400 800 Feet

1 inch = 400 feet

Twin Cities Assembly Plant
Ford Motor Company
St. Paul, Minnesota

Well Locations

ARCADIS

FIGURE
1

CITY: Minneapolis, MN DB: MGress PM: Bryan Zinda
Project MN000593
Path: Z:\GISProjects_ENV\Ford\Ford RangerArcMap\2018\2018-04\Well_Locations_20180425.mxd