Prepared For:

Thermo Fisher Scientific, Inc.

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Site Investigation Report
Former Hamilton Industries Facility,
Two Rivers, Wisconsin
BRRTS Activity #02-36-578316

June, 2017

Environmental Resources Management
700 West Virginia Street
Suite 601
Milwaukee, Wisconsin 53204
www.erm.com

ERM

The world's leading sustainability consultancy.

Prepared for: Thermo Fisher Scientific

Site Investigation Report
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June, 2017

Project Number: 0383990

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Environmental Resources Management

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June 13, 2017

Tauren R. Beggs
Hydrogeologist & Northeast Region Land Recycling Expert
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
2984 Shawano Ave
Green Bay, WI 54313

RE: Site Investigation Report – Former Hamilton Industries Site, Two Rivers, Wisconsin

Dear Mr. Beggs,

Environmental Resources Management, Inc. (ERM), on behalf of Fisher Scientific International, LLC, a wholly owned subsidiary of Thermo Fisher Scientific, Inc. (the "Client"), prepared this Site Investigation Report (SIR) that documents subsurface soil and groundwater investigations performed at the former Fisher Hamilton Scientific, Inc. (aka Hamilton Industries Site) ("the Site") located at 1316 East 18th Street in Two Rivers, Wisconsin. The SIR has been prepared to satisfy the requirements of the Wisconsin Administrative Code (WAC) Chapter NR 716.15 Site Investigation Report. The Wisconsin Department of Natural Resources (WDNR) required that a SIR be prepared and submitted to the agency within 60 days of completion of site investigation activities.

The investigative activities outlined in this report were completed in response to a letter received by the Client from the WDNR, dated November 18, 2016, requiring further investigation at the Site (BRRTS Activity #02-36-578316). ERM submitted a revised Site Investigation Work Plan on March 16th, 2017 and received approval from WDNR on March 22, 2017. This SIR documents the findings of the activities proposed in the work plan.

Should you have any questions or need additional assistance from ERM please feel free to contact me at (414) 977-4705.

Sincerely,

David de Courcy-Bower, P.E.
Senior Project Manager

Denice Nelson
Partner

1.0 EXECUTIVE SUMMARY

Environmental Resources Management, Inc. (ERM) was retained by Thermo Fisher Scientific (Thermo Fisher) to perform an initial site investigation of the Former Hamilton Industries Facility, located at 1316 18th Street in Two Rivers, Wisconsin. The purpose of the initial investigation was to understand the extent of chlorinated volatile organic compounds (CVOCs) and lead detections previously observed at the Site.

The Site is currently vacant or covered with parking lots with the exception of one approximately 300-square foot brick building. The Site began operation in 1880 as a furniture manufacturing facility. The facility experienced growth and expansion through approximately 1960, at which time the factory had expanded to fill the size of the three-block area. Historical practices at the facility included the storage, handling, and incineration of solvents and other chemicals such as glue and paint. A building historically located just north of 17th Street was formerly used for waste solvent storage and two former fuel oil tanks were located in the south east of the Site.

Previous subsurface investigations have been conducted in the vicinity of the Site, both on and off-site, including July-August, 2016, October 2016, and November 2016 events. Sampling of groundwater from these events indicated concentrations of Trichloroethylene (TCE) in groundwater that exceeded Wisconsin Department of Natural Resources (WDNR) residual contaminant levels (RCLs). Sampling of soil from these events indicated one soil stockpile sample (SP-1) with concentrations of lead in soil that exceeded the WDNR soil-to-groundwater RCL.

ERM installed soil borings and used the existing boring logs for previously installed locations to the south to determine that the site lithology consists of a shallow perched sand aquifer overlying silty clays and clays. Temporary wells and existing groundwater monitoring wells were gauged to determine the groundwater flow direction which was to the east, toward the East Twin River. The results of ERM's initial investigation indicate that TCE is the primary CVOC detected in groundwater and is present in concentrations ranging from non-detect to up to 964 ug/L. Break-down products of TCE (e.g. cis-1,2-dichloroethene) were also detected in VAS-12, located near MW-02 where a "diesel-like" odor was observed during installation, and a light-non aqueous phase liquid (LNAPL) was observed during the most recent gauging event. The concentration of lead detected in the soils at SP-1 was determined to not have resulted in groundwater impacts based on the groundwater sampling at VAS-10.

Based on these data, ERM recommends further investigation of TCE impacts at the Former Hamilton Site, including the installation of permanent groundwater monitoring wells in the initial investigation areas and additional investigation of

soil and groundwater conditions north of 17th Street to further define the extent of TCE impacts.

2.0 GENERAL INFORMATION

Project Title: Former Hamilton Industries Facility, Two Rivers, Wisconsin

Project Purpose: Perform initial site investigation to understand the extent of CVOCs and lead detections previously detected at the Site.

2.1 SITE CONTACTS AND LOCATION

The following contact information is provided for the facility and environmental consultant:

Facility Representatives:

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Environmental Consultant:

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414-289-9552 (fax)
david.decourcybower@erm.com

Site Address: 1316 18th Street in Two Rivers, Wisconsin.

Site Coordinates (WTM): x: 714709.8 y: 411274.5

Site Location: East half of Section 1, Township 19 North, Range 24 East in Manitowoc County. The location of the Site is shown on Figure 1, developed from the United States Geological Survey (USGS) 7.5-minute quadrangle for Two Rivers, Wisconsin, dated 1978.

2.2 SITE SETTING

2.2.1 Site Description

The Site is located on approximately 13.2 acres of land situated on five parcels, primarily located between Jefferson Street and the East Twin River, north of 15th Street and south of 19th Street in Two Rivers, Wisconsin. A copy of the Certified Survey Map for the Site is provided as Appendix A. The Site is divided into five separate parcels (A through E). Parcels A&B are smaller parking lots located to the north of 19th Street (PIN:05300004108007 & 05300004111001), the two largest parcels (C&D) are separated by 17th Street although both parcels are identified by the same parcel number (PIN:05300005203005), and Parcel E is another small parking lot located to the south of 17th Street and west of Jefferson Street (PIN:05300006601207). The Site layout is shown on Figure 2.

2.2.2 Surrounding Properties

Land use in the vicinity of the Site includes light industrial, municipal, commercial and residential land uses. The zoning of the Site and surrounding properties is presented on Figure 3. The East Twin River is located immediately to the east of the Site.

2.2.3 Topography and Hydrology

The Site is located at an elevation of approximately 590 feet above mean sea level, is generally flat, and slopes slightly to the east towards the East Twin River. Surface water at the Site also drains to the east via overland flow to the East Twin River. The overall topographic trend of the surrounding area also slopes to the east. The nearest surface water body is the East Twin River, bounding the Site to the east.

According to flood zone and National Wetland Inventory (NWI) data collected, the Site is not located within wetland delineated areas or the 100 or 500-year flood plains. Flood zone and NWI data was obtained by EDR from the Federal Emergency Management Agency (FEMA) and U.S. Fish and Wildlife Services, respectively. The mean elevation of Lake Michigan, the discharge water body of the East Twin River, is approximately 578.66 feet and therefore approximately several feet lower than the Site elevation and not likely to flood due to high river or lake water levels

2.2.4 Geology and Hydrogeology

According to the United States Department of Agriculture Natural Resources Conservation Service web soil survey data for Manitowoc County, the surface soils in the vicinity of the Site are a combination of Oakville loamy fine sand and re-worked fill material consisting of sandy loam. The Oakville Loam is described

as a dark brown, excessively drained soil composed of fine to very fine eolian-derived sand. Previous investigations in the vicinity of the Site encountered fill material overlying alluvial or flood plain deposits to at least 33 feet below ground surface and similar geologic conditions are expected beneath the Site. Groundwater was encountered at depths ranging between 5 and 20 feet below land surface. There are 6 United States Geological Survey groundwater wells located within 1 mile of the Site. Only one of these wells is located within 1/8 mile from the Site.

According to well driller's records in the area, the shallow subsurface is comprised of sand and clay deposits overlying limestone bedrock which is encountered between 100 and 140 feet below land surface.

3.0 BACKGROUND INFORMATION
3.1 PROPERTY USE

3.1.1 Current Property Use

The Site is currently vacant or covered with parking lots with the exception of one approximately 300-square foot brick building. The purpose of this remaining brick building is as a pump house associated with City of Two Rivers water or sewer utilities and is located near the northeastern boundary of the Site. Along the shoreline of the East Twin River and north of 17th Street is a broken concrete platform. Along the East Twin River south of 17th street is a steel sheet pile wall along which is in a paved area, and according to historic aerial photographs, was used for the parking of cars during facility operations. The remainder of the Site is covered with vegetated soil. Three sewer manholes are located on the Site in line with 18th Street. A fire hydrant is located near the would-be intersection of 18th Street and East River Road.

3.1.2 Historical Property Use

The Site began operation as the J.E. Hamilton Holly Wood Type Company in 1880 and growth continued through approximately 1960. A plan outline of the facility and the approximate year each building was constructed is provided as Appendix B. The company grew and expanded its product line to include type cabinets and other furniture useful in the printing press room, then to furniture for dental and medical offices and labs, drafting tables and furnishings, and the first gas-powered clothes dryer. In 1917 the company switched from using wood to using steel to manufacture furnishings. The company changed its name to Hamilton Wood Type Manufacturing and then Hamilton Laboratory Solutions, manufacturer of laboratory furniture and fume hoods. By 1960 the factory had expanded to fill the size of the three-block area bounded as described above. The industrial history of the Site included the past use of and storage of oil, solvents and production-associated wastes.

3.2 SUMMARY OF HISTORICAL INFORMATION

To determine past uses of the Site and surrounding properties, ERM reviewed historical sources of information such as aerial photographs and Sanborn maps.

3.2.1 Historical Timeline

1885: According to the 1885 Sanborn map, the Site was vacant land east of Jefferson Street. West of Jefferson Street, properties included private dwellings, a school, church and other miscellaneous small commercial buildings.

1891: According to the 1891 Sanborn map, the Site began to be developed with Hamilton Manufacturing along East River Street between 17th and 18th Streets

(Then called Walnut and Cedar Streets, respectively). Other properties included vacant land and private dwellings. The Fred Egger's veneer wood seating company had established operations to the northeast of the Site and continued in this operation through approximately 2005.

1898: According to the 1898 Sanborn map, the Site had expanded slightly toward Jefferson Street but still bounded by 17th and 18th Streets and the East Twin River.

1904: By 1904 (according to the Sanborn map), the Site had expanded west to Jefferson Street, and beyond 17th Street to the south and 18th Street to the north.

1913 to 1929: The Sanborn maps do not indicate significant change to site operations during this period.

1944: The Sanborn map for 1944 indicates further expansion to Site operations with building additions north of 18th Street and south of 16th Street.

1944 – 1967: Changes to the Sanborn maps during this period and a review of City of Two Rivers building permits indicate facility improvements in various portions of the property.

1974 – 1987: Facility burned hazardous wastes in their boilers from 1974 to 1987. Thereafter, the facility manifested and transported off-site all hazardous wastes.

1938 – 2010: Historical aerial photographs confirm the various improvements and existing facility operations through this time. The last large building improvement was completed south of 16th Street in 1960. By 2006 the neighboring Egger's facility had been demolished.

2012-2015: Operations at the facilities stopped and all of the facility buildings were demolished with the exception of a small, 200-square foot City Sewage Pumping Station.

Present: The property is primarily vacant land.

3.2.2 Discussion of Relevant Historical Environmental Issues/ Assessments/ Investigations

The following items were considered relevant to the current investigation based on a review of historical sources:

The presence or possible presence of two fuel oil tanks as shown on a 1959 insurance map. Based on discussions with facility personnel in 2004, the two fuel oil tanks were removed prior to the facility's acquisition of the property. The two tanks are depicted as being heating oil with capacities of 17,000 and

20,000 gallons. No other information could be found related to the tanks and it is unknown if these were ASTs, USTs or possibly rail-car tanks.

Historical practices at the facility included the use, storage, handling, and incineration of solvents and other chemicals such as glue and paint. Three former waste solvent tanks were historically located in Building 5 to the north of 17th Street. The tanks were formerly used to store waste solvents prior to incineration on-site in the facility's boilers. The tanks were reportedly cleaned out as part of the facility's actions to close out the tanks in accordance with its Resource Conservation and Recovery Act (RCRA) Transportation, Storage, Disposal Facility (TSDF) Part B permit closure plan.

Immediately south of the Thermo Fisher property is East River Street and the former Kahlenberg property located at 1316 E River Street. The 1316 E River Street property was previously operated for multiple manufacturing purposes that include manufacturing of gas engines, shoe polish, and pharmaceutical products. It is feasible that fuels and solvents were used in the manufacture of shoe polish and/or medical sutures at the 1316 E River St property.

3.3 SUMMARY OF PREVIOUS INVESTIGATIONS

ERM reviewed previous environmental reports associated with the focus area of this investigation. The following noteworthy items were identified through a review of the previous reports and additional historical sources:

In July-August 2016, the City of Two Rivers contracted with McMahon Engineers of Appleton, WI to advance three soil borings along the East River Street right-of-way south of the Site. Soil and groundwater samples were collected from each boring and submitted to Synergy Laboratory in Appleton, WI for analysis of VOCs and metals. Two soil samples contained elevated concentrations of TCE above the WDNR's soil-to-groundwater pathway RCL and the metals arsenic, lead and mercury exceeding the WDNR's soil-to-groundwater pathway RCL.

In October 2016, The City of Two Rivers performed two excavations on the Site as part of a water main repair. Excavated soils from both excavations were segregated from each excavation and isolated on plastic tarps. One split sample was collected from each soil pile (SP-1 and SP-2) by the City of Two Rivers' contractor, McMahon, and ERM. Samples collected by ERM were submitted to Pace Analytical of Green Bay, Wisconsin for analysis of RCRA metals and VOCs. VOCs were not detected within either ERM soil sample above method detection limits. Arsenic was detected in both samples, but at concentrations below the background threshold value (BTV) for arsenic in the area soils. Additional metals (cadmium and lead) were detected in ERM sample SP-2, but again were below the respective BTVs for both of these metals. Samples collected by

McMahon were submitted to Synergy Environmental Lab of Appleton, Wisconsin for analysis of VOCs, RCRA metals. Concentrations of TCE and lead were detected within the soil sample collected from SP-1 at concentrations that slightly exceeded the WDNR soil-to-groundwater RCL and BTV for lead.

In November 2016, The City of Two Rivers conducted a Phase II ESA in the vicinity of the Site in November, 2016 (report dated February 16, 2017). The investigation included the installation of five groundwater monitoring wells in City-owned properties adjacent to and / or up-gradient of the Kahlenburg property, and along the southern property boundaries of the Thermo Fisher properties.

The results of the city's Phase II ESA indicated groundwater was impacted with CVOCs above the WDNR groundwater enforcement standard (ES), but that no other VOC or RCRA metals were observed above either the WDNR ES or preventive action limit (PAL). It should be noted that the reported exceedances of Barium in groundwater in the Phase II were based on an erroneous value for the PAL for Barium of 40 ug/l (the actual value is 400 ug/l).

4.0 METHODS OF INVESTIGATION

4.1 SUBSURFACE UTILITY CLEARANCE

Prior to initiation of the soil and groundwater investigation, ERM conducted a subsurface clearance protocol in attempt to identify any underground infrastructure in the proposed areas of the borings. The protocol included studying maps of the underground infrastructure and conducting public and private utility locates to identify underground utilities in areas where intrusive work was conducted.

4.2 SUBSURFACE INVESTIGATION

ERM retained a licensed drilling contractor, Geoserve, Inc., to advance twelve borings to further define the lithology and groundwater flow direction at the Site. Ten of the borings were installed to a depth of approximately 30 feet below ground surface (ft bgs), as they are located at a higher ground surface elevation. The other two borings were installed to a depth of approximately 20 ft bgs. Soil borings were installed using a Geoprobe direct push drilling rig, with soil samples collected on a continuous basis using macro-core sleeves. Six of the borings were converted to temporary monitoring wells. All temporary wells were constructed of 1-inch Schedule 40 PVC slotted well screens and risers, silica sand filter packs and bentonite chip surface seals. Five of the wells were constructed with above grade PVC stick-up risers and caps, the sixth well, located in a parking lot, was finished with a flush-mount cover. The temporary groundwater monitoring wells were installed for the purpose of determining the groundwater elevation across the site and the groundwater flow direction. The temporary monitoring wells will be abandoned within 120 days of installation.

Once groundwater elevations were determined ERM conducted vertical aquifer sampling (VAS) immediately adjacent to each of the twelve boring locations. VAS was performed on a once-pass through process (screen point sampler), within five feet of the correlating soil boring location. Each screen point sample location was advanced to approximately the same total depth as the adjacent soil boring. Three discreet groundwater samples were attempted at each VAS location. The locations of the borings and VAS sample points are provided on the Site Investigation Locations Map; Figure 4.

4.3 SOIL SAMPLING

Geological logs were completed for each soil boring by ERM personnel, soil boring logs are available in Appendix C. Soil cores were field screened for the presence of VOCs using a photoionization detector (PID) equipped with an 11.7eV lamp and the headspace technique. The headspace technique included:

- Placing approximately 50 – 100 grams of a representative soil sample into a clean quart-sized plastic bag;
- Sealing, agitating, and allowing the sample to equilibrate for 10 to 15 minutes; and
- Measuring the concentration of vapors in the headspace above the soil sample by inserting the probe of the PID into the bag.

The PID is capable of semi-quantitatively measuring total VOC concentrations in parts per million by volume (ppmv) compared to an equivalent standard. A headspace reading of 1 ppmv or less is used as an indication of clean soil conditions.

4.4 GROUNDWATER SAMPLING

Based on the presence of nearby surface water bodies and change in topography within the Site boundaries, groundwater was estimated to potentially be present at a depth of approximately 5 to 20 ft bgs.

Once the groundwater elevation was determined, VAS was conducted within five feet of each of the twelve soil boring locations. VAS was accomplished using a once-pass through screen point sampler to minimize aquifer disturbance and cross contamination. At each location, attempts were made to collect a groundwater sample from three different intervals; one sample from 2.5 feet into the aquifer, one sample from 7.5 feet into the aquifer, and one sample from 12.5 feet into the aquifer. Groundwater samples were submitted for laboratory analysis of CVOCs (SW 846 Method 8260B), and RCRA Metals (VAS-10 only). Samples were collected in laboratory-supplied bottles of appropriate volume and preservation, stored in cooled packaging and dispatched to the laboratory with full chain of custody tracking documentation. ERM utilized Pace Analytical, a Wisconsin-certified environmental laboratory, with a standard turnaround of 10 business days for all sample analyses.

4.5 SURVEY

Upon completion of the soil borings and temporary wells, each location was surveyed by Capitol Survey Enterprises (CSE) to establish the horizontal location based on Wisconsin State Plane Coordinates (NAD83) and vertical elevation based on Wisconsin Zone South NAD83. Depth to groundwater measurements were taken in each well in order to provide a preliminary understanding of the groundwater flow direction in the investigation area.

