



Certified Mail Receipt 7001 0320 0004 2633 4726

Ms. Karen Kromar and
Ms. Stacey Hendry-Van Patten
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

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

Dear Ms. Kromar and Ms. Hendry-Van Patten:

On behalf of Ford Motor Company (Ford), ARCADIS has prepared this Work Plan for the Twin Cities Assembly Plant (Site) in St. Paul, Minnesota. This Work Plan proposes groundwater seep and Mississippi River sampling in accordance with the requirements of the Minnesota Pollution Control Agency (MPCA) Voluntary Investigation and Cleanup (VIC) Program and Petroleum Brownfields Program (PBP).

This Work Plan outlines the general approach and scope of work for the seep and river sampling activities. Field activities will be conducted in accordance with the June 18, 2007 ARCADIS Field Sampling Plan (FSP) that was developed for the Site and outlines the sampling procedures and quality assurance protocols.

Background

Property Location and Description

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 4973822.5m. The Site is located in a mixed industrial, commercial, and residential use area on the eastern shore of the Mississippi River, along the east side of South Mississippi River Boulevard, south of Ford Parkway, and west of South Cleveland Avenue in St. Paul, Minnesota (see Figure 1).

Imagine the result

ARCADIS
430 First Avenue North
Suite 720
Minneapolis
Minnesota 55401
Tel 612.339.9434
Fax 612.336.4538
www.arcadis-us.com

ENVIRONMENT

Date:
April 11, 2008

Contact:
Bryan Zinda

Phone:
612.373.0234

Email:
bryan.zinda@arcadis-us.com

Our ref:
MN000593.0003

Geology/Hydrogeology

The general geology and hydrogeology underlying the Site has been determined based on information obtained during the Phase I and Phase II Environmental Site Assessments (ESAs) conducted by ARCADIS in 2007. The geology generally consists of a thin mantle of unconsolidated sediments over bedrock terraces. The unconsolidated deposits generally consist of sandy clay and clayey sand and range in thickness from 1 foot to 18 feet. Beneath the unconsolidated material is the Decorah Shale, which may be absent near the main plant building but reaches a maximum thickness of 35 feet near the northern end of the Site. The Platteville Limestone underlies the Decorah Shale and is generally 30 feet thick across the Site. Underlying the Platteville Limestone is the Glenwood Shale, which is approximately 2 to 10 feet thick across the Site. Beneath the Glenwood Shale is the St. Peter Sandstone. All of these bedrock formations outcrop along the bluffs of the Mississippi River, and the St. Peter Sandstone continues below the elevation of the riverbed.

Perched groundwater is sometimes present in the unconsolidated materials overlying bedrock, and there is a perched groundwater unit within the Platteville Limestone at locations above the bluff. An additional groundwater unit exists within the St. Peter Sandstone, which is a high-yielding aquifer. The Glenwood Shale acts as an aquitard between the Platteville Limestone and the St. Peter Sandstone.

Groundwater has been observed at the Site seeping from the limestone and sandstone along the bluff next to the Mississippi River.

Scope of Work

ARCADIS proposes a one-time sampling event to satisfy the requirements of the VIC and PBP programs to evaluate groundwater seep quality and Mississippi River quality. The seep and river sampling data will be used to evaluate if there is any evidence of affected groundwater at, and migrating from, the TCAP site. The seep sampling event will be completed during the spring of 2008, while the river sampling will be completed during the summer of 2008.

The scope of work will consist of the following tasks:

- Collecting seep water and river water field parameter measurements.
- Collecting seep and river water samples.
- Shipping samples to the laboratory for analyses of select parameters.

- Evaluating the collected data and preparing reports.

Three to five groundwater seep samples will be collected from the limestone and sandstone bluffs at the Site. Exact sample locations will be determined in the field with ARCADIS and MPCA staff as discussed during a telephone conversation between Mr. Bryan Zinda of ARCADIS and Ms. Karen Kromar of the MPCA on Friday March 14, 2008. In addition, safety concerns will be considered prior to determining any sample location. Any location that ARCADIS personnel cannot safely reach will not be selected as a sample point.