4.6 INVESTIGATION DERIVED WASTE

Investigation derived waste (IDW) (e.g. soil cuttings, development and purge water, etc.) was placed into two DOT approved drums and retained at the Site for subsequent disposal.

4.7 QA/QC

A trip blank was analyzed for CVOCs for quality assurance / quality control purposes. New nitrile gloves were used between each sample location and between each sample collected to prevent cross contamination. Any sampling materials used during sample collection were new per each sample collected.

5.0 RESULTS

5.1 SOIL SAMPLING

ERM mobilized to the Site on April 24, 2017. Soil borings VAS-1 through VAS-12 were installed between April 24 and April 25, 2017. The soil encountered at the Site generally consisted of an approximately 9 to 16-foot thick fine grained sand unit, with fine grained clays, underlain by silts and silty clays. Generally, the sand unit was thicker (up to 16 ft) in the borings installed at the higher elevation compared to the 9 ft thick sand layer observed in the two borings installed at the lower elevations. The two borings located west across Jefferson Street (VAS-5 and VAS-6) had a deeper approximately 10-foot thick sand wedge within the silty clay unit. This sand wedge was not observed in any other borings. Geologic cross sections trending north to south and west to east are available as Figure 5 and Figure 6. A contour map showing the elevation of the upper most clay contact is presented in Figure 7. Soil boring logs are provided in Appendix C.

All soil cores were screened with the PID, and primarily resulted in readings of less than 0.2 ppm. The highest PID readings recorded were at boring location VAS-3, with a relatively low value of 12.8 ppm. No soil staining was observed in any of the borings.

5.2 GROUNDWATER SAMPLING

Temporary monitoring wells were installed in VAS-1, VAS-3, VAS-5, VAS-8, VAS-10, and VAS-11 (see Figure 4). After 24-hours the wells were gauged to determine the depth to water across the Site. The nearby monitoring wells installed by the City of Two Rivers during a separate, offsite Phase II environmental investigation were also gauged to contribute to the groundwater elevation profile. During gauging of the City's monitoring wells, 0.17-feet of light non-aqueous phase liquid (LNAPL) was detected in monitoring well MW-02. The groundwater at the Site was measured between approximately 582 to 589 feet above mean sea level, the elevation increasing with distance from the East Twin River indicating groundwater flows generally to the east, toward the East Twin River. A groundwater contour map is provided as Figure 8.

Upon determining the water level, the intervals for VAS sampling were determined. Three depth intervals were chosen for each of the twelve VAS locations. Generally, the depth intervals were selected to be approximately 2.5, 7.5 and 12.5 feet below the water table; however, based on observations of the lithology encountered during soil boring, the intervals were adjusted with the attempt to capture higher water producing zones. At each interval the sampling probe was left in place for 30-minutes to allow time for groundwater to

recharge. If after 30-minutes no water was present in the sampling probe at the interval, it was excluded.

As shown on Figures 5 and 6, the majority of the VAS sample intervals only produced sufficient groundwater to sample in the shallow sample interval, which usually corresponded to a sand unit; the two deeper intervals were generally within lower hydraulic conductivity clays and silts. This indicates that there is a shallow perched sand aquifer at the Site. Each groundwater sample was submitted to Pace Analytical of Green Bay, Wisconsin, for analysis of CVOCs. Groundwater from VAS-10 was also analyzed for RCRA Metals.

The results of the analyses showed that TCE is present in groundwater at concentrations above the Wisconsin Administrative Code (WAC) Chapter NR 140 Groundwater Preventative Action Limit (PAL) in samples VAS-1 (7', 12', & 17'), VAS-2 (15'), VAS-3 (15'), VAS-8 (14.5'), and VAS-12 (15' & 20'). The TCE concentration also exceeded the WAC Ch. NR 140 Enforcement Standard (ES) in samples VAS-1 (12' & 17'), VAS-2 (15'), and VAS-3 (15'). The results also showed that cis-1,2-Dichloroethene (cis-DCE) exceeded the WAC Ch. NR 140 PAL in sample VAS-12 (20'). TCE, cis-DCE and additional CVOCs were detected in some other samples, at concentrations below both their respective PALs and ESs. Additionally, barium was detected in sample VAS-10 (7') but at concentrations below the PAL and ES for barium. No other metals were detected in the sample. A summary of the groundwater analytical results is available in Table 3. A summary of analytical detection results is also presented on Figure 9, and a TCE iso-concentration map is presented on Figure 10.

Generally, the groundwater samples that had contaminants in exceedance of regulatory limits were located at the north-northeast of the investigated area.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 CONCLUSIONS

The primary conclusions of the initial site investigation of the Former Hamilton Industries site include:

1. The most transmissive groundwater is present in a shallow perched sand aquifer. The shallow sand unit seen near surface in the soil borings is underlain by a fine grained unit of clay and silt. Although the presence of the fine grained soil could impede the downward migration of contaminants, no samples were able to be collected from this unit to vertically delineate the groundwater impacts observed.

2. Monitoring well MW-02 (previously installed by the City of Two Rivers to the south of the Site) had a gauged thickness of LNAPL of 0.17-feet. A "diesel like" odor was recorded on the boring log. A review of historical documents has not clearly established a historic source of the LNAPL. In addition, the lateral extent of the LNAPL has not been fully delineated to the north, south and west of MW-02.

3. Groundwater sampling and analysis for CVOCs indicate that TCE is the primary CVOC detected in the groundwater samples. Concentrations of TCE above the WDNR ES were observed immediately to the south of 17th Street in VAS-1 (964 ug/l), VAS-2 (610 ug/l) and VAS-3 (503 ug/l). Concentrations of CVOCs detected at other VAS locations did not exceed the ES. The lateral extent of TCE has not been delineated to the north across 17th Street or in the vicinity of Building 5 located to the north of 17th Street. The vertical extent of TCE also has not been delineated due to the present of low conductivity silty clays and clays that precluded collection of deeper groundwater samples.

4. Lead was not detected in groundwater sampled from VAS-10 that was located in the vicinity of the soil sample SP-1 that slightly exceeded the WDNR soil-to-groundwater RCL and BTV for lead. This indicates that the concentration of lead detected in the soil has not resulted in groundwater impacts. No further action is requested for the lead detected at SP-1.

6.2 RECOMMENDATIONS

Based on the results of the initial site investigation, ERM proposes conducting additional investigation activities at the Site to evaluate the LNAPL observed at MW-02 and further delineate the extent of CVOCs in groundwater to the north of 17th Street and to verify vertical extent with depth. The additional proposed investigation activities include:

Additional LNAPL Evaluation

1. Install additional monitoring wells to the north of MW-02 to delineate the extent of LNAPL observed in the well on the Site.

2. Perform an electromagnetic survey in the vicinity of the former heating oil tanks with capacities of 17,000 and 20,000 gallons to determine if they were USTs and were removed or abandoned in-place.

Additional CVOC Evaluation

1. Abandon the temporary well locations installed at the Site.

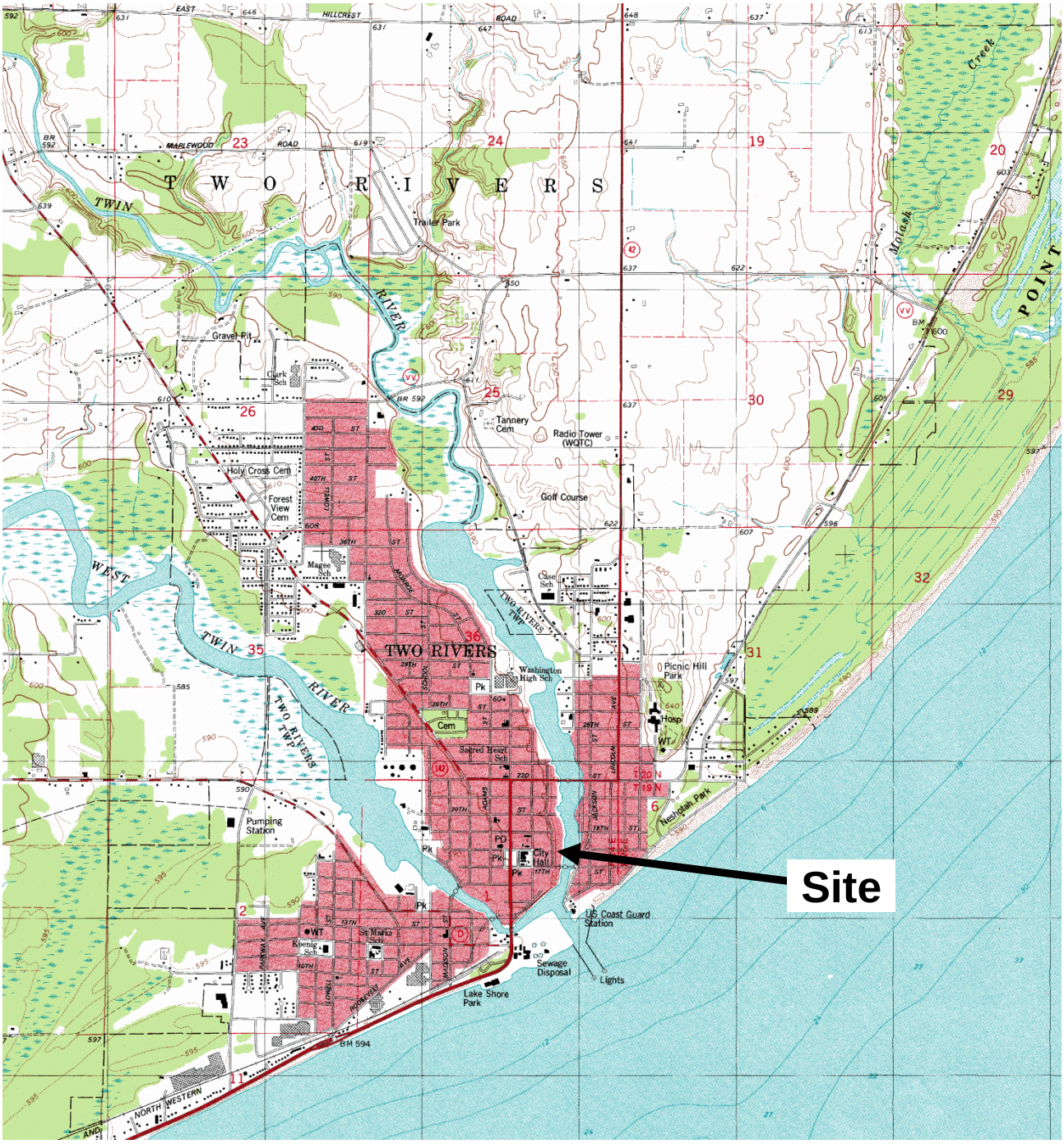
2. Install and sample permanent monitoring wells in the shallow perched aquifer across the Site to the south of 17th Street to confirm the nature and extent of TCE as delineated by the VAS sampling with permanent monitoring wells.

3. Install and sample permanent monitoring wells below the shallow perched aquifer to the south of 17th Street to provide vertical delineation of TCE detected in groundwater and confirm that downward migration of TCE has been limited by the presence of the silty-clay/clay layers.

4. Perform additional investigation to the north of 17th Street to delineate the horizontal extent of TCE observed at VAS-1, -2 and -3 and investigate the potential sources of the TCE in the vicinity of Building 5.

Within 60 days after submitting the Site Investigation Report, the proposed recommendations will be the basis of a supplemental investigation work plan that will be prepared and submitted to the WDNR for approval.

Figures



SOURCE: Two Rivers, WI 7.5 MINUTE TOPOGRAPHIC QUADRANGLE, 1978

APPROX. SCALE: 1:50,000

ERM

SITE LOCATION MAP
Former Hamilton Industries Facility
1316 18th Street
Two Rivers, Wisconsin

Figure
1

Legend

Property Boundary (approx)

N

0 500 Feet

FIGURE 2

Site Layout Map

Former Hamilton Industries
Two Rivers, Wisconsin

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This information is for environmental review purposes only.

P:\Projects\0383990 Thermo Fisher Scientific, Inc Two Rivers Further Investiga.DC\Deliverables\TWORIVERS GIS\FIGURE 2-SiteLayoutMap.mxd | REVISED: 05/26/2017 | SCALE: 1:3,000 DRAWN BY: GIS

FIGURE 3

Surrounding Properties Zoning Map

Former Hamilton Industries
Two Rivers, Wisconsin

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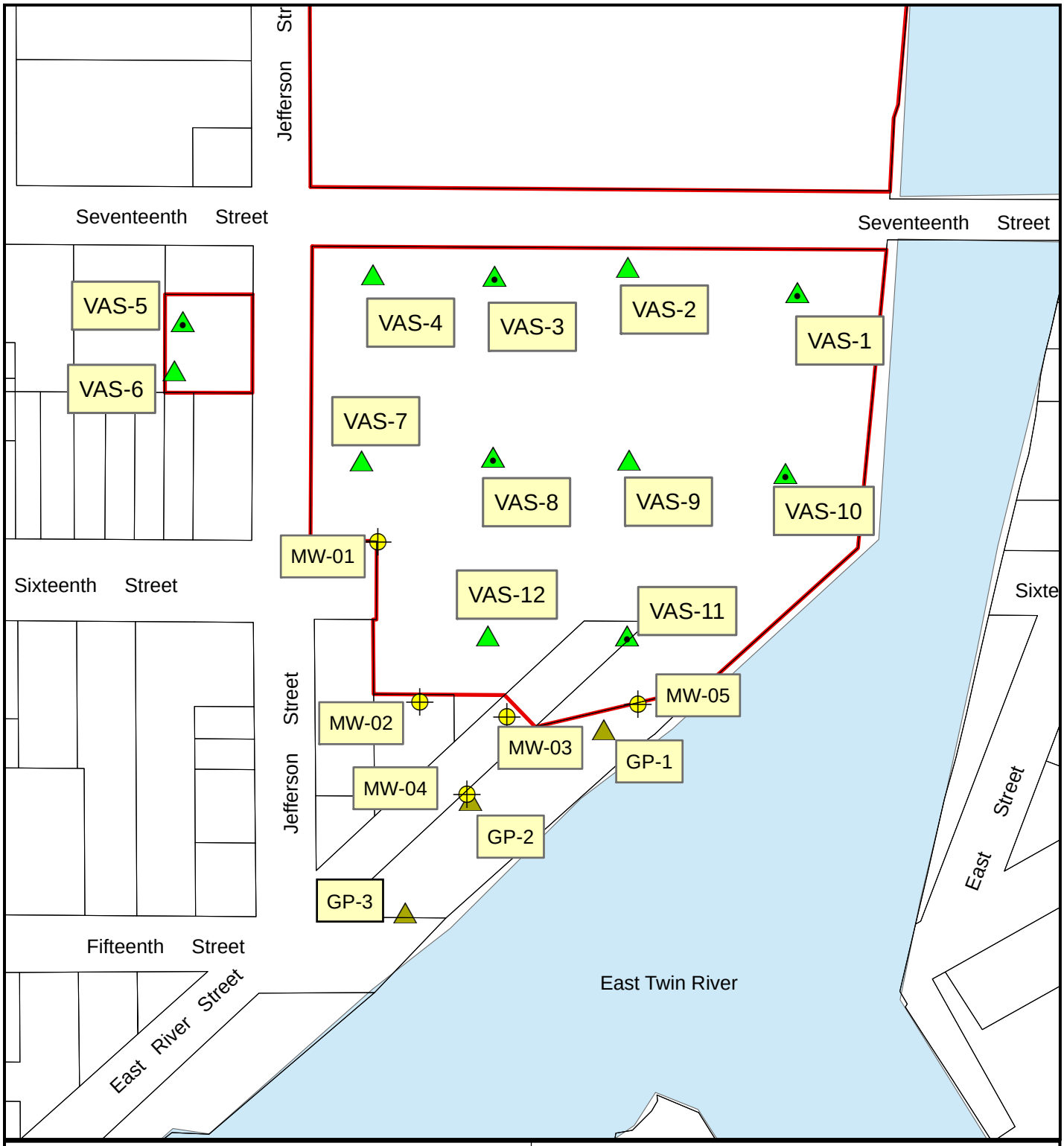
P:\Projects\0383990 Thermo Fisher Scientific, Inc Two Rivers Further Investiga.DC\Deliverables\TWORIVERS GIS\FIGURE 3-Area ZoningMap.mxd | REVISED: 05/26/2017 | SCALE: 1:4,000 DRAWN BY: GIS



Legend

- GP-1: McMahon Geoprobe
- MW-01: City of Two Rivers Well
- VAS-1: VAS Boring
- VAS Boring with Temporary Well
- Property Boundary (approx)

N

0 100 Feet

This information is for environmental review purposes only.

FIGURE 4

Site Investigation Locations Map

Former Hamilton Industries
Two Rivers, Wisconsin

ERM

P:\Projects\0383990 Thermo Fisher Scientific, Inc Two Rivers Further Investiga.DC\Deliverables\TWORIVERS GIS\FIGURE 4-Site Investigations Location Map.mxd | REVISED: 05/30/2017 | SCALE: 1:1,750 DRAWN BY: GIS

GEOLOGIC CROSS SECTION

N

S

VAS-3

VAS-8

VAS-12

MW-02*

MW-04*

GP-03* (ELEVATION ESTIMATED)

SLOPE

ELEVATION IN FEET (AMSL)

600

595

590

585

580

575

570

GS

GA

LEGEND

GS GROUNDWATER SAMPLE COLLECTED

GA GROUNDWATER SAMPLE ATTEMPTED

* CITY OF TWO RIVERS WELL/BORING

CLAY

FINE TO MEDIUM GRAINED SAND

CLAY TO SILTY CLAY

GRAVEL

WATER ELEVATION

0 5

0 50

SCALE (IN FEET)

Drawn By GML	FORMER HAMILTON INDUSTRIES	CHK'D BB
CADD Review FGB	TWO RIVERS, WISCONSIN	0383990
Date Drawn/Rev'd 5/16/17	Environmental Resources Management	FIGURE 5

ERM®

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GEOLOGIC CROSS SECTION

W

E

VAS-5

JEFFERSON STREET

VAS-4

VAS-3

VAS-2

SLOPE

VAS-1

NO RECOVERY

650

600

595

590

585

580

575

570

565

ELEVATION IN FEET (AMSL)

GS

GA

LEGEND

- GS GROUNDWATER SAMPLE COLLECTED
- GA GROUNDWATER SAMPLE ATTEMPTED
- FINE TO MEDIUM SAND
- SILT
- CLAY TO SILTY CLAY
- ASPHALT
- CONCRETE
- WATER ELEVATION

5

0

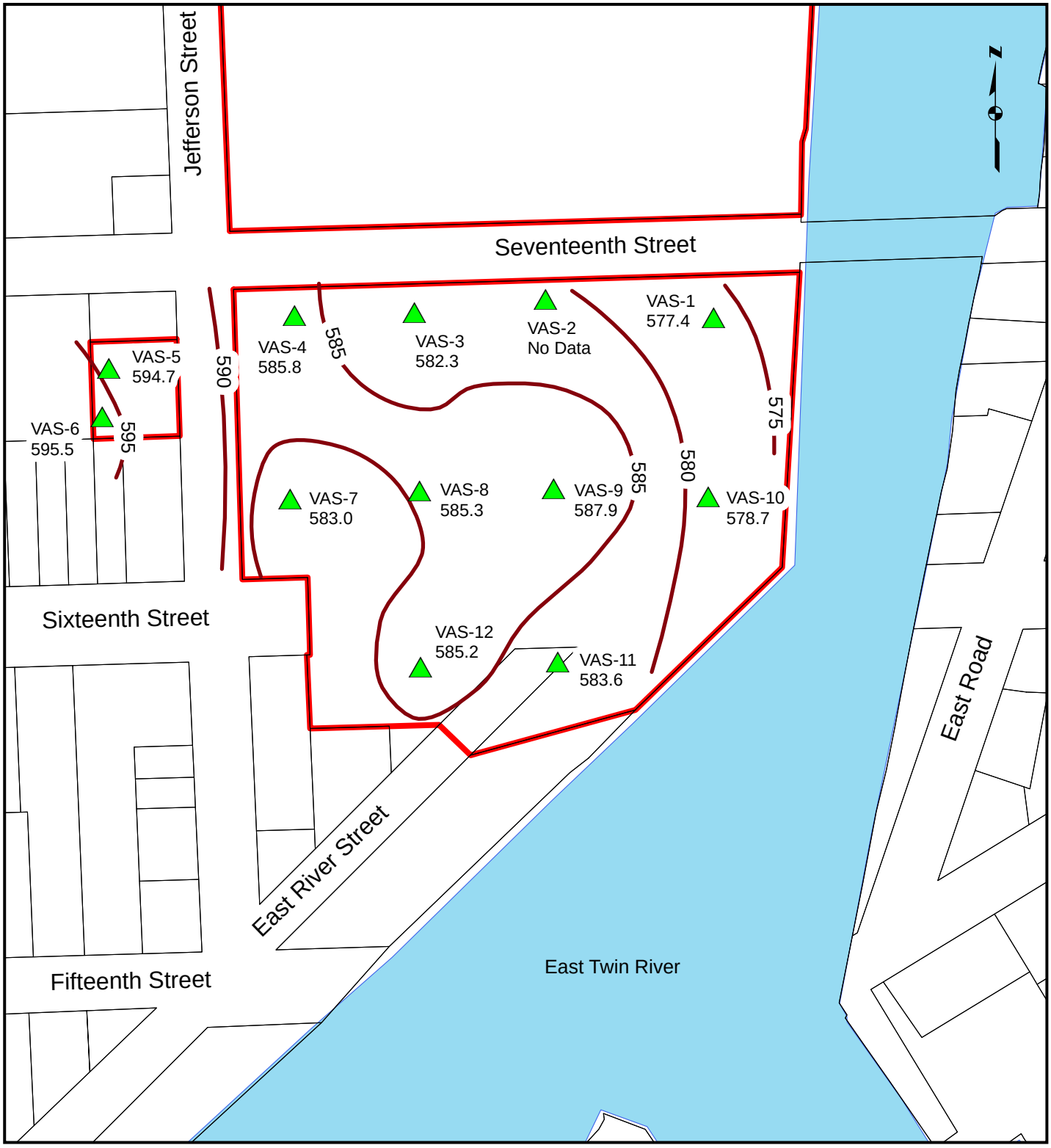
0 50

SCALE (IN FEET)

Drawn By GML	FORMER HAMILTON INDUSTRIES	CHK'D BB
CADD Review FGB	TWO RIVERS, WISCONSIN	0383990
Date Drawn/Rev'd 5/16/17	Environmental Resources Management	FIGURE 6

ERM®

Q:\Team\DMM\GintQ-T\Thermo Fisher\0383990\0383990-01.dwg, X-SECTION W-E, 5/30/2017 12:17:51 PM, GML



Legend

- VAS-1: VAS Boring
- Top of Silt/Clay Contact
- Property Boundary (approx)
- East Twin River

Elevation of silt/clay contact in feet above mean sea level.

0 50 100 Feet

FIGURE 7

Clay Contact Elevation Map

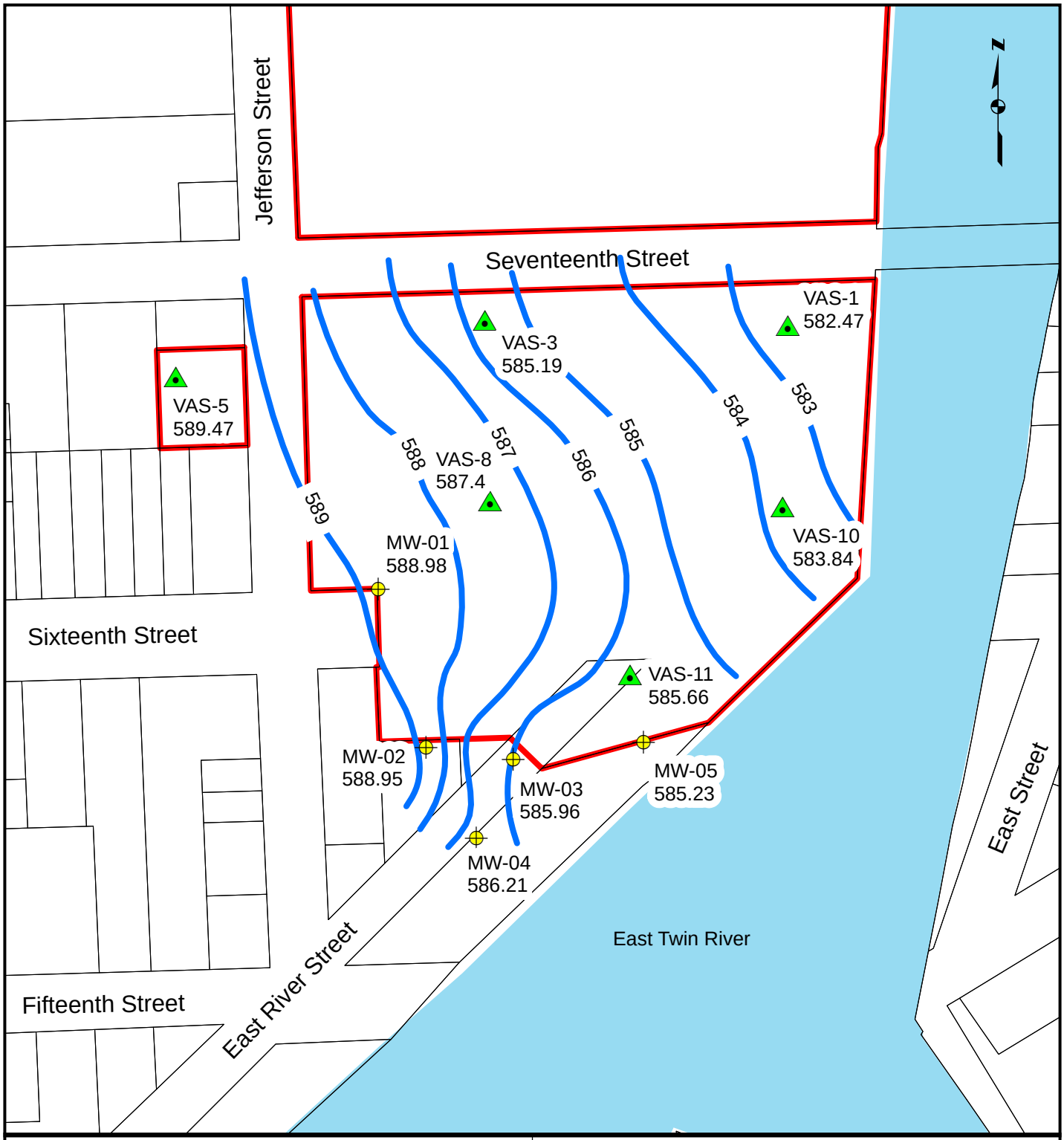
Former Hamilton Industries
Two Rivers, Wisconsin

This information is for environmental review purposes only.

ERM

P:\Projects\0383990 Thermo Fisher Scientific, Inc Two Rivers Further Investiga.DC\Deliverables\TWORIVERS GIS\FIGURE 7-ClayContactMap.mxd | REVISED: 05/30/2017 | SCALE: 1:1,750

DRAWN BY: GIS



Legend

0 50 100 Feet

- MW-01: City of Two Rivers Well
- VAS Boring with Temp Well
- Property Boundary (approx)
- East Twin River
- 583: Groundwater Contour, 25 April 2017
  Elevations are in feet above mean sea level.

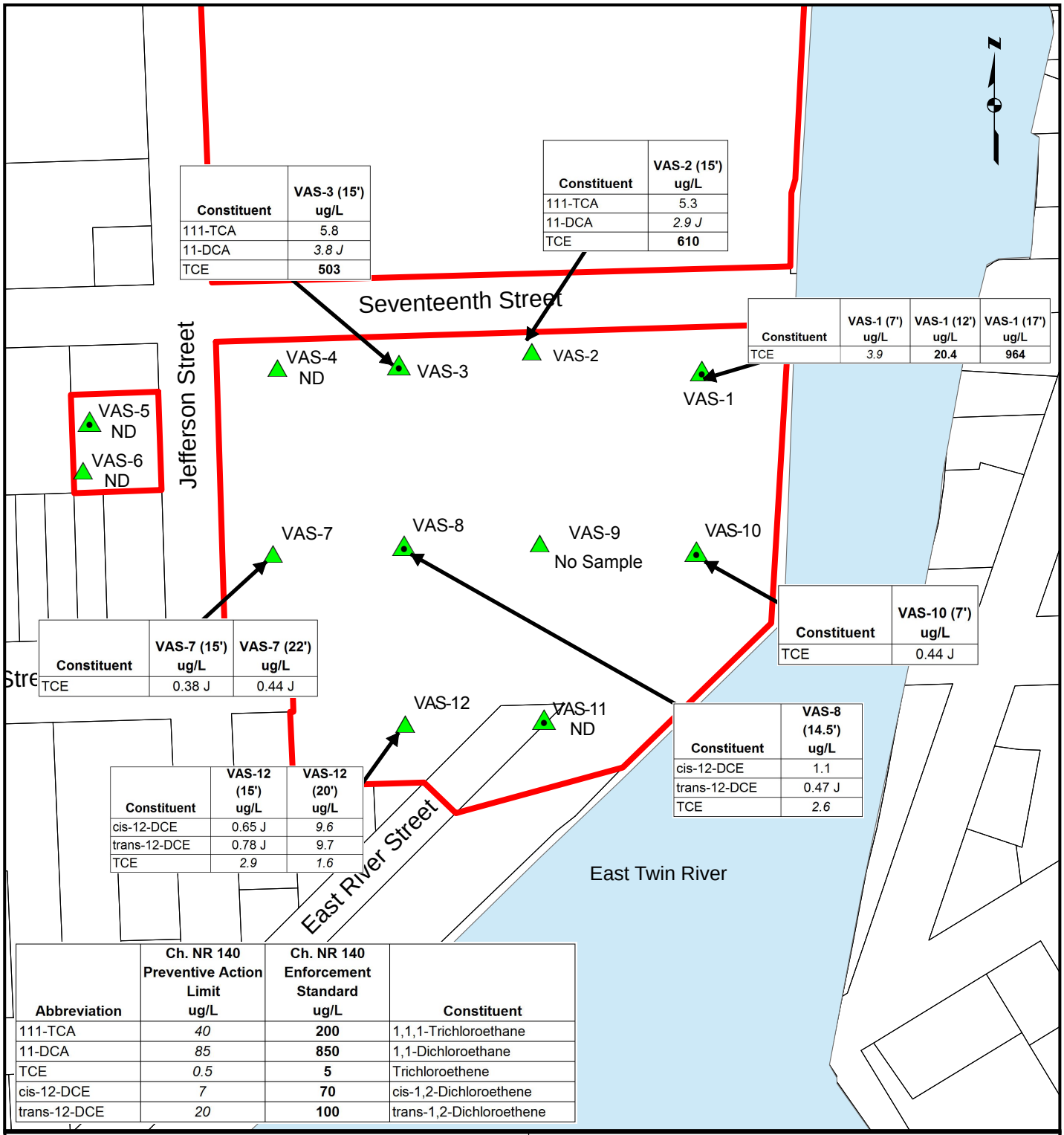
FIGURE 8

Groundwater Contour Map
Former Hamilton Industries
Two Rivers, Wisconsin

This information is for environmental review purposes only.

ERM

P:\Projects\0383990 Thermo Fisher Scientific, Inc Two Rivers Further Investiga.DC\Deliverables\TWORIVERS GIS\FIGURE 8-GW_ContourMap.mxd | REVISED: 05/30/2017 | SCALE: 1:1,750 DRAWN BY: GIS



Constituent	VAS-3 (15') ug/L
111-TCA	5.8
11-DCA	*3.8 J*
TCE	**503**

Constituent	VAS-2 (15') ug/L
111-TCA	5.3
11-DCA	*2.9 J*
TCE	**610**

Constituent	VAS-1 (7') ug/L	VAS-1 (12') ug/L	VAS-1 (17') ug/L
TCE	*3.9*	**20.4**	**964**

Constituent	VAS-7 (15') ug/L	VAS-7 (22') ug/L
TCE	0.38 J	0.44 J

Constituent	VAS-10 (7') ug/L
TCE	0.44 J

Constituent	VAS-8 (14.5') ug/L
cis-12-DCE	1.1
trans-12-DCE	0.47 J
TCE	*2.6*

Constituent	VAS-12 (15') ug/L	VAS-12 (20') ug/L
cis-12-DCE	0.65 J	*9.6*
trans-12-DCE	0.78 J	9.7
TCE	*2.9*	*1.6*

Abbreviation	Ch. NR 140 Preventive Action Limit ug/L	Ch. NR 140 Enforcement Standard ug/L	Constituent
111-TCA	*40*	**200**	1,1,1-Trichloroethane
11-DCA	*85*	**850**	1,1-Dichloroethane
TCE	*0.5*	**5**	Trichloroethene
cis-12-DCE	*7*	**70**	cis-1,2-Dichloroethene
trans-12-DCE	*20*	**100**	trans-1,2-Dichloroethene

Legend

- VAS Temp Well
- VAS-1: VAS Boring
- East Twin River
- Property Boundary (approx)

0 50 100 Feet

Notes:
Results are expressed in micrograms per liter (ug/L)
Italics = Constituent Exceeds Ch. NR 140 Protective Action Limit
Bold = Constituent Exceeds Ch. NR Enforcement Standard
ND = Not Detected

FIGURE 9

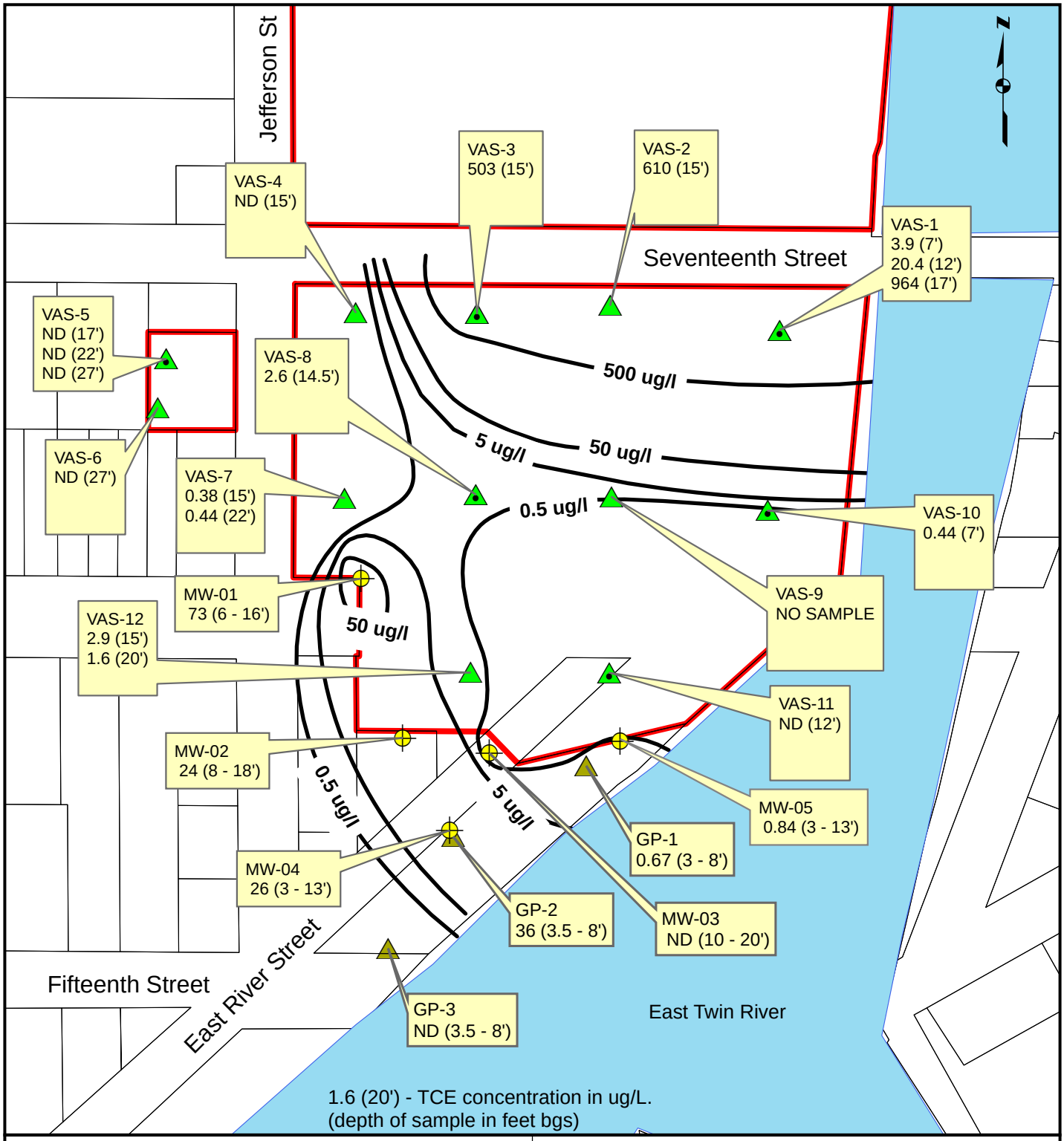
Analytical Results Detection Summary

Former Hamilton Industries
Two Rivers, Wisconsin

This information is for environmental review purposes only.

ERM

P:\Projects\0383990 Thermo Fisher Scientific, Inc Two Rivers Further Investiga.DC\Deliverables\TWORIVERS GIS\FIGURE 9-AnalyticalDetectionSummary2.mxd | REVISED: 05/30/2017 | SCALE: 1:1,750 DRAWN BY: GIS



Legend

- VAS Boring with Temp Well
- VAS-1: VAS Boring
- MW-01: City of Two Rivers Well
- TCE Isocontour
- GP-01: McMahon Geoprobe
- Property Boundary (approx)

0.5 ug/L - TCE PAL
5.0 ug/L - TCE ES
ND - Not Detected

0 50 100 Feet

FIGURE 10

TCE Isoconcentration Map

Former Hamilton Industries
Two Rivers, Wisconsin

ERM

This information is for environmental review purposes only.