One sample will be collected from Hidden Falls (the outfall) and four samples from the Mississippi River (see Figure 2), as follows:

- One upstream of the Site.
- One downstream of the Site near the confluence with Hidden Falls Creek.
- Two along the stretch of the Mississippi River that is west of historical Disposal Area C.

Samples will be collected while wading into the river. The sample depth within the river will be approximately half the water column depth of the river (i.e., 2 feet below river surface elevation). Samples will be collected from the river when its velocity is slow enough that ARCADIS personnel can safely wade into the river to a depth of approximately 4 feet. Sample locations, if safe, will be away from the turbid water near the shores of the river. Exact sample locations will be field determined.

Immediately prior to sample collection, field parameters, including hardness, specific conductivity, temperature, pH, dissolved oxygen, and turbidity, will be measured at each location using a field test kit for hardness and a multiparameter water-quality monitor for the remaining parameters.

Seep and river samples will be placed into laboratory-supplied containers and submitted with appropriate chain-of-custody documentation to TestAmerica of North Canton, Ohio for analysis of volatile organic compounds (VOCs) using United States Environmental Protection Agency (USEPA) Method 8260, semi-volatile organic compounds (SVOCs) using USEPA Method 8270, Resource Conservation and Recovery Act (RCRA) metals (total) using USEPA Method 6010, Gasoline Range Organics (GRO) using the Wisconsin Modified Method and Diesel Range Organics (DRO) using the Wisconsin Modified Method.

In accordance with the FSP, one set of quality assurance/quality control (QA/QC) samples (duplicates, field blanks, trip blanks, and matrix spikes/matrix spike duplicates) will be collected and analyzed during each sampling event. The QA/QC protocols for the work described in this proposal will meet or exceed the standards of care required by the State of Minnesota and by Ford. Level 4 QA/QC will be completed on 10 percent of all samples collected during each sampling event. All samples will undergo Level 2 verification.

Reporting

Two summary reports will be submitted to the MPCA (one for the seep sampling event and one for the river sampling event).

The reports will include the following items:

- Site location.
- Site map.
- A list of parameters investigated.
- A detailed description of the sampling protocol and analytical methods used.
- A description and evaluation of the analytical results, which will include comparing results to any applicable Minnesota Department of Health Health Risk Limits (for groundwater seep quality) and/or Minnesota Water Quality Standards (for surface water quality).
- Summary.
- Analytical data tables.
- A figure showing key analytical results.
- Appendices.
 - Laboratory reports.
 - Chains of custody.

Schedule

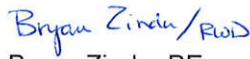
Field activities for the seep sampling will begin upon approval of this Work Plan. River sampling activities will begin during the summer of 2008 after the river velocity slows so that the samples can safely be collected.

Closing

We appreciate your assistance with this project. If you have questions or need additional information, please call Bryan Zinda of ARCADIS at your convenience.