P:\Projects\0383990 Thermo Fisher Scientific, Inc Two Rivers Further Investiga.DC\Deliverables\TWORIVERS GIS\FIGURE 10-TCE_IsocontourMap.mxd | REVISED: 05/30/2017 | SCALE: 1:1,750 DRAWN BY: GIS

Tables

TABLE 1
GROUNDWATER GAUGING DATA
Former Hamilton Industries Site
Two Rivers, Wisconsin

Well ID	Well TOC Elevation (ft amsl)	DTW (ft BTOC)	GW Elevation (ft amsl)
ERM Wells:			
VAS-1	587.02	4.55	582.47
VAS-3	600.32	15.13	585.19
VAS-5	603.73	14.26	589.47
VAS-8	601.88	14.48	587.4
VAS-10	587.25	3.41	583.84
VAS-11	597.3	11.64	585.66
City Wells:			
MW-01	603.74	14.76	588.98
MW-02*	602.44	13.46(DTP)/13.63(DTW)	588.954
MW-03	597.5	11.54	585.96
MW-04	590.45	4.24	586.21
MW-05	585.88	0.65	585.23

Notes:

ft amsl = Feet Above Mean Sea Level

DTW = Depth To Groundwater Corrected DTW for MW-02 = 13.486

ft btoc = Feet Below well Top of Casing

DTP = Depth to Product (LNAPL)

* = The groundwater elevation for MW-02 was calculated using a Corrected DTW value of 13.486'. The corrected value was caluclated by: [Corrected DTW = Measured DTW - (Denisty of LNAPL / Denisty of Water) x Measured Thickness of LNAPL]. The density of LNAPL was assumed at 0.9 g/cm3.

TABLE 2
GROUNDWATER SAMPLE INTERVAL SUMMARY
Former Hamilton Industries Site
Two Rivers, Wisconsin

Well ID	Well TOC Elevation (ft amsl)	GS Elevation (ft amsl)	DTW (ft btoc)	GW Elevation (ft amsl)	Shallow GW Interval (ft bgs)	Shallow GW Sample Elevation (ft amsl)	Intermediate GW Interval (ft bgs)	Intermediate GW Sample Elevation (ft amsl)	Deep GW Inteval (ft bgs)	Deep GW Sample Elevation (ft amsl)
VAS-1	587.02	587.4	4.55	582.47	7	580.4	12	575.4	17	570.4
VAS-2*	-	596.3	-	-	15	581.3	NS	NA	NS	NA
VAS-3	600.32	599.3	15.13	585.19	15	584.3	NS	NA	NS	NA
VAS-4*	-	601.8	-	-	15	586.8	NS	NA	NS	NA
VAS-5	603.73	603.9	14.26	589.47	17	586.9	22	NA	27	576.9
VAS-6*	-	604.0	-	-	NS	NA	NS	NA	27	577.0
VAS-7*	-	602.0	-	-	15	587	22 (a)	580.0	NS	NA
VAS-8	601.88	600.3	14.48	587.4	14.5	585.8	NS	NA	NS	NA
VAS-9*	-	596.9	-	-	NS	NA	NS	NA	NS	NA
VAS-10	587.25	587.5	3.41	583.84	7	580.5	NS	NA	NS	NA
VAS-11	597.3	597.1	11.64	585.66	12	585.1	NS	NA	NS	NA
VAS-12* (b)	-	600.4	-	-	15	585.4	20	580.4	NS	NA

Notes:

GS Elevation = Ground Surfave Elevation in feet above mean sea level.

DTW = Depth to Groundwater

* = DTW data and GW sample intervals based off water level in nearest monitoring well.

GW = Groundwater

ft amsl = Feet Above Mean Sea Level

ft btoc = Feet Below Top of Casing

ft bgs = Feet Below Ground Surface

NS = Sample interval did not produce sufficient groundwater, GW sample was not collected. At each interval 30 minutes was allowed for GW recharge, and multiple depth adjustments were attempted.

NA = Not Applicable

(a) = Sample Interval only produced enough water to fill one of three sample vials.

(b) = GW sample interval selections based off water elevation in City of Two Rivers well MW-02.

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
Former Hamilton Industries Site
Two Rivers, Wisconsin

Constituent	Ch. NR 140 Preventive Action Limit ug/L	Ch. NR 140 Enforcement Standard ug/L	VAS-1 (7') ug/L	VAS-1 (12') ug/L	VAS-1 (17') ug/L	VAS-2 (15') ug/L	VAS-3 (15') ug/L	VAS-4 (15') ug/L	VAS-5 (17') ug/L	VAS-5 (22') ug/l	VAS-5 (27') ug/L	VAS-6 (27') ud/L	VAS-7 (15') ug/L	VAS-7 (22') ug/L	VAS-8 (14.5') ug/L	VAS-10 (7') ug/L	VAS-11 (12') ug/L	VAS-12 (15') ug/L	VAS-12 (20') ug/L
1,1,1-Trichloroethane	40	200	<0.50	<0.50	<5.0	5.3	5.8	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	0.5	5	<0.20	<0.20	<2.0	<0.99	<0.99	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
1,1-Dichloroethane	85	850	<0.24	<0.24	<2.4	2.9 J	3.8 J	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24
1,1-Dichloroethene	0.7	7	<0.41	<0.41	<4.1	<2.1	<2.1	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41
1,2-Dichloroethane	0.5	5	<0.17	<0.17	<1.7	<0.84	<0.84	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17
cis-1,2-Dichloroethene	7	70	<0.26	<0.26	<2.6	<1.3	<1.3	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	1.1	<0.26	<0.26	0.65 J	**9.6**
trans-1,2-Dichloroethene	20	100	<0.26	<0.26	<2.6	<1.3	<1.3	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	<0.26	0.47 J	<0.26	<0.26	0.78 J	9.7
Tetrachloroethene	0.5	5	<0.50	<0.50	<5.0	<2.5	<2.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Trichloroethene	0.5	5	**3.9**	**20.4**	**964**	**610**	**503**	<0.33	<0.33	<0.33	<0.33	<0.33	0.38 J	0.44 J	**2.6**	0.44 J	<0.33	**2.9**	**1.6**
Vinyl chloride	0.02	0.2	<0.18	<0.18	<1.8	<0.88	<0.88	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18

Constituent	Ch. NR 140 Preventive Action Limit	Ch. NR 140 Enforcement Standard	VAS-10 (7') ug/L
Arsenic	1	10	<5.4
Barium	400	2000	31.1
Cadmium	0.5	5	<1.3
Chromium	10	100	<2.5
Lead	1.5	15	<4.3
Selenium	10	50	<5.6
Silver	10	50	<3.2
Mercury	0.2	2	<0.13

Notes:

Results are expressed as micrograms per liter (ug/L).

Bold = Constituent concentration exceeds Ch. NR 140 Preventative Action Limit.

Hatch = Constituent concentration exceeds Ch. NR 140 Enforcement Standard

Appendices

Appendix A

Certified Survey Map

ALTA/NSPS Land Title Survey

Part of Lots 6, 7, 10, 11 and all of Lot 8 of Block 41, all of Lots 3, 4, 5, 6, 7, 8, 9, 10, and part of Lots 2, 11 and 12 of Block 52, all of Lots 1, 2, 3, 4, 5, and 6 of Block 54, all of Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 of Block 55, part of Lots 1 and 2 of Block 66, all of Lots 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12 of Block 67, all of Lots 1, 2, 3, 4, 5, and 6 of Block 68, all of Lot 1 and part of Lots 2, 3, 4 and 5 of Block 70, part of Lots 1, 2, 3 and 4 of Block 69, parts of the Vacated East River Street, parts of the Vacated Eighteenth Street and part of the vacated Sixteenth Street all being part of the recorded plat of "Two Rivers", recorded in Volume 1, Plats, page 111, City of Two Rivers, Manitowoc County, Wisconsin.

60 30 0 60 120 180

Graphic Scale

LEGAL DESCRIPTION:

The following located in Block Forty–one (41) of the City of Two Rivers, Manitowoc County, Wisconsin, known as the Original Plat thereof, according to the Recorded Plat of said City.

The South One Hundred (100) feet of Lots Six (6) and Seven (7), all of Lot Eight (8), the East Eleven (11) feet of the South One Hundred Six (106) feet of Lot 10; the West Fifteen (15) feet of the South One Hundred Six (106) feet of Lot Eleven (11) and the North Sixteen (16) feet of the South One Hundred Six (106) feet of the East Fourty–five (45) feet of Lot Eleven (11).

The following located in Block Fifty–two (52) of the City of Two Rivers, Manitowoc County, Wisconsin, known as the Original Plat thereof, according to the Recorded Plat of said City;

All of Lots Three (3), Four (4), Five (5), Six (6), Seven (7), Eight (8), Nine (9) and Ten (10);

All of Lot Twelve (12), except the Northerly Ten and one–quarter (10–1/4) inches of said Lot;

All of Lot Eleven (11), except the Northerly Ten and one–quarter (10–1/4) inches of said lot, but nevertheless including that portion of said Northerly Ten and one–quarter (10–1/4) inches which lies to the West (not North or South) of the West wall of the concrete block warehouse of Eggers Plywood Company located on said Lot Eleven (11);

All that portion of Lot Two (2) lying to the West (not North or South) of the West wall of said concrete block warehouse of Eggers Plywood Company located on said Lot Two (2);

The portions of Lot Two (2) and Eleven (11) lying West of said concrete block warehouse wall constituting a strip of land extending Westerly from said wall to the West boundary of said Lots Two (2) and Eleven (11), said strip measuring approximately 64.65 feet North–South and 0.45 feet East–West at the Southerly end of the strip and 0.60 feet East–West at the Northerly end thereof, as more fully described in instrument recorded in Volume 318 of Deeds, page 209 in said County.

The vacated portions of sidewalks adjoining certain Lots in said Block Fifty–two (52) and describes as follows:

All that portion of the sidewalk on the Easterly side of Jefferson Street extending from the Westerly boundary line of Lot Six (6), Block Fifty–two (52), in the City of Two Rivers, according to the recorded plat of said City, Westerly a distance of Twenty (20) inches.

All that portion of the sidewalk on the Southerly side of 19th Street extending from the Northerly boundary line of Lots Three (3), Four (4), Five (5) and Six (6) of Block Fifty–two (52) in the City of Two Rivers, Wisconsin, Northerly a distance of Twenty (20) inches.

All of Block Fifty–four (54) in said City of Two Rivers, Manitowoc County, Wisconsin, known as the Original Plat thereof, according to the Recorded Plat of said City.

All of Block Fifty–five (55) in said City of Two Rivers, Manitowoc County, Wisconsin, known as the Original Plat thereof, according to the Recorded Plat of said City.

The following located in Block Sixty–six (66) of said City of Two Rivers, Manitowoc County, Wisconsin, known as the Original Plat thereof, according to the Recorded Plat of said City;

The South One Hundred (100) feet of Lot One (1) and the South One Hundred (100) feet of the East one–half (E1/2) of Lot Two (2).

All of Block Sixty–seven (67) in said City of Two Rivers, Manitowoc County, Wisconsin, known as the Original Plat thereof, according to the Recorded Plat of said City.

All of Block Sixty–eight (68) in said City of Two Rivers, Manitowoc County, Wisconsin, known as the Original Plat thereof, according to the Recorded Plat of said City.

The following located in Block Sixty–nine (69) of said City of Two Rivers, Manitowoc County, Wisconsin, known as the Original Plat thereof, according to the Recorded Plat of said City;

All of Lot One (1) and all of Lots Two (2), Three (3) and Four (4) excepting those portions of said Lots Two (2), Three (3) and Four (4) conveyed to the City of Two Rivers as described in Volume 275 of Deeds, page 527, in the Office of the Register of Deeds for Manitowoc County, Wisconsin.

The following, located in Block Seventy (70) of said City of Two Rivers, Manitowoc County, Wisconsin, known as the Original Plat thereof, according to the Recorded Plat of said City;

All of Lot one (1); the North Seventy–five (75) feet of Lot Two (2); the North Seventy–five (75) feet of Lot Three (3); and the North Seventy–five (75) feet of Lot Four (4).

All that part of 18th Street (now vacated) in the City of Two Rivers, Wisconsin running Easterly from the East line of Jefferson Street to the centerline of East River Street, and that part of the South ½ of said 18th Street (now vacated) running Easterly from the centerline of East River Street to the East Twin River, including the portions thereof which lie in the intersection of 18th and East River Streets.

All that part of 16th Street (now vacated) in the City of Two Rivers running Westerly from the East Twin River to a line drawn across said 16th Street at right angles to the centerline thereof and located 65 feet East of the East line of Jefferson Street, including such portion thereof as lies in the intersection of 16th and East River Streets.

All those parts of East River Street (now vacated) in said City of Two Rivers running;

(i) Southerly from the South line of 18th Street (now vacated) to the North line of 17th Street;
(ii) Southerly from the South line of 17th Street to the North line of 16th Street (now vacated); and
(iii) Southwesterly from the South line of 16th Street (now vacated) to the turn–around located between Blocks 69 and 70 in said City, being the premises described in that certain resolution of the Council of said City which is recorded in Volume 292 of Deeds, page 265, Doc. #393511, office of the Register of Deeds for Manitowoc County, Wisconsin.

Together with and including those portions of the intersections of vacated East River Street with vacated 16th and 18th Streets which are described above.

This being the same property as described in Chicago Title Insurance Company, Title Commitment Number CO–5235, dated September 14, 2016.

To: Fisher Scientific International LLC, a Delaware limited liability company; Chicago Title Insurance Company.

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items and includes items 4, 6(a), 6(b) & 21 of Table A thereof. The field work was completed on November 2, 2016.

Date of Plat of Map: November 9, 2016

WISCONSIN DAVID J. CHROUSER PLS–1579 GREEN BAY, WI LAND SURVEYOR

David J. Chrouser
PLS–1579
www.mau–associates.com
dchrouser@mau–associates.com

SCHEDULE B–SECTION 2 NOTES

16) Sewer easement (198, Deeds, page 63) granted to the City of Two Rivers recorded April 9, 1941 as Document No. 251649, is illustrated on subject property.

17) Easement to Commonwealth Telephone Company (227, Deeds, page 422) across Lots 7, 8 and 9 of Block 52, recorded on September 9, 1946, as Document No. 287711, is unplottable due to no width or location is mentioned within said lots.

18) Truck access easement for the intersection of the right of ways of 18th and East River Streets to Eggers Plywood and Veneer Company, its successors and assigns (Volume 412, Records, page 29, Document No. 436899), as illustrated on survey.

19) Conditional Use–Portion of 1619 Jefferson St. is zoned I–1 Industrial District, but was granted a Conditional Use Permit for a wood type museum. Conditions of the permit concerning operation, building and the site are listed on the permit in Volume 1305, Records, page 622, as Document No. 815995.

20) Terms and conditions of Land Covenant in regards to the Conditional Use Permit in Volume 1325, Records, page 61, as Document No. 822145.

21) Temporary Limited Easement (Volume 2645, Records, page 351, Document No. 1099583), as plotted, to be in effect until the completion of the 17th Street bridge. Bridge is complete.

22) Volume 2657, Records, page 513, Document No. 1102232, grants an easement to Water and Light Department of Two Rivers and is located in vacated East River Street and Lot 1, Block 68 of the Original plat of Two Rivers, as illustrated on survey.

23) Wisconsin Public Service Corporation was granted two utility easements in Volume 2659, Records, page 731, Document No. 1102679, said easement located on the North and South right of way of Seventeenth Street and adjacent to the bridge crossing the East Twin River, as illustrated on map.

24) Subject to an Easement Agreement by and between Fisher Scientific International LLC and the City of Two Rivers, Wisconsin and Fisher Scientific International LLC, a Delaware limited liability company, recorded May 1, 2014, as Document No. 1143063.

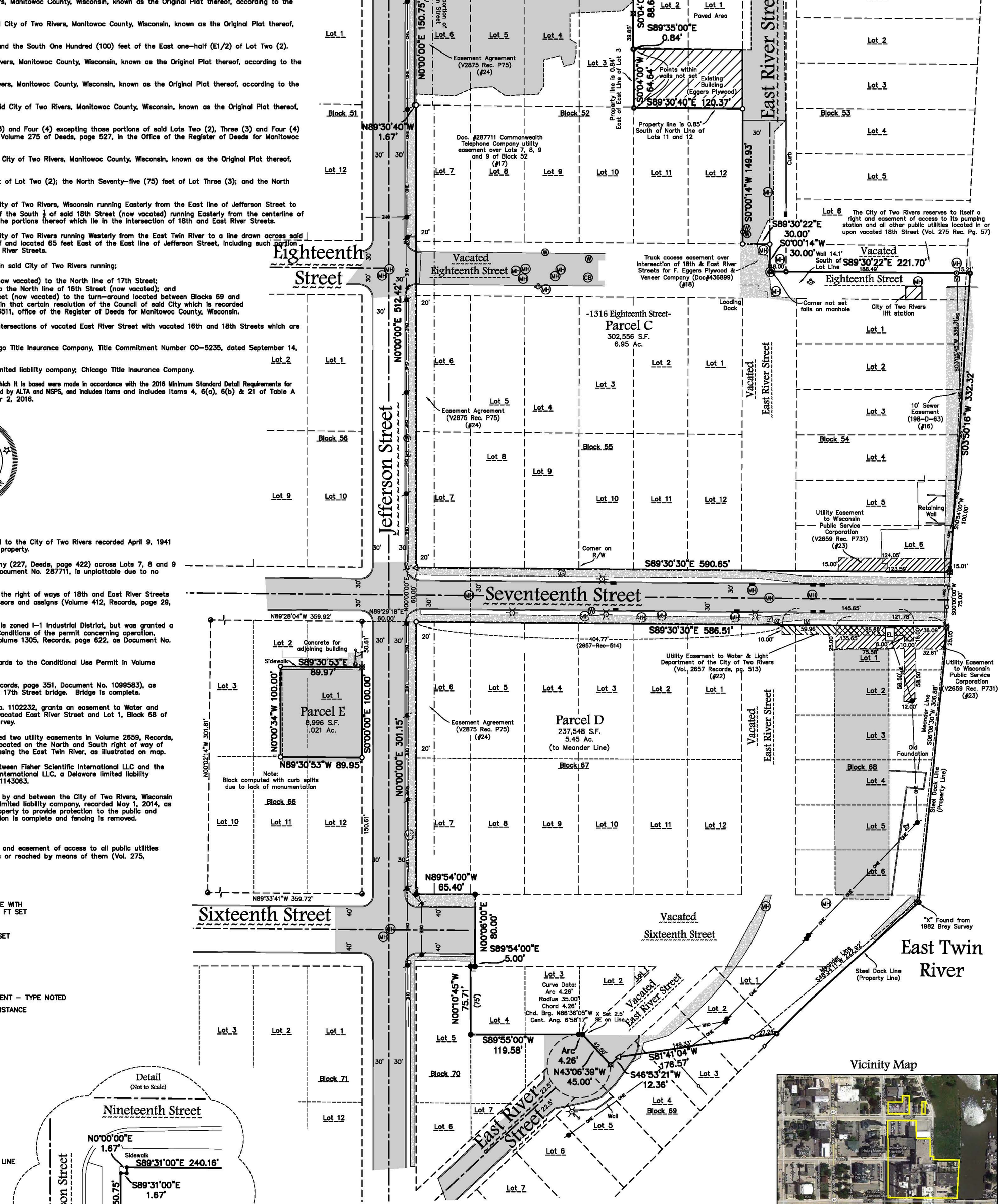
25) Subject to a Right of Way Privilege Agreement by and between the City of Two Rivers, Wisconsin and Fisher Scientific International LLC, a Delaware limited liability company, recorded May 1, 2014, as Document No. 1143064. Agreement for fencing property to provide protection to the public and property during demolition of the building. Demolition is complete and fencing is removed.

NOTES

1) The City of Two Rivers reserves to itself a right and easement of access to all public utilities located in or upon said vacated portions of streets or reached by means of them (Vol. 275, Records, page 523).

LEGEND

- 1.32" (O.D.) X 18" IRON PIPE WITH CAP WEIGHING 1.68 LBS/LIN FT SET
- 1" IRON PIPE FOUND
- COMPUTED POINT NOTHING SET
- CUT + FOUND
- CUT + SET
- 3/4" IRON PIPE FOUND
- PK NAIL FOUND
- MANITOWOC COUNTY MONUMENT – TYPE NOTED
- ( ) RECORDED AS BEARING / DISTANCE
- (MH) SEWER MANHOLE
- CURB INLET
- HYDRANT
- (W) VALVE
- (G) GAS METER
- (V) ELECTRIC VAULT
- LIGHT POLE
- POWER POLE
- ANCHOR WIRE
- OVERHEAD WIRES
- CONCRETE CURB & GUTTER LINE
- BLACKTOP
- CONCRETE
- EXISTING BUILDING
- SHEET RAILING
- FLAG POLE
- (#24) SCHEDULE B–II NOTES



Note:
The street address is 1316 Eighteenth Street

Bearings referenced to the East right of way line of Jefferson Street, assumed to bear N00°00'00"E

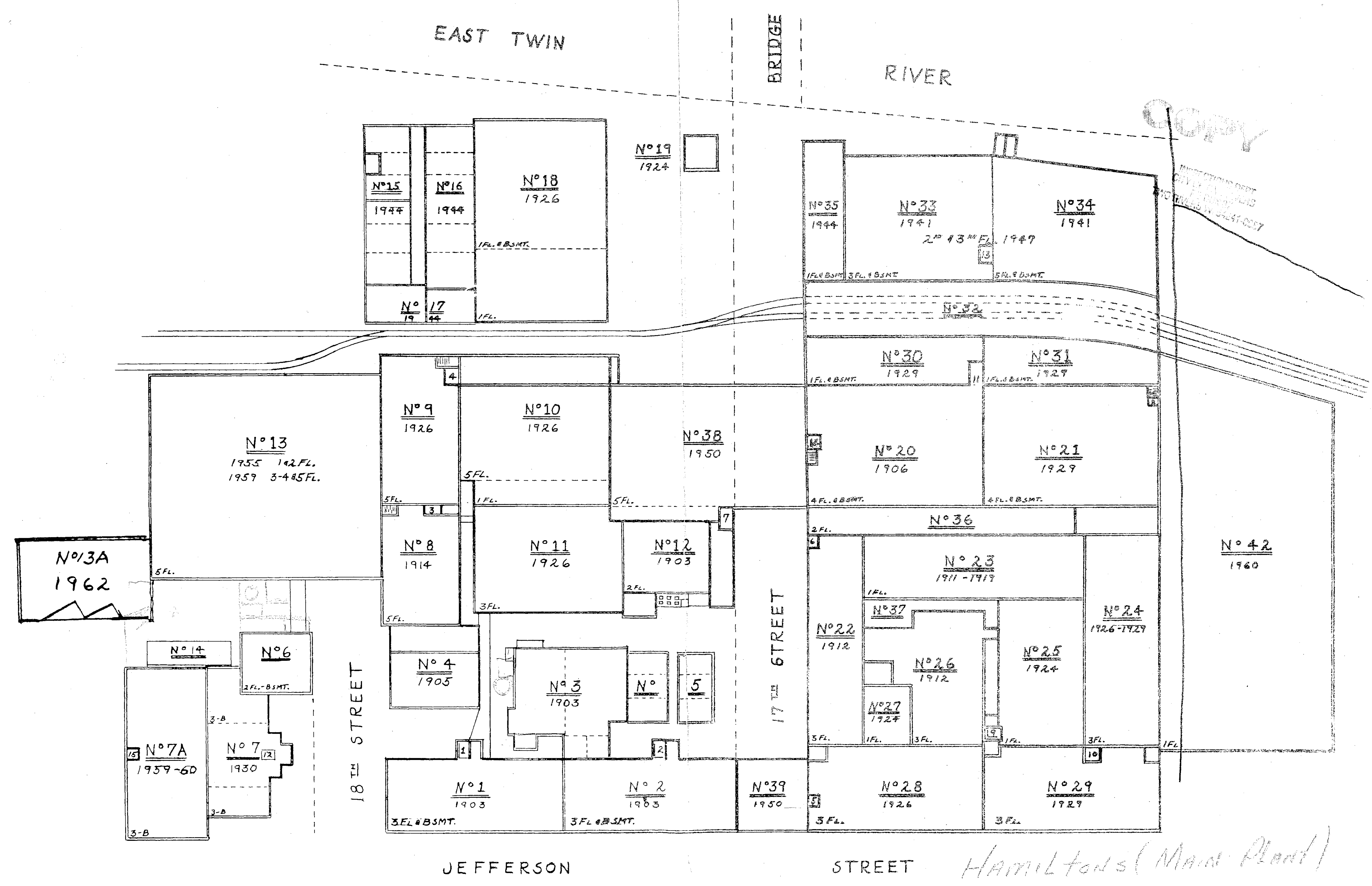
Vicinity Map

SHEET NO. 1 of 1	SCALE: 1" = 60'	ALTA/NSPS Land Title Survey	REUSE OF THIS DOCUMENT All rights including copyrights are retained by Mau & Associates. The client and/or recipient agrees to the fullest extent permitted by law to indemnify and hold Mau & Associates harmless for any reuse of or changes made to the original drawing or data without prior written consent by Mau & Associates.
DRAWING NO. S-2704	TAX PARCEL NO. -- / DRAWN BY: JMB	Thermo-Fisher	UTILITY STATEMENT The underground utilities shown have been located from field survey information and existing as-built drawings. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated although he does certify that they are located as accurately as possible from the information available. The surveyor has not physically located the underground utilities. Except shown hereon, there are no visible easements benefiting or burdening the premises or right-of-way across the land or any other unrecorded easements or rights-of-way of which the surveyor has been advised. (DIGGERS HOTLINE 1-800-242-8511)
PROJECT NO. T-20012	File: T-20012ALTA 102616.dwg		

Mau & Associates
LAND SURVEYING & PLANNING
CIVIL & WATER RESOURCE ENGINEERING
400 Security Boulevard * Green Bay, Wisconsin 54313
Phone: 920-434-9670 Fax: 920-434-9672

Appendix B

Facility Plan Outline



EAST TWIN
RIVER
BRIDGE
N°19
1924
N°15
1944
N°16
1944
N°18
1926
1FL. & BSMT.
1FL.
N° 17
1944
N°35
1944
N°33
1941
N°34
1941
2ND & 3RD FL. 1949
1FL.& BSMT.
3FL.& BSMT.
5FL.& BSMT.
N°32
N°30
1929
N°31
1929
1FL.& BSMT.
N°13
1955 1&2FL.
1959 3-4&5FL.
5FL.
N°13A
1962
N°9
1926
N°10
1926
N°38
1950
N°20
1906
N°21
1929
4FL.& BSMT.
N°36
2FL.
N°8
1914
N°11
1926
3FL.
N°12
1903
2FL.
N°23
1911-1919
N°42
1960
N°22
1912
N°37
N°24
1926-1929
N°26
1912
N°25
1924
N°27
1924
N°14
N°6
2FL.-BSMT.
N°4
1905
N°3
1903
N°
5
17TH STREET
18TH STREET
N°7A
1959-60
N°7
1930
3-B
N°1
1903
3FL.& BSMT.
N°2
1903
3FL.& BSMT.
N°39
1950
N°28
1926
3FL.
N°29
1929
3FL.
JEFFERSON
STREET
Hamiltons (Main Plant)

Appendix C

Soil Boring Logs

3352 128th Avenue
Holland, MI 49424
P: 616-399-3500

PROJECT:
Thermo Fisher Scientific
Former Hamilton Industries Further Site Investigation

BORING # **VAS-1**
ERM PROJECT # 0383990
SHEET 1 OF 1

DRILLING CONTRACTOR	Geoserve, Inc Woodstock, IL	ERM REPRESENTATIVE	Brenna Bellmer
DRILLING FOREMAN	Eduardo D.	OFFICE LOCATION	Milwaukee, WI
DRILLING METHOD	Direct Push	DATE: START	04/24/0207
DRILLING EQUIPMENT	Geoprobe	FINISH	04/24/2017
HORIZONTAL DATUM (NAD 1983 StatePlane Wisconsin South (US Feet))		BOREHOLE DEPTH	20 ft
NORTHING	792426.202	BOREHOLE DIAMETER	2 in
EASTING	2607666.542	DEPTH TO WATER (INITIAL) ▼	6.5 ft 04/24/2017
VERTICAL DATUM (WI Zone South NAD83) ELEVATION	587.4 ft	DEPTH TO WATER (FINAL) ▽	

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
		[Asphalt]	0.33						
	585	SAND (SP) fine to medium grained SAND; dry, tan, no staining, no odor		SP			60/68	0	
5								0	
			6.5				24/24	0	
	580	SAND (SP) fine to medium grained SAND; wet, tan, no staining, no odor		SP				0.1	
10		SILT (ML) some sand, wet, brown to pale brown, no staining, no odor	10				36/48	0.1	
	575							0.1	VAS-1 (12') [(11-13ft)]
15				ML			36/48	1.5	
	570							0.2	VAS-1 (17') [(16-18ft)]
		CLAY (CH) soft, moist, brown to reddish brown, no staining, no odor	18.75	CH			36/48	0.1	
20			20						
	565								
25									
	560								
30									
	555								

REMARKS:

Direct push geoprobe sample

LAB ANALYSIS:

BORING LOG SBLS.GPJ ERM DATA TEMPLATE.GDT 5/8/17

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P: 616-399-3500

PROJECT:
Thermo Fisher Scientific
Former Hamilton Industries Further Site Investigation

BORING # **VAS-2**
ERM PROJECT # 0383990
SHEET 1 OF 1

DRILLING CONTRACTOR	Geoserve, Inc Woodstock, IL	ERM REPRESENTATIVE	Brenna Bellmer
DRILLING FOREMAN	Eduardo D.	OFFICE LOCATION	Milwaukee, WI
DRILLING METHOD	Direct Push	DATE: START	04/25/2017
DRILLING EQUIPMENT	Geoprobe	FINISH	04/25/2017
HORIZONTAL DATUM (NAD 1983 StatePlane Wisconsin South (US Feet))		BOREHOLE DEPTH	30 ft
NORTHING	792445.516	BOREHOLE DIAMETER	2 in
EASTING	2607492.674	DEPTH TO WATER (INITIAL) ▼	04/25/2017
VERTICAL DATUM (WI Zone South NAD83) ELEVATION	596.3 ft	DEPTH TO WATER (FINAL) ▽	

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
	595	SAND (SP) fine grained SAND; some silt, some gravel, dry, brown, no staining, no odor		SP				0	
			2				72/72		
		SAND (SP) fine grained SAND; some silt, trace gravel, dry, brown, no staining, no odor		SP				0	
5	590	SAND (SP) fine grained SAND; some silt, dry, brown, no staining, no odor, [saw ~2" crushed white rock layer at 7.5' BGS]	5	SP			18/24	0	
		[Hit obstruction at 9' BGS, pushed through but No Recovery from 9-20' BGS]	9				18/48	0.1	
10	585								
							0/48		
15	580								VAS-2 (15') [(14-16ft)]
							0/48		
20	575	SILTY CLAY (CL-ML) moist to wet, brown, no staining, no odor, [saw 2" reddish-brown clay layer at 27.5' BFS; saw 5" reddish-brown clay later at 28' BGS]	20	CL-ML			42/48	0.1 0.1	
25	570						42/48	0.1 0.1	
30	565	CLAY (CH) soft, moist, reddish brown, no staining, no odor	29.75	CH			48/48	0.1 0.1	
			32						

REMARKS:

Direct push geoprobe sample

LAB ANALYSIS:

BORING LOG SBLS.GPJ ERM DATA TEMPLATE.GDT 5/8/17

3352 128th Avenue
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P: 616-399-3500

PROJECT:
Thermo Fisher Scientific
Former Hamilton Industries Further Site Investigation

BORING # **VAS-3**
ERM PROJECT # 0383990
SHEET 1 OF 1

DRILLING CONTRACTOR	Geoserve, Inc Woodstock, IL	ERM REPRESENTATIVE	Brenna Bellmer
DRILLING FOREMAN	Eduardo D.	OFFICE LOCATION	Milwaukee, WI
DRILLING METHOD	Direct Push	DATE: START	04/24/0207
DRILLING EQUIPMENT	Geoprobe	FINISH	04/24/2017

HORIZONTAL DATUM (NAD 1983 StatePlane Wisconsin South (US Feet))		BOREHOLE DEPTH	30 ft
NORTHING	792431.999	BOREHOLE DIAMETER	2 in
EASTING	2607356.735	DEPTH TO WATER (INITIAL) ▼	15.5 ft 04/24/2017
VERTICAL DATUM (WI Zone South NAD83) ELEVATION	599.3 ft	DEPTH TO WATER (FINAL) ▽	

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
		CLAYEY SAND (SC-SM) fine grained SAND; some silt, dry, brown to dark tan, no staining, no odor		SC-SM			70/72	0.1	
		SAND (SP) fine grained SAND; dry to moist, dark tan, no staining, no odor	3					0.7	
5	595						24/24	0.5	
10	590			SP			30/48	0.3	
								0.4	
15	585						30/48	0.3	
			15.5					0.2	VAS-3 (5') [(14-16ft)]
		SAND (SP) fine grained SAND; wet, dark tan, no staining, no odor	16	SP					
		SILTY SAND (SM) fine grained SAND; wet, brown, no staining, no odor	17	SM			36/48	12.8	
		CLAY (CH) soft, moist, brown, no staining, no odor	18.5	CH				10.6	
20	580	SILTY CLAY (CL-ML) wet, brown to grayish brown, no staining, no odor		CL-ML			36/48	0.2	
		CLAY (CH) some silt, wet, brown to grayish brown, no staining, no odor	22.5	CH				0.1	
25	575	SILTY CLAY (CL-ML) wet, brown to grayish brown, no staining, no odor	24.25				36/48	0	
				CL-ML				0	
30	570						48/48	0	
		CLAY (CH) little silt, wet, brown to grayish brown, no staining, no odor	31	CH				0	
			32						
	565								

REMARKS:

Direct push geoprobe sample

LAB ANALYSIS:

BORING LOG SBLS.GPJ ERM DATA TEMPLATE.GDT 5/8/17

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PROJECT:
Thermo Fisher Scientific
Former Hamilton Industries Further Site Investigation

BORING # **VAS-4**

ERM PROJECT # 0383990

SHEET 1 OF 1

DRILLING CONTRACTOR	Geoserve, Inc Woodstock, IL	ERM REPRESENTATIVE	Brenna Bellmer
DRILLING FOREMAN	Eduardo D.	OFFICE LOCATION	Milwaukee, WI
DRILLING METHOD	Direct Push	DATE: START	04/25/2017
DRILLING EQUIPMENT	Geoprobe	FINISH	04/25/2017

HORIZONTAL DATUM (NAD 1983 StatePlane Wisconsin South (US Feet))		BOREHOLE DEPTH	30 ft
NORTHING	792428.745	BOREHOLE DIAMETER	2 in
EASTING	2607232.613	DEPTH TO WATER (INITIAL) ▼	15 ft 04/25/2017
VERTICAL DATUM (WI Zone South NAD83) ELEVATION	601.8 ft	DEPTH TO WATER (FINAL) ▽	

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
0	601.8	SAND (SP) fine grained SAND; little silt, dry, brown to dark tan, no staining, no odor		SP			48/48	0 0	
5	595						18/48	0 0	
10	590						24/48	0 0	
15	585						24/48	0.1 0.2	VAS-4 (15') [(14-16ft)]
		SAND (SP) fine grained SAND; little silt, moist, dark tan, no staining, no odor	15	SP					
		CLAY (CH) soft, moist, brown, no staining, no odor	16	CH			45/48	0 0	
20	580	SANDY CLAY (CL-ML) moist, brown, no staining, no odor	19	CL-ML			36/48	0 0	
25	575	CLAY (CH) soft, moist, brown to reddish brown, no staining, no odor	24	CH			48/48	0 0	
30	570		32				36/48	0 0	

REMARKS:

Direct push geoprobe sample

LAB ANALYSIS:

BORING LOG SBLS.GPJ ERM DATA TEMPLATE.GDT 5/8/17

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PROJECT:
Thermo Fisher Scientific
Former Hamilton Industries Further Site Investigation

BORING # **VAS-5**
ERM PROJECT # 0383990
SHEET 1 OF 1

DRILLING CONTRACTOR	Geoserve, Inc Woodstock, IL	ERM REPRESENTATIVE	Brenna Bellmer
DRILLING FOREMAN	Eduardo D.	OFFICE LOCATION	Milwaukee, WI
DRILLING METHOD	Direct Push	DATE: START	04/24/0207
DRILLING EQUIPMENT	Geoprobe	FINISH	04/24/2017
HORIZONTAL DATUM (NAD 1983 StatePlane Wisconsin South (US Feet))		BOREHOLE DEPTH	30 ft
NORTHING	792374.081	BOREHOLE DIAMETER	2 in
EASTING	2607040.446	DEPTH TO WATER (INITIAL) ▼	14 ft 04/24/2017
VERTICAL DATUM (WI Zone South NAD83) ELEVATION	603.9 ft	DEPTH TO WATER (FINAL) ▽	

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
		[Ashpalt]	0.33	SP			70/72	0.1	
		SAND (SP) fine to medium grained SAND; little gravel, trace silt, dry, dark brown, no staining, no odor	2	SP					
5	600	SAND (SP) fine to medium grained SAND; trace silt, dry, dark brown, no staining, no odor	4					0	
		SAND (SP) fine to medium grained SAND; dry, dark tan, no staining, no odor		SP			24/24	0.1	
10	595	SAND (SP) fine to medium grained SAND; dry, dark tan to dark orangish brown, iron oxide staining, no odor	9 9.25	SP CH			48/48	0 0	
		CLAY (CH) soft, dry to moist, brown, no staining, no odor	11.5						
		SILTY CLAY (CL-ML) moist, brown, no staining, no odor		CL-ML			30/48	0.2	
15	590	SILTY CLAY (CL-ML) wet, brown, no staining, no odor	14	CL-ML				0.1	
		SAND (SP) fine grained SAND; some silt, little clay, wet, brown, no staining, no odor	16				36/48	0	VAS-5 (17') [(16-18ft)]
20	585			SP				0.1	
							36/48	0.2	VAS-5 (22') [(21-23ft)]
								0.2	
25	580	SAND (SP) fine grained SAND; some silt, wet, brown, no staining, no odor	24	SP			36/48	0.1	
		SILT (ML) little sand, little clay, wet, brown to grayish brown, no staining, no odor	26					0.1	VAS-5 (27') [(26-28ft)]
	575			ML				0.1	
30		CLAY (CH) soft, moist, brown to reddish brown, no staining, no odor	30	CH			48/48	0.1	
	570		32						