Sincerely,

ARCADIS



Bryan Zinda, PE
Project Manager



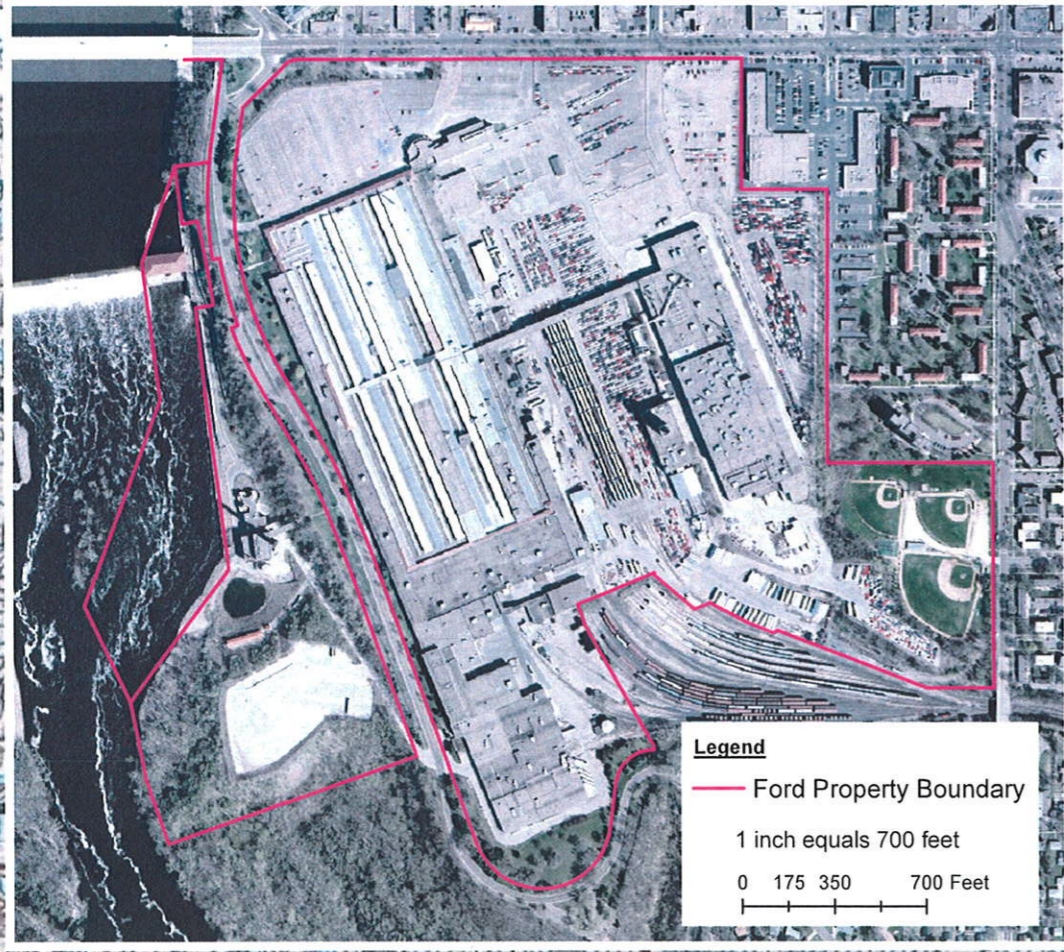