REMARKS:

Direct push geoprobe sample

LAB ANALYSIS:

BORING LOG SBLS.GPJ ERM DATA TEMPLATE.GDT 5/8/17

3352 128th Avenue
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PROJECT:
Thermo Fisher Scientific
Former Hamilton Industries Further Site Investigation

BORING # **VAS-6**
ERM PROJECT # 0383990
SHEET 1 OF 1

DRILLING CONTRACTOR	Geoserve, Inc Woodstock, IL	ERM REPRESENTATIVE	Brenna Bellmer
DRILLING FOREMAN	Eduardo D.	OFFICE LOCATION	Milwaukee, WI
DRILLING METHOD	Direct Push	DATE: START	04/24/0207
DRILLING EQUIPMENT	Geoprobe	FINISH	04/24/2017

HORIZONTAL DATUM (NAD 1983 StatePlane Wisconsin South (US Feet))		BOREHOLE DEPTH	30 ft
NORTHING	792323.777	BOREHOLE DIAMETER	2 in
EASTING	2607033.624	DEPTH TO WATER (INITIAL) ▼	12 ft 04/24/2017
VERTICAL DATUM (WI Zone South NAD83) ELEVATION	604.0 ft	DEPTH TO WATER (FINAL) ▽	

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
		[Asphalt]	0.33						
		SAND (SP) fine grained SAND; trace silt, some gravel, dry, brown, no staining, no odor	2	SP				0	
		SAND (SP) fine grained SAND; trace silt, dry, brown, no staining, no odor		SP			70/72	0	
5	600		6						
		SAND (SP) fine grained SAND; dry to moist, dark tan, no staining, no odor		SP			24/24	0	
		CLAY (CH) soft, moist, orangish brown, no staining, no odor	8.5	CH			48/48	0.2	
10	595							0	
		CLAY (CH) soft, wet, grayish brown, no staining, no odor	12	CH			36/48	0.1	
	590	SILTY CLAY (CL-ML) wet, brown, no staining, no odor	14	CL-ML				0	
15		CLAYEY SILT (CL-ML) wet, brown to dark tan, no staining, no odor	16	CL-ML			36/48	0	
		SAND (SP) fine grained SAND; some silt, wet, brown to dark tan, no staining, no odor	18					0	
	585							0	
20				SP			36/48	0	
								0	
	580							0	
25							36/48	0	
		SILT (ML) some sand, wet, grayish brown, no staining, no odor	27					0	VAS-6 (27') [(26-28ft)]
	575			ML			48/48	0	
30								0	
			32						
	570								

REMARKS:

Direct push geoprobe sample

LAB ANALYSIS:

BORING LOG SBLS.GPJ ERM DATA TEMPLATE.GDT 5/8/17

3352 128th Avenue
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PROJECT:
Thermo Fisher Scientific
Former Hamilton Industries Further Site Investigation

BORING # **VAS-7**

ERM PROJECT # 0383990

SHEET 1 OF 1

DRILLING CONTRACTOR	Geoserve, Inc Woodstock, IL	ERM REPRESENTATIVE	Brenna Bellmer
DRILLING FOREMAN	Eduardo D.	OFFICE LOCATION	Milwaukee, WI
DRILLING METHOD	Direct Push	DATE: START	04/25/2017
DRILLING EQUIPMENT	Geoprobe	FINISH	04/25/2017

HORIZONTAL DATUM (NAD 1983 StatePlane Wisconsin South (US Feet))		BOREHOLE DEPTH	30 ft
NORTHING	792238.865	BOREHOLE DIAMETER	2 in
EASTING	2607227.998	DEPTH TO WATER (INITIAL) ▼	15 ft 04/25/2017
VERTICAL DATUM (WI Zone South NAD83) ELEVATION	602.0 ft	DEPTH TO WATER (FINAL) ▽	

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
		SILTY CLAY (CL-ML) little sand, trace gravel, dry, brown, no staining, no odor							
	600						70/72	0	
5				CL-ML				0	
	595		7.5				24/24	0	
		SAND (SP) fine grained SAND; dry to wet, dark tan, no staining, no odor, [wts at 15' BGS]							
10							12/48	0.1	
	590			SP				0.2	
							24/48		
15								0.2	VAS-7 (15') [(14-16ft)]
	585	SANDY SILT (MLS) wet, brown, no staining, no odor	16	MLS			30/48	0	
		SILT (ML) trace sand, wet, brown, no staining, no odor	19					0	
20				ML				0.2	
	580						45/48		VAS-7 (22') [(21-23ft)]
		CLAY (CH) soft, moist, brown to reddish brown, no staining, no odor	23					0.2	
25				CH				0.1	
	575		27				48/48	0.1	
		SILTY CLAY (CL-ML) moist, brown to grayish brown, no staining, no odor							
30				CL-ML			36/48	0	
	570		32					0	

REMARKS:

Direct push geoprobe sample

LAB ANALYSIS:

BORING LOG SBLS.GPJ ERM DATA TEMPLATE.GDT 5/8/17

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P: 616-399-3500

PROJECT:
Thermo Fisher Scientific
Former Hamilton Industries Further Site Investigation

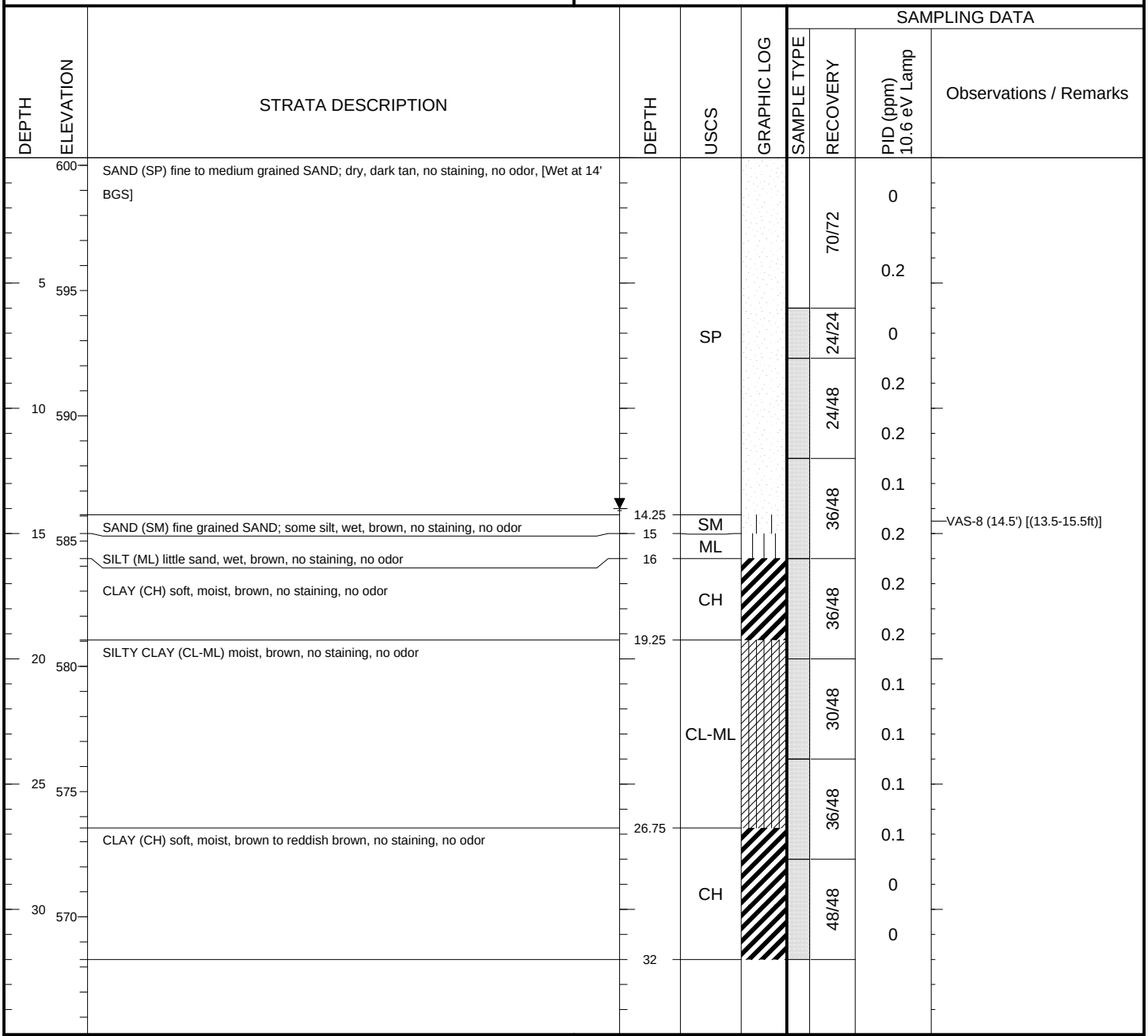
BORING # **VAS-8**

ERM PROJECT # 0383990

SHEET 1 OF 1

DRILLING CONTRACTOR	Geoserve, Inc Woodstock, IL	ERM REPRESENTATIVE	Brenna Bellmer
DRILLING FOREMAN	Eduardo D.	OFFICE LOCATION	Milwaukee, WI
DRILLING METHOD	Direct Push	DATE: START	04/24/0207
DRILLING EQUIPMENT	Geoprobe	FINISH	04/24/2017

HORIZONTAL DATUM (NAD 1983 StatePlane Wisconsin South (US Feet))		BOREHOLE DEPTH	30 ft
NORTHING	792247.348	BOREHOLE DIAMETER	2 in
EASTING	2607362.01	DEPTH TO WATER (INITIAL) ▼	14 ft 04/24/2017
VERTICAL DATUM (WI Zone South NAD83) ELEVATION	600.3 ft	DEPTH TO WATER (FINAL) ▽	



REMARKS:

Direct push geoprobe sample

LAB ANALYSIS:

BORING LOG SBLS.GPJ ERM DATA TEMPLATE.GDT 5/8/17

3352 128th Avenue
Holland, MI 49424
P: 616-399-3500

PROJECT:
Thermo Fisher Scientific
Former Hamilton Industries Further Site Investigation

BORING # **VAS-9**
ERM PROJECT # 0383990
SHEET 1 OF 1

DRILLING CONTRACTOR	Geoserve, Inc Woodstock, IL	ERM REPRESENTATIVE	Brenna Bellmer
DRILLING FOREMAN	Eduardo D.	OFFICE LOCATION	Milwaukee, WI
DRILLING METHOD	Direct Push	DATE: START	04/25/2017
DRILLING EQUIPMENT	Geoprobe	FINISH	04/25/2017

HORIZONTAL DATUM (NAD 1983 StatePlane Wisconsin South (US Feet))		BOREHOLE DEPTH	30 ft
NORTHING	792249.878	BOREHOLE DIAMETER	2 in
EASTING	2607500.955	DEPTH TO WATER (INITIAL) ▼	04/25/2017
VERTICAL DATUM (WI Zone South NAD83) ELEVATION	596.9 ft	DEPTH TO WATER (FINAL) ▽	

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
		SAND (SP) fine grained SAND; little silt, dry, dark brown, no staining, no odor	1	SP				0	
	595	SAND (SP) fine grained SAND; little silt, dry, brown to dark tan, no staining, no odor		SP			70/72	0	
5								0	
	590		7					0	
		CLAYEY SAND (SC) moist, brown, no staining, no odor	7.5	SC			21/24		
		SAND (SP) fine grained SAND; little silt, moist, dark tan, no staining, no odor	9	SP				0	
10		CLAY (CH) soft, dry to moist, dark tan, no staining, no odor		CH			36/48	0	
		SILTY CLAY (CL-ML) moist, brown to grayish brown, no staining, no odor	11					0	
	585			CL-ML			34/48	0.1	
15								0.1	
	580	CLAY (CH) soft, moist, brown to reddish brown	17				34/48	0.1	
								0.1	
20							48/48	0	
	575							0	
25				CH			48/48	0	
	570							0	
							36/48	0	
30								0	
	565		32						

REMARKS:

Direct push geoprobe sample

LAB ANALYSIS:

BORING LOG SBLS.GPJ ERM DATA TEMPLATE.GDT 5/8/17

3352 128th Avenue
Holland, MI 49424
P: 616-399-3500

PROJECT:
Thermo Fisher Scientific
Former Hamilton Industries Further Site Investigation

BORING # **VAS-10**

ERM PROJECT # 0383990

SHEET 1 OF 1

DRILLING CONTRACTOR	Geoserve, Inc Woodstock, IL	ERM REPRESENTATIVE	Brenna Bellmer
DRILLING FOREMAN	Eduardo D.	OFFICE LOCATION	Milwaukee, WI
DRILLING METHOD	Direct Push	DATE: START	04/24/0207
DRILLING EQUIPMENT	Geoprobe	FINISH	04/24/2017

HORIZONTAL DATUM (NAD 1983 StatePlane Wisconsin South (US Feet))		BOREHOLE DEPTH	20 ft
NORTHING	792241.654	BOREHOLE DIAMETER	2 in
EASTING	2607661.017	DEPTH TO WATER (INITIAL) ▼	6 ft 04/24/2017
VERTICAL DATUM (WI Zone South NAD83) ELEVATION	587.5 ft	DEPTH TO WATER (FINAL) ▽	

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
		[Asphalt]	0.33						
	585	SAND (SP) fine to medium grained SAND; dry, tan, no staining, no odor		SP			70/72	0	
5								0	
		SAND (SP) fine to medium grained SAND; wet, tan, no staining, no odor	6	SP			24/24	0.1	VAS-10 (7') [(6-8ft)]
	580								
		SILT (ML) little sand, wet, brown to grayish brown, no staining, no odor	9	ML			36/48	0.1	
10								0	
		CLAY (CH) soft, moist, brown to grayish brown, no staining, no odor	11.8	CH			36/48	0.2	
	575								
		CLAYEY SILT (CL-ML) wet, brown to grayish brown, no staining, no odor	14	CL-ML				0	
15									
	570							0.2	
		SILTY CLAY (CL-ML) moist, brown to grayish brown, no staining, no odor	18.5	CL-ML			36/48	0.1	
20			20						
	565								
25									
	560								
30									
	555								

REMARKS:

Direct push geoprobe sample

LAB ANALYSIS:

BORING LOG SBLS.GPJ ERM DATA TEMPLATE.GDT 5/8/17

3352 128th Avenue
Holland, MI 49424
P: 616-399-3500

PROJECT:
Thermo Fisher Scientific
Former Hamilton Industries Further Site Investigation

BORING # **VAS-11**

ERM PROJECT # 0383990

SHEET 1 OF 1

DRILLING CONTRACTOR	Geoserve, Inc Woodstock, IL	ERM REPRESENTATIVE	Brenna Bellmer
DRILLING FOREMAN	Eduardo D.	OFFICE LOCATION	Milwaukee, WI
DRILLING METHOD	Direct Push	DATE: START	04/24/0207
DRILLING EQUIPMENT	Geoprobe	FINISH	04/24/2017

HORIZONTAL DATUM (NAD 1983 StatePlane Wisconsin South (US Feet))		BOREHOLE DEPTH	30 ft
NORTHING	792070.284	BOREHOLE DIAMETER	2 in
EASTING	2607505.193	DEPTH TO WATER (INITIAL) ▼	12 ft 04/24/2017
VERTICAL DATUM (WI Zone South NAD83) ELEVATION	597.1 ft	DEPTH TO WATER (FINAL) ▽	

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
0	597.1	SAND (SP) fine to medium grained SAND; trace silt, trace gravel, dry to moist, brown to dark tan, no staining					60/60	0	
	595							0.5	
		[see some black angular gravel pieces]							
5				SP			24/36	0	
	590							0	
							24/48	0	
10								0	
	585	Wet, [see very coarse sand from 12-13', with black gravel]							VAS-11 (12') [(11-13ft)]
		SILT (ML) some sand, wet, brown, no staining, no odor	13.5	ML			42/48	0.1	
		CLAY (CH) soft, moist to wet, brown, no staining, no odor	14	CH				0.1	
15		SILTY CLAY (CL-ML) moist to wet, brown to grayish brown, no staining, no odor	15.5	CL-ML				0.1	
	580						36/48	0.1	
		CLAY (CH) soft, trace silt, wet, brown to grayish brown, no staining, no odor	19.5					0	
20				CH			42/48	0	
	575							0	
								0	
25							36/48	0	
		CLAY (CH) soft, moist, brown to reddish brown, no staining, no odor	26	CH				0	
	570	SILTY CLAY (CL-ML) wet, brown to grayish brown, no staining, no odor	27	CL-ML				0	
							48/48	0	
30								0	
		CLAY (CH) soft, moist, brown to grayish brown, no staining, no odor	30.5	CH					
			31.25	CL-ML					
	565	SILTY CLAY (CL-ML) moist, brown to grayish brown, no staining, no odor	32						

REMARKS:

Direct push geoprobe sample

LAB ANALYSIS:

BORING LOG SBLS.GPJ ERM DATA TEMPLATE.GDT 5/8/17

3352 128th Avenue
Holland, MI 49424
P: 616-399-3500

PROJECT:
Thermo Fisher Scientific
Former Hamilton Industries Further Site Investigation

BORING # **VAS-12**

ERM PROJECT # 0383990

SHEET 1 OF 1

DRILLING CONTRACTOR	Geoserve, Inc Woodstock, IL	ERM REPRESENTATIVE	Brenna Bellmer
DRILLING FOREMAN	Eduardo D.	OFFICE LOCATION	Milwaukee, WI
DRILLING METHOD	Direct Push	DATE: START	04/25/2017
DRILLING EQUIPMENT	Geoprobe	FINISH	04/25/2017
HORIZONTAL DATUM (NAD 1983 StatePlane Wisconsin South (US Feet))		BOREHOLE DEPTH	30 ft
NORTHING	792065.447	BOREHOLE DIAMETER	2 in
EASTING	2607363.204	DEPTH TO WATER (INITIAL) ▼	15 ft 04/25/2017
VERTICAL DATUM (WI Zone South NAD83) ELEVATION	600.4 ft	DEPTH TO WATER (FINAL) ▽	

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
0	600	SAND (SP) fine grained SAND; dry, brown to dark tan, no staining, no odor					70/72	0	
								0	
5	595			SP			12/24	0	
		[see crushed white rock at 8.5' BGS]					21/48	0	
10	590							0	
							27/48	0.1	
15	585	Wet	15.25					0.1	VAS-12 (15') [(14-16ft)]
		SILTY CLAY (CL-ML) moist to wet, brown to grayish brown, no staining, no odor		CL-ML			36/48	0.1	
20	580	CLAY (CH) soft, moist, brown to reddish brown, no staining, no odor	20					0.1	VAS-12 (20') [(19-21ft)]
				CH			36/48	0	
25	575							0	
		SILTY CLAY (CL-ML) moist, brown to grayish brown, no staining, no odor	26				36/48	0	
				CL-ML				0	
30	570						36/48	0	
			32					0	

REMARKS:

Direct push geoprobe sample

LAB ANALYSIS:

BORING LOG SBLS.GPJ ERM DATA TEMPLATE.GDT 5/8/17

Appendix D

Lab Analytical Report

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

May 09, 2017

David deCourcy-Bower
ERM, Inc.
700 West Virginia Street
Milwaukee, WI 53204

RE: Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Dear David deCourcy-Bower:
Enclosed are the analytical results for sample(s) received by the laboratory on April 29, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Brenna Bellmer, ERM, INC.

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40149151001	**VAS-4 (15')**	Water	04/26/17 09:50	04/29/17 08:15
40149151002	**VAS-3 (15')**	Water	04/26/17 11:00	04/29/17 08:15
40149151003	**VAS-2 (15')**	Water	04/26/17 13:15	04/29/17 08:15
40149151004	**VAS-7 (22')**	Water	04/26/17 14:00	04/29/17 08:15
40149151005	**VAS-7 (15')**	Water	04/26/17 14:15	04/29/17 08:15
40149151006	**VAS-8 (14.5')**	Water	04/26/17 15:00	04/29/17 08:15
40149151007	**VAS-11 (12')**	Water	04/27/17 09:30	04/29/17 08:15
40149151008	**VAS-12 (20')**	Water	04/27/17 10:30	04/29/17 08:15
40149151009	**VAS-12 (15')**	Water	04/27/17 11:00	04/29/17 08:15
40149151010	**VAS-6 (27')**	Water	04/27/17 11:30	04/29/17 08:15
40149151011	**VAS-5 (27')**	Water	04/27/17 12:30	04/29/17 08:15
40149151012	**VAS-5 (22')**	Water	04/27/17 12:40	04/29/17 08:15
40149151013	**VAS-5 (17')**	Water	04/27/17 13:00	04/29/17 08:15
40149151014	**VAS-1 (17')**	Water	04/27/17 14:30	04/29/17 08:15
40149151015	**VAS-1 (12')**	Water	04/27/17 14:50	04/29/17 08:15
40149151016	**VAS-1 (7')**	Water	04/27/17 15:15	04/29/17 08:15
40149151017	**VAS-10 (7')**	Water	04/28/17 09:30	04/29/17 08:15
40149151018	**TRIP BLANK**	Water	04/28/17 00:00	04/29/17 08:15

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40149151001	**VAS-4 (15')**	EPA 8260	LAP	13	PASI-G
40149151002	**VAS-3 (15')**	EPA 8260	LAP	13	PASI-G
40149151003	**VAS-2 (15')**	EPA 8260	LAP	13	PASI-G
40149151004	**VAS-7 (22')**	EPA 8260	LAP	13	PASI-G
40149151005	**VAS-7 (15')**	EPA 8260	LAP	13	PASI-G
40149151006	**VAS-8 (14.5')**	EPA 8260	LAP	13	PASI-G
40149151007	**VAS-11 (12')**	EPA 8260	LAP	13	PASI-G
40149151008	**VAS-12 (20')**	EPA 8260	LAP	13	PASI-G
40149151009	**VAS-12 (15')**	EPA 8260	LAP	13	PASI-G
40149151010	**VAS-6 (27')**	EPA 8260	LAP	13	PASI-G
40149151011	**VAS-5 (27')**	EPA 8260	LAP	13	PASI-G
40149151012	**VAS-5 (22')**	EPA 8260	LAP	13	PASI-G
40149151013	**VAS-5 (17')**	EPA 8260	LAP	13	PASI-G
40149151014	**VAS-1 (17')**	EPA 8260	LAP	13	PASI-G
40149151015	**VAS-1 (12')**	EPA 8260	LAP	13	PASI-G
40149151016	**VAS-1 (7')**	EPA 8260	LAP	13	PASI-G
40149151017	**VAS-10 (7')**	EPA 6010	DLB	7	PASI-G
		EPA 7470	AJT	1	PASI-G
		EPA 8260	LAP	13	PASI-G
40149151018	**TRIP BLANK**	EPA 8260	LAP	13	PASI-G

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Sample: VAS-4 (15') **Lab ID: 40149151001** Collected: 04/26/17 09:50 Received: 04/29/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		05/03/17 10:45	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		05/03/17 10:45	79-00-5	
1,1-Dichloroethane	**<0.24**	ug/L	1.0	0.24	1		05/03/17 10:45	75-34-3	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		05/03/17 10:45	75-35-4	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		05/03/17 10:45	107-06-2	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		05/03/17 10:45	127-18-4	
Trichloroethene	**<0.33**	ug/L	1.0	0.33	1		05/03/17 10:45	79-01-6	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		05/03/17 10:45	75-01-4	
cis-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/03/17 10:45	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/03/17 10:45	156-60-5	
Surrogates									
4-Bromofluorobenzene (S)	83	%	70-130		1		05/03/17 10:45	460-00-4	
Dibromofluoromethane (S)	101	%	70-130		1		05/03/17 10:45	1868-53-7	
Toluene-d8 (S)	101	%	70-130		1		05/03/17 10:45	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Sample: VAS-3 (15') **Lab ID: 40149151002** Collected: 04/26/17 11:00 Received: 04/29/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,1-Trichloroethane	**5.8**	ug/L	5.0	2.5	5		05/03/17 17:23	71-55-6	
1,1,2-Trichloroethane	**<0.99**	ug/L	5.0	0.99	5		05/03/17 17:23	79-00-5	
1,1-Dichloroethane	**3.8J**	ug/L	5.0	1.2	5		05/03/17 17:23	75-34-3	
1,1-Dichloroethene	**<2.1**	ug/L	5.0	2.1	5		05/03/17 17:23	75-35-4	
1,2-Dichloroethane	**<0.84**	ug/L	5.0	0.84	5		05/03/17 17:23	107-06-2	
Tetrachloroethene	**<2.5**	ug/L	5.0	2.5	5		05/03/17 17:23	127-18-4	
Trichloroethene	**503**	ug/L	5.0	1.7	5		05/03/17 17:23	79-01-6	
Vinyl chloride	**<0.88**	ug/L	5.0	0.88	5		05/03/17 17:23	75-01-4	
cis-1,2-Dichloroethene	**<1.3**	ug/L	5.0	1.3	5		05/03/17 17:23	156-59-2	
trans-1,2-Dichloroethene	**<1.3**	ug/L	5.0	1.3	5		05/03/17 17:23	156-60-5	
Surrogates									
4-Bromofluorobenzene (S)	87	%	70-130		5		05/03/17 17:23	460-00-4	
Dibromofluoromethane (S)	101	%	70-130		5		05/03/17 17:23	1868-53-7	
Toluene-d8 (S)	103	%	70-130		5		05/03/17 17:23	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Sample: VAS-2 (15') **Lab ID: 40149151003** Collected: 04/26/17 13:15 Received: 04/29/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,1-Trichloroethane	**5.3**	ug/L	5.0	2.5	5		05/03/17 17:45	71-55-6	
1,1,2-Trichloroethane	**<0.99**	ug/L	5.0	0.99	5		05/03/17 17:45	79-00-5	
1,1-Dichloroethane	**2.9J**	ug/L	5.0	1.2	5		05/03/17 17:45	75-34-3	
1,1-Dichloroethene	**<2.1**	ug/L	5.0	2.1	5		05/03/17 17:45	75-35-4	
1,2-Dichloroethane	**<0.84**	ug/L	5.0	0.84	5		05/03/17 17:45	107-06-2	
Tetrachloroethene	**<2.5**	ug/L	5.0	2.5	5		05/03/17 17:45	127-18-4	
Trichloroethene	**610**	ug/L	5.0	1.7	5		05/03/17 17:45	79-01-6	
Vinyl chloride	**<0.88**	ug/L	5.0	0.88	5		05/03/17 17:45	75-01-4	
cis-1,2-Dichloroethene	**<1.3**	ug/L	5.0	1.3	5		05/03/17 17:45	156-59-2	
trans-1,2-Dichloroethene	**<1.3**	ug/L	5.0	1.3	5		05/03/17 17:45	156-60-5	
Surrogates									
4-Bromofluorobenzene (S)	84	%	70-130		5		05/03/17 17:45	460-00-4	
Dibromofluoromethane (S)	101	%	70-130		5		05/03/17 17:45	1868-53-7	
Toluene-d8 (S)	102	%	70-130		5		05/03/17 17:45	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Sample: VAS-7 (22') **Lab ID: 40149151004** Collected: 04/26/17 14:00 Received: 04/29/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		05/04/17 07:52	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		05/04/17 07:52	79-00-5	
1,1-Dichloroethane	**<0.24**	ug/L	1.0	0.24	1		05/04/17 07:52	75-34-3	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		05/04/17 07:52	75-35-4	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		05/04/17 07:52	107-06-2	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		05/04/17 07:52	127-18-4	
Trichloroethene	**0.44J**	ug/L	1.0	0.33	1		05/04/17 07:52	79-01-6	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		05/04/17 07:52	75-01-4	
cis-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/04/17 07:52	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/04/17 07:52	156-60-5	
Surrogates									
4-Bromofluorobenzene (S)	89	%	70-130		1		05/04/17 07:52	460-00-4	HS,pH
Dibromofluoromethane (S)	103	%	70-130		1		05/04/17 07:52	1868-53-7	
Toluene-d8 (S)	101	%	70-130		1		05/04/17 07:52	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Sample: VAS-7 (15') **Lab ID: 40149151005** Collected: 04/26/17 14:15 Received: 04/29/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		05/04/17 08:36	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		05/04/17 08:36	79-00-5	
1,1-Dichloroethane	**<0.24**	ug/L	1.0	0.24	1		05/04/17 08:36	75-34-3	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		05/04/17 08:36	75-35-4	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		05/04/17 08:36	107-06-2	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		05/04/17 08:36	127-18-4	
Trichloroethene	**0.38J**	ug/L	1.0	0.33	1		05/04/17 08:36	79-01-6	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		05/04/17 08:36	75-01-4	
cis-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/04/17 08:36	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/04/17 08:36	156-60-5	
Surrogates									
4-Bromofluorobenzene (S)	88	%	70-130		1		05/04/17 08:36	460-00-4	
Dibromofluoromethane (S)	100	%	70-130		1		05/04/17 08:36	1868-53-7	
Toluene-d8 (S)	101	%	70-130		1		05/04/17 08:36	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Sample: VAS-8 (14.5') **Lab ID: 40149151006** Collected: 04/26/17 15:00 Received: 04/29/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		05/04/17 08:58	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		05/04/17 08:58	79-00-5	
1,1-Dichloroethane	**<0.24**	ug/L	1.0	0.24	1		05/04/17 08:58	75-34-3	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		05/04/17 08:58	75-35-4	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		05/04/17 08:58	107-06-2	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		05/04/17 08:58	127-18-4	
Trichloroethene	**2.6**	ug/L	1.0	0.33	1		05/04/17 08:58	79-01-6	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		05/04/17 08:58	75-01-4	
cis-1,2-Dichloroethene	**1.1**	ug/L	1.0	0.26	1		05/04/17 08:58	156-59-2	
trans-1,2-Dichloroethene	**0.47J**	ug/L	1.0	0.26	1		05/04/17 08:58	156-60-5	
Surrogates									
4-Bromofluorobenzene (S)	85	%	70-130		1		05/04/17 08:58	460-00-4	
Dibromofluoromethane (S)	100	%	70-130		1		05/04/17 08:58	1868-53-7	
Toluene-d8 (S)	96	%	70-130		1		05/04/17 08:58	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Sample: VAS-11 (12') **Lab ID: 40149151007** Collected: 04/27/17 09:30 Received: 04/29/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		05/04/17 08:14	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		05/04/17 08:14	79-00-5	
1,1-Dichloroethane	**<0.24**	ug/L	1.0	0.24	1		05/04/17 08:14	75-34-3	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		05/04/17 08:14	75-35-4	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		05/04/17 08:14	107-06-2	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		05/04/17 08:14	127-18-4	
Trichloroethene	**<0.33**	ug/L	1.0	0.33	1		05/04/17 08:14	79-01-6	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		05/04/17 08:14	75-01-4	
cis-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/04/17 08:14	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/04/17 08:14	156-60-5	
Surrogates									
4-Bromofluorobenzene (S)	85	%	70-130		1		05/04/17 08:14	460-00-4	HS,pH
Dibromofluoromethane (S)	100	%	70-130		1		05/04/17 08:14	1868-53-7	
Toluene-d8 (S)	99	%	70-130		1		05/04/17 08:14	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Sample: VAS-12 (20') **Lab ID: 40149151008** Collected: 04/27/17 10:30 Received: 04/29/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		05/03/17 13:20	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		05/03/17 13:20	79-00-5	
1,1-Dichloroethane	**<0.24**	ug/L	1.0	0.24	1		05/03/17 13:20	75-34-3	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		05/03/17 13:20	75-35-4	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		05/03/17 13:20	107-06-2	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		05/03/17 13:20	127-18-4	
Trichloroethene	**1.6**	ug/L	1.0	0.33	1		05/03/17 13:20	79-01-6	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		05/03/17 13:20	75-01-4	
cis-1,2-Dichloroethene	**9.6**	ug/L	1.0	0.26	1		05/03/17 13:20	156-59-2	
trans-1,2-Dichloroethene	**9.7**	ug/L	1.0	0.26	1		05/03/17 13:20	156-60-5	
Surrogates									
4-Bromofluorobenzene (S)	89	%	70-130		1		05/03/17 13:20	460-00-4	HS,pH
Dibromofluoromethane (S)	102	%	70-130		1		05/03/17 13:20	1868-53-7	
Toluene-d8 (S)	101	%	70-130		1		05/03/17 13:20	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Sample: VAS-12 (15') **Lab ID: 40149151009** Collected: 04/27/17 11:00 Received: 04/29/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		05/03/17 13:42	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		05/03/17 13:42	79-00-5	
1,1-Dichloroethane	**<0.24**	ug/L	1.0	0.24	1		05/03/17 13:42	75-34-3	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		05/03/17 13:42	75-35-4	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		05/03/17 13:42	107-06-2	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		05/03/17 13:42	127-18-4	
Trichloroethene	**2.9**	ug/L	1.0	0.33	1		05/03/17 13:42	79-01-6	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		05/03/17 13:42	75-01-4	
cis-1,2-Dichloroethene	**0.65J**	ug/L	1.0	0.26	1		05/03/17 13:42	156-59-2	
trans-1,2-Dichloroethene	**0.78J**	ug/L	1.0	0.26	1		05/03/17 13:42	156-60-5	
Surrogates									
4-Bromofluorobenzene (S)	83	%	70-130		1		05/03/17 13:42	460-00-4	pH
Dibromofluoromethane (S)	104	%	70-130		1		05/03/17 13:42	1868-53-7	
Toluene-d8 (S)	100	%	70-130		1		05/03/17 13:42	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Sample: VAS-6 (27') **Lab ID: 40149151010** Collected: 04/27/17 11:30 Received: 04/29/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		05/03/17 14:04	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		05/03/17 14:04	79-00-5	
1,1-Dichloroethane	**<0.24**	ug/L	1.0	0.24	1		05/03/17 14:04	75-34-3	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		05/03/17 14:04	75-35-4	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		05/03/17 14:04	107-06-2	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		05/03/17 14:04	127-18-4	
Trichloroethene	**<0.33**	ug/L	1.0	0.33	1		05/03/17 14:04	79-01-6	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		05/03/17 14:04	75-01-4	
cis-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/03/17 14:04	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/03/17 14:04	156-60-5	
Surrogates									
4-Bromofluorobenzene (S)	87	%	70-130		1		05/03/17 14:04	460-00-4	pH
Dibromofluoromethane (S)	103	%	70-130		1		05/03/17 14:04	1868-53-7	
Toluene-d8 (S)	101	%	70-130		1		05/03/17 14:04	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Sample: VAS-5 (27') **Lab ID: 40149151011** Collected: 04/27/17 12:30 Received: 04/29/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		05/03/17 14:26	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		05/03/17 14:26	79-00-5	
1,1-Dichloroethane	**<0.24**	ug/L	1.0	0.24	1		05/03/17 14:26	75-34-3	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		05/03/17 14:26	75-35-4	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		05/03/17 14:26	107-06-2	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		05/03/17 14:26	127-18-4	
Trichloroethene	**<0.33**	ug/L	1.0	0.33	1		05/03/17 14:26	79-01-6	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		05/03/17 14:26	75-01-4	
cis-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/03/17 14:26	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/03/17 14:26	156-60-5	
Surrogates									
4-Bromofluorobenzene (S)	85	%	70-130		1		05/03/17 14:26	460-00-4	pH
Dibromofluoromethane (S)	101	%	70-130		1		05/03/17 14:26	1868-53-7	
Toluene-d8 (S)	99	%	70-130		1		05/03/17 14:26	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Sample: VAS-5 (22') **Lab ID: 40149151012** Collected: 04/27/17 12:40 Received: 04/29/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		05/03/17 14:48	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		05/03/17 14:48	79-00-5	
1,1-Dichloroethane	**<0.24**	ug/L	1.0	0.24	1		05/03/17 14:48	75-34-3	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		05/03/17 14:48	75-35-4	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		05/03/17 14:48	107-06-2	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		05/03/17 14:48	127-18-4	
Trichloroethene	**<0.33**	ug/L	1.0	0.33	1		05/03/17 14:48	79-01-6	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		05/03/17 14:48	75-01-4	
cis-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/03/17 14:48	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/03/17 14:48	156-60-5	
Surrogates									
4-Bromofluorobenzene (S)	84	%	70-130		1		05/03/17 14:48	460-00-4	pH
Dibromofluoromethane (S)	101	%	70-130		1		05/03/17 14:48	1868-53-7	
Toluene-d8 (S)	100	%	70-130		1		05/03/17 14:48	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Sample: VAS-5 (17') **Lab ID: 40149151013** Collected: 04/27/17 13:00 Received: 04/29/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		05/03/17 15:10	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		05/03/17 15:10	79-00-5	
1,1-Dichloroethane	**<0.24**	ug/L	1.0	0.24	1		05/03/17 15:10	75-34-3	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		05/03/17 15:10	75-35-4	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		05/03/17 15:10	107-06-2	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		05/03/17 15:10	127-18-4	
Trichloroethene	**<0.33**	ug/L	1.0	0.33	1		05/03/17 15:10	79-01-6	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		05/03/17 15:10	75-01-4	
cis-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/03/17 15:10	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/03/17 15:10	156-60-5	
Surrogates									
4-Bromofluorobenzene (S)	82	%	70-130		1		05/03/17 15:10	460-00-4	pH
Dibromofluoromethane (S)	103	%	70-130		1		05/03/17 15:10	1868-53-7	
Toluene-d8 (S)	101	%	70-130		1		05/03/17 15:10	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Sample: VAS-1 (17') **Lab ID: 40149151014** Collected: 04/27/17 14:30 Received: 04/29/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,1-Trichloroethane	**<5.0**	ug/L	10.0	5.0	10		05/04/17 12:18	71-55-6	
1,1,2-Trichloroethane	**<2.0**	ug/L	10.0	2.0	10		05/04/17 12:18	79-00-5	
1,1-Dichloroethane	**<2.4**	ug/L	10.0	2.4	10		05/04/17 12:18	75-34-3	
1,1-Dichloroethene	**<4.1**	ug/L	10.0	4.1	10		05/04/17 12:18	75-35-4	
1,2-Dichloroethane	**<1.7**	ug/L	10.0	1.7	10		05/04/17 12:18	107-06-2	
Tetrachloroethene	**<5.0**	ug/L	10.0	5.0	10		05/04/17 12:18	127-18-4	
Trichloroethene	**964**	ug/L	10.0	3.3	10		05/04/17 12:18	79-01-6	
Vinyl chloride	**<1.8**	ug/L	10.0	1.8	10		05/04/17 12:18	75-01-4	
cis-1,2-Dichloroethene	**<2.6**	ug/L	10.0	2.6	10		05/04/17 12:18	156-59-2	
trans-1,2-Dichloroethene	**<2.6**	ug/L	10.0	2.6	10		05/04/17 12:18	156-60-5	
Surrogates									
4-Bromofluorobenzene (S)	85	%	70-130		10		05/04/17 12:18	460-00-4	HS,pH
Dibromofluoromethane (S)	102	%	70-130		10		05/04/17 12:18	1868-53-7	
Toluene-d8 (S)	98	%	70-130		10		05/04/17 12:18	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Sample: VAS-1 (12') **Lab ID: 40149151015** Collected: 04/27/17 14:50 Received: 04/29/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		05/04/17 11:56	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		05/04/17 11:56	79-00-5	
1,1-Dichloroethane	**<0.24**	ug/L	1.0	0.24	1		05/04/17 11:56	75-34-3	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		05/04/17 11:56	75-35-4	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		05/04/17 11:56	107-06-2	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		05/04/17 11:56	127-18-4	
Trichloroethene	**20.4**	ug/L	1.0	0.33	1		05/04/17 11:56	79-01-6	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		05/04/17 11:56	75-01-4	
cis-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/04/17 11:56	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/04/17 11:56	156-60-5	
Surrogates									
4-Bromofluorobenzene (S)	87	%	70-130		1		05/04/17 11:56	460-00-4	pH
Dibromofluoromethane (S)	103	%	70-130		1		05/04/17 11:56	1868-53-7	
Toluene-d8 (S)	99	%	70-130		1		05/04/17 11:56	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Sample: VAS-1 (7') **Lab ID: 40149151016** Collected: 04/27/17 15:15 Received: 04/29/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		05/04/17 11:33	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		05/04/17 11:33	79-00-5	
1,1-Dichloroethane	**<0.24**	ug/L	1.0	0.24	1		05/04/17 11:33	75-34-3	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		05/04/17 11:33	75-35-4	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		05/04/17 11:33	107-06-2	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		05/04/17 11:33	127-18-4	
Trichloroethene	**3.9**	ug/L	1.0	0.33	1		05/04/17 11:33	79-01-6	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		05/04/17 11:33	75-01-4	
cis-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/04/17 11:33	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/04/17 11:33	156-60-5	
Surrogates									
4-Bromofluorobenzene (S)	87	%	70-130		1		05/04/17 11:33	460-00-4	
Dibromofluoromethane (S)	101	%	70-130		1		05/04/17 11:33	1868-53-7	
Toluene-d8 (S)	98	%	70-130		1		05/04/17 11:33	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Sample: VAS-10 (7') **Lab ID: 40149151017** Collected: 04/28/17 09:30 Received: 04/29/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Arsenic, Dissolved	**<5.4**	ug/L	20.0	5.4	1		05/04/17 14:59	7440-38-2	
Barium, Dissolved	**31.1**	ug/L	5.0	1.5	1		05/04/17 14:59	7440-39-3	
Cadmium, Dissolved	**<1.3**	ug/L	5.0	1.3	1		05/04/17 14:59	7440-43-9	
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		05/04/17 14:59	7440-47-3	
Lead, Dissolved	**<4.3**	ug/L	13.0	4.3	1		05/04/17 14:59	7439-92-1	
Selenium, Dissolved	**<5.6**	ug/L	20.0	5.6	1		05/04/17 14:59	7782-49-2	
Silver, Dissolved	**<3.2**	ug/L	10.0	3.2	1		05/04/17 14:59	7440-22-4	
7470 Mercury, Dissolved	Analytical Method: EPA 7470 Preparation Method: EPA 7470								
Mercury, Dissolved	**<0.13**	ug/L	0.42	0.13	1	05/05/17 12:45	05/08/17 10:55	7439-97-6	
8260 MSV	Analytical Method: EPA 8260								
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		05/04/17 11:11	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		05/04/17 11:11	79-00-5	
1,1-Dichloroethane	**<0.24**	ug/L	1.0	0.24	1		05/04/17 11:11	75-34-3	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		05/04/17 11:11	75-35-4	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		05/04/17 11:11	107-06-2	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		05/04/17 11:11	127-18-4	
Trichloroethene	**0.44J**	ug/L	1.0	0.33	1		05/04/17 11:11	79-01-6	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		05/04/17 11:11	75-01-4	
cis-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/04/17 11:11	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/04/17 11:11	156-60-5	
Surrogates									
4-Bromofluorobenzene (S)	82	%	70-130		1		05/04/17 11:11	460-00-4	
Dibromofluoromethane (S)	102	%	70-130		1		05/04/17 11:11	1868-53-7	
Toluene-d8 (S)	101	%	70-130		1		05/04/17 11:11	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Sample: TRIP BLANK **Lab ID: 40149151018** Collected: 04/28/17 00:00 Received: 04/29/17 08:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		05/03/17 17:01	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		05/03/17 17:01	79-00-5	
1,1-Dichloroethane	**<0.24**	ug/L	1.0	0.24	1		05/03/17 17:01	75-34-3	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		05/03/17 17:01	75-35-4	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		05/03/17 17:01	107-06-2	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		05/03/17 17:01	127-18-4	
Trichloroethene	**<0.33**	ug/L	1.0	0.33	1		05/03/17 17:01	79-01-6	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		05/03/17 17:01	75-01-4	
cis-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/03/17 17:01	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		05/03/17 17:01	156-60-5	
Surrogates									
4-Bromofluorobenzene (S)	87	%	70-130		1		05/03/17 17:01	460-00-4	
Dibromofluoromethane (S)	101	%	70-130		1		05/03/17 17:01	1868-53-7	
Toluene-d8 (S)	102	%	70-130		1		05/03/17 17:01	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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(920)469-2436