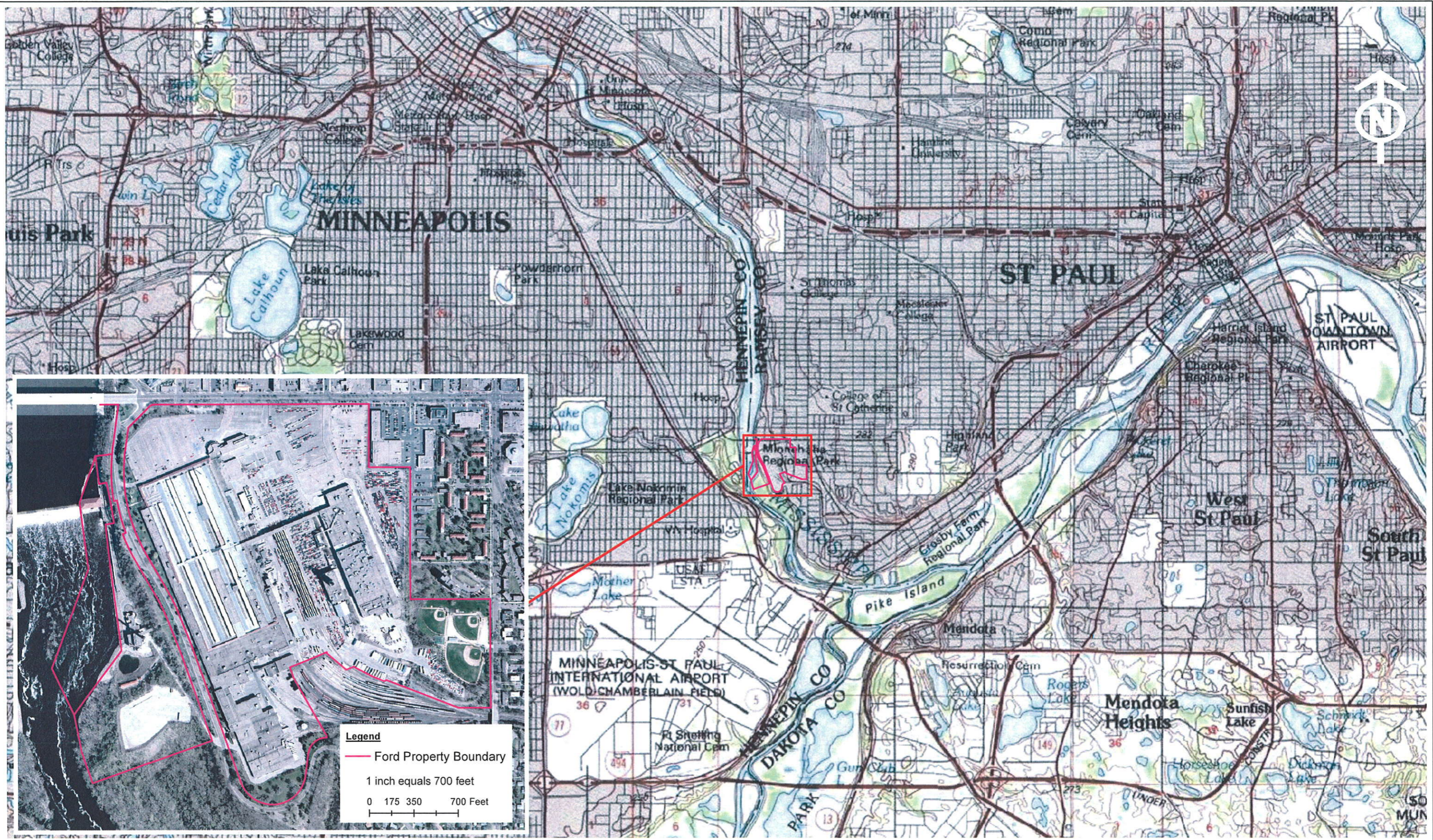
Andrew Fiskness, PG
Staff Geologist