QUALITY CONTROL DATA

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

QC Batch: 254468
QC Batch Method: EPA 6010
Analysis Method: EPA 6010
Analysis Description: ICP Metals, Trace, Dissolved
Associated Lab Samples: 40149151017

METHOD BLANK: 1500441 Matrix: Water
Associated Lab Samples: 40149151017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic, Dissolved	ug/L	<5.4	20.0	05/04/17 13:45	
Barium, Dissolved	ug/L	<1.5	5.0	05/04/17 13:45	
Cadmium, Dissolved	ug/L	<1.3	5.0	05/04/17 13:45	
Chromium, Dissolved	ug/L	<2.5	10.0	05/04/17 13:45	
Lead, Dissolved	ug/L	<4.3	13.0	05/04/17 13:45	
Selenium, Dissolved	ug/L	<5.6	20.0	05/04/17 13:45	
Silver, Dissolved	ug/L	<3.2	10.0	05/04/17 13:45	

LABORATORY CONTROL SAMPLE: 1500442

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic, Dissolved	ug/L	500	475	95	80-120	
Barium, Dissolved	ug/L	500	516	103	80-120	
Cadmium, Dissolved	ug/L	500	513	103	80-120	
Chromium, Dissolved	ug/L	500	521	104	80-120	
Lead, Dissolved	ug/L	500	497	99	80-120	
Selenium, Dissolved	ug/L	500	490	98	80-120	
Silver, Dissolved	ug/L	250	250	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1500443 1500444

Parameter	Units	40148754025 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic, Dissolved	ug/L	<5.4	500	500	504	520	100	104	75-125	3	20	
Barium, Dissolved	ug/L	526	500	500	1050	1080	105	110	75-125	3	20	
Cadmium, Dissolved	ug/L	<1.3	500	500	525	542	105	108	75-125	3	20	
Chromium, Dissolved	ug/L	<2.5	500	500	524	542	105	108	75-125	3	20	
Lead, Dissolved	ug/L	<4.3	500	500	505	522	101	104	75-125	3	20	
Selenium, Dissolved	ug/L	<5.6	500	500	515	537	103	107	75-125	4	20	
Silver, Dissolved	ug/L	<3.2	250	250	242	241	97	96	75-125	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

QC Batch: 254762 Analysis Method: EPA 7470
QC Batch Method: EPA 7470 Analysis Description: 7470 Mercury Dissolved
Associated Lab Samples: 40149151017

METHOD BLANK: 1502089 Matrix: Water
Associated Lab Samples: 40149151017

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	<0.13	0.42	05/08/17 10:06	

LABORATORY CONTROL SAMPLE: 1502090

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	4.7	94	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1502091 1502092

Parameter	Units	40149033001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	<0.13	5	5	4.9	4.9	98	99	85-115	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

QC Batch: 254337 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 40149151001, 40149151002, 40149151003, 40149151004, 40149151005, 40149151006, 40149151007, 40149151008, 40149151009, 40149151010, 40149151011, 40149151012, 40149151013, 40149151014, 40149151015, 40149151016, 40149151017, 40149151018

METHOD BLANK: 1499948 Matrix: Water
Associated Lab Samples: 40149151001, 40149151002, 40149151003, 40149151004, 40149151005, 40149151006, 40149151007, 40149151008, 40149151009, 40149151010, 40149151011, 40149151012, 40149151013, 40149151014, 40149151015, 40149151016, 40149151017, 40149151018

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1-Trichloroethane	ug/L	<0.50	1.0	05/03/17 07:27	
1,1,2-Trichloroethane	ug/L	<0.20	1.0	05/03/17 07:27	
1,1-Dichloroethane	ug/L	<0.24	1.0	05/03/17 07:27	
1,1-Dichloroethene	ug/L	<0.41	1.0	05/03/17 07:27	
1,2-Dichloroethane	ug/L	<0.17	1.0	05/03/17 07:27	
cis-1,2-Dichloroethene	ug/L	<0.26	1.0	05/03/17 07:27	
Tetrachloroethene	ug/L	<0.50	1.0	05/03/17 07:27	
trans-1,2-Dichloroethene	ug/L	<0.26	1.0	05/03/17 07:27	
Trichloroethene	ug/L	<0.33	1.0	05/03/17 07:27	
Vinyl chloride	ug/L	<0.18	1.0	05/03/17 07:27	
4-Bromofluorobenzene (S)	%	85	70-130	05/03/17 07:27	
Dibromofluoromethane (S)	%	98	70-130	05/03/17 07:27	
Toluene-d8 (S)	%	103	70-130	05/03/17 07:27	

LABORATORY CONTROL SAMPLE: 1499949

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	52.0	104	70-131	
1,1,2-Trichloroethane	ug/L	50	47.5	95	70-130	
1,1-Dichloroethane	ug/L	50	46.2	92	70-133	
1,1-Dichloroethene	ug/L	50	47.6	95	70-130	
1,2-Dichloroethane	ug/L	50	48.4	97	70-130	
cis-1,2-Dichloroethene	ug/L	50	47.5	95	69-130	
Tetrachloroethene	ug/L	50	49.9	100	70-138	
trans-1,2-Dichloroethene	ug/L	50	46.6	93	70-131	
Trichloroethene	ug/L	50	53.8	108	70-130	
Vinyl chloride	ug/L	50	52.4	105	49-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Dibromofluoromethane (S)	%			102	70-130	
Toluene-d8 (S)	%			97	70-130	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(920)469-2436

QUALITY CONTROL DATA

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1499953 1499954

Parameter	Units	40149183001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	0.56J	50	50	50.6	51.3	100	102	70-134	1	20	
1,1,2-Trichloroethane	ug/L	<0.20	50	50	46.4	48.2	93	96	70-130	4	20	
1,1-Dichloroethane	ug/L	<0.24	50	50	44.2	44.6	88	89	70-134	1	20	
1,1-Dichloroethene	ug/L	<0.41	50	50	46.1	46.2	92	92	68-136	0	20	
1,2-Dichloroethane	ug/L	<0.17	50	50	45.6	45.8	91	92	70-130	1	20	
cis-1,2-Dichloroethene	ug/L	<0.26	50	50	46.6	46.8	93	94	61-140	1	20	
Tetrachloroethene	ug/L	3.7	50	50	52.3	54.1	97	101	70-148	3	20	
trans-1,2-Dichloroethene	ug/L	<0.26	50	50	45.8	45.9	92	92	70-133	0	20	
Trichloroethene	ug/L	<0.33	50	50	51.6	52.5	103	105	70-131	2	20	
Vinyl chloride	ug/L	<0.18	50	50	51.2	50.0	102	100	49-133	2	20	
4-Bromofluorobenzene (S)	%						99	100	70-130			
Dibromofluoromethane (S)	%						103	101	70-130			
Toluene-d8 (S)	%						97	101	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-G	Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
pH	Post-analysis pH measurement indicates insufficient VOA sample preservation.

Pace Analytical Services, LLC
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Green Bay, WI 54302
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 0383990 THERMO FISHER-TWO RIV
Pace Project No.: 40149151

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40149151017	**VAS-10 (7')**	EPA 6010	254468		
40149151017	**VAS-10 (7')**	EPA 7470	254762	EPA 7470	254796
40149151001	**VAS-4 (15')**	EPA 8260	254337		
40149151002	**VAS-3 (15')**	EPA 8260	254337		
40149151003	**VAS-2 (15')**	EPA 8260	254337		
40149151004	**VAS-7 (22')**	EPA 8260	254337		
40149151005	**VAS-7 (15')**	EPA 8260	254337		
40149151006	**VAS-8 (14.5')**	EPA 8260	254337		
40149151007	**VAS-11 (12')**	EPA 8260	254337		
40149151008	**VAS-12 (20')**	EPA 8260	254337		
40149151009	**VAS-12 (15')**	EPA 8260	254337		
40149151010	**VAS-6 (27')**	EPA 8260	254337		
40149151011	**VAS-5 (27')**	EPA 8260	254337		
40149151012	**VAS-5 (22')**	EPA 8260	254337		
40149151013	**VAS-5 (17')**	EPA 8260	254337		
40149151014	**VAS-1 (17')**	EPA 8260	254337		
40149151015	**VAS-1 (12')**	EPA 8260	254337		
40149151016	**VAS-1 (7')**	EPA 8260	254337		
40149151017	**VAS-10 (7')**	EPA 8260	254337		
40149151018	**TRIP BLANK**	EPA 8260	254337		

Pace Analytical®
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UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

CHAIN OF CUSTODY

4014951

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	ERM
Branch/Location:	Milwaukee
Project Contact:	David de Courcy-Bower
Phone:	414-977-4405
Project Number:	0383990
Project Name:	Thermo Fisher - Two Rivers
Project State:	Wisconsin
Sampled By (Print):	Brenna Bellner
Sampled By (Sign):	Brenna Bellner
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	ERM Rolling Meadows
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: CVOC	Analyses Requested: RCRA Metals	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)
001	VAS-4 (15')	4/26/17	0950	GW	N	B	X			3-40 mL B
002	VAS-3 (15')		1100	GW			X			
003	VAS-2 (15')		1315	GW			X			
004	VAS-7 (22')		1400	GW			X		only 1 vial	1-40 mL B
005	VAS-7 (15')		1415	GW			X			
006	VAS-8 (14.5')		1500	GW			X			
007	VAS-11 (12')	4/27/17	0930	GW			X		extremely turbid	
008	VAS-12 (20')		1030	GW			X		extremely turbid	
009	VAS-12 (15')		1100	GW			X		turbid	
010	VAS-6 (27')		1130	GW			X		turbid	
011	VAS-5 (27')		1230	GW			X		turbid	
012	VAS-5 (22')		1240	GW			X		turbid	
013	VAS-5 (17')		1300	GW			X		turbid	

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed: Standard

Transmit Prelim Rush Results by (complete what you want):

Email #1:	edavid.decourcybower@erm.com
Email #2:	brenna.bellner@erm.com
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	4-28-17 4:30pm	SEALED CS LOGISTICS	4-28-17 4:30pm
CS Logistics	4/29/17 0815		4/29/17 0815

PACE Project No.: 4014951

Receipt Temp = 1.0 °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal Present / Not Present Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

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UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Page 1 of

40149151

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	ERM
Branch/Location:	Milwaukee
Project Contact:	David deCourcy-Bower
Phone:	414-977-4755
Project Number:	0383990
Project Name:	ThermoFisher - Two Rivers
Project State:	Wisconsin
Sampled By (Print):	Brenna Bellmer
Sampled By (Sign):	
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	ERM Rolling Meadows
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: CVOC	Analyses Requested: RCRA Metals	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
014	VAS-1 (17')	4/27/17	1430	GW	N	B	X		turbid	3-40mL,B	
015	VAS-1 (12')	↓	1450	GW	N	B	X		turbid	↓	
016	VAS-1 (7')	↓	1515	GW	N	B	X		turbid	↓	
017	VAS-10 (7')	4/28/17	0930	GW	N	B	X	X		2-40mL,B 1-250mL,D	
018	TRIP BLANK	—	—	W	N	B	X			2-40mL,B	

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed: Standard

Transmit Prelim Rush Results by (complete what you want):
Email #1: david.decourcybower@erm.com
Email #2: brenna.bellmer@erm.com
Telephone:
Fax:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	4-28-17 4:30pm	SEALED CS Logistics	4-28-17 4:30pm
CS Logistics	4/29/17 0815		4/29/17 0815

PACE Project No. 40149151
Receipt Temp = R07 °C
Sample Receipt pH OK / Adjusted
Cooler Custody Seal Present / Not Present Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

Sample Condition Upon Receipt

Pace Analytical Services, Inc.
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Pace Analytical™

Project #: **WO# : 40149151**

40149151

Client Name: ERM

Courier: ☐ Fed Ex ☐ UPS ☐ Client ☐ Pace ☒ Other: CSLogistics

Tracking #: 2042.042817

Custody Seal on Cooler/Box Present: ☒ yes ☐ no Seals intact: ☒ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other

Thermometer Used N/A **Type of Ice:** ☒ Wet Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: RoL /Corr: RoL **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp Blank Present: ☐ yes ☒ no

Person examining contents:
Date: 4/29/17
Initials: SSM

Temp should be above freezing to 6°C for all sample except Biota.
Frozen Biota Samples should be received ≤ 0°C.

				Comments:
Chain of Custody Present:	☒Yes	☐