Eric Carman
Principal in Charge
Vice President

Copies:

Ms. Barbara Rusinowski, Ford Motor Company, Dearborn, Michigan
Mr. John Meyers, Ford Twin Cities Assembly Plant, St. Paul, Minnesota

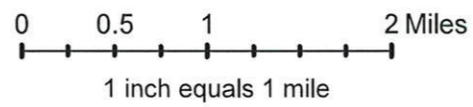


Legend

— Ford Property Boundary

1 inch equals 700 feet

0 175 350 700 Feet



G:\GIS\Projects\Ford Ranger\Map\Phase1_Figures\Final\Fig1_Site_Location_Topo.mxd - 10/9/2007 @ 1:40:19 PM

Project Manager E. Carman	Assistant Project Manager B. Zinda	
Drawn M. Gress	Checked T. Nelson-Kalmes	

Imagery Source: USGS High Resolution Orthoimagery for the Minneapolis-St. Paul, Minnesota Urban Area
 Topographic Map Source: <http://services.arcgisonline.com/v92>,
 © 2007 National Geographic Society

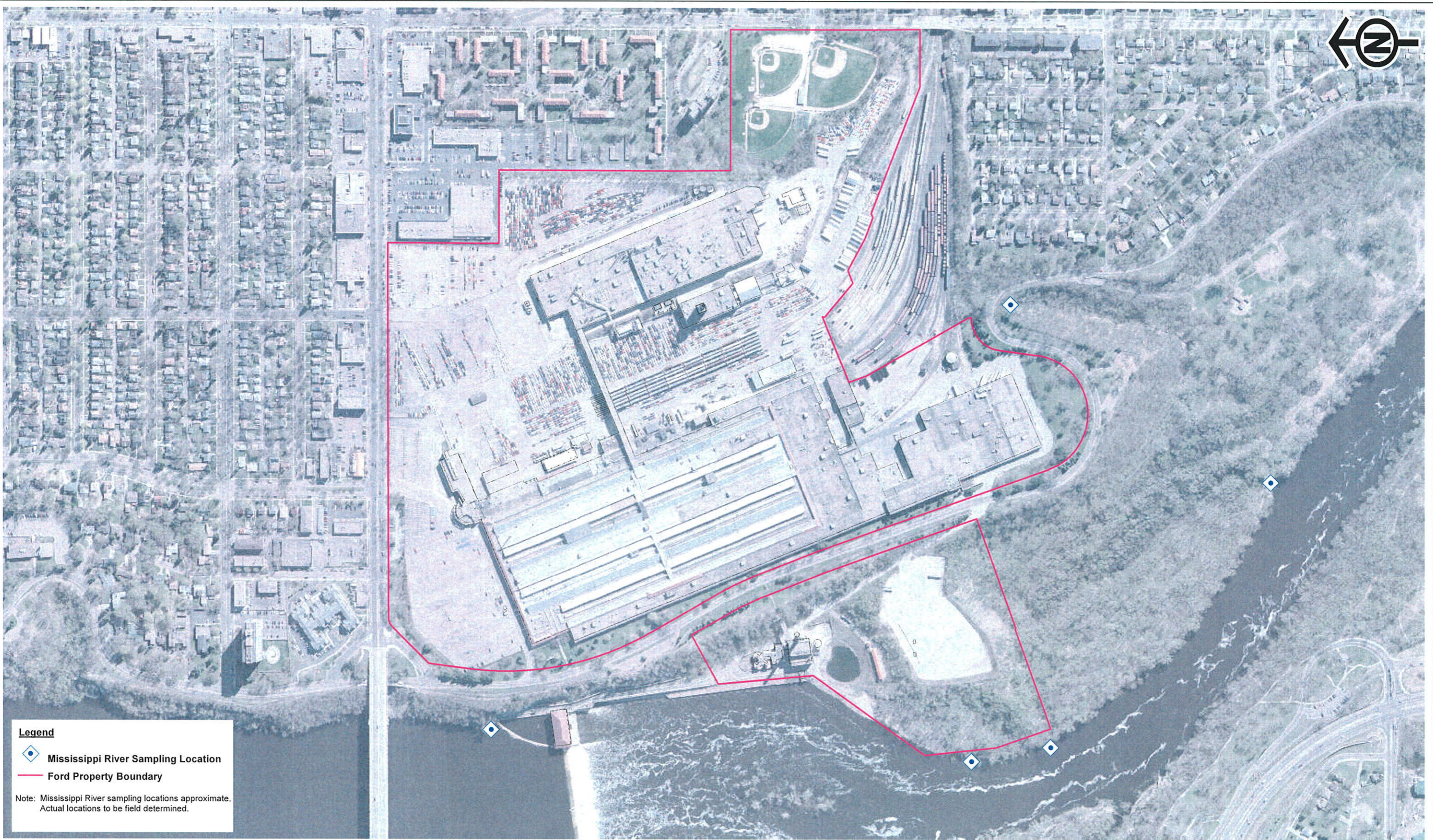
ARCADIS

430 First Avenue North, Suite 720
 Minneapolis, Minnesota 55401
 Tel: (612) 339-9434 Fax: (612) 336-4536



Site Location / Property Layout
Twin Cities Assembly Plant
St. Paul, Minnesota

Project Number MN00593
Date 09-OCT-07
Figure 1

G:\GIS\Projects\Ford Ranger\ArcMap\SampleLocations\Proposed_Locations\Mississippi_SampleLocs_20080321.mxd - 3/21/2008 @ 12:53:10 PM



Legend

-  Mississippi River Sampling Location
-  Ford Property Boundary

Note: Mississippi River sampling locations approximate.
Actual locations to be field determined.

Project Manager E. Carman	Assistant Project Manager B. Zinda
Drawn M. Gress	Checked A. Fiskness



Imagery Source: United States Geological Survey
High Resolution Orthom imagery for the Minneapolis-St. Paul,
Minnesota Urban Area

0 200 400 800 Feet
1 inch equals 400 feet


430 First Avenue North, Suite 720
Minneapolis, Minnesota 55401
Tel: (612) 339-8434 Fax: (612) 336-4538

**Mississippi River Sampling Locations
Twin Cities Assembly Plant
St. Paul, Minnesota**

Project Number MN000593
Date 21-MAR-08
Figure 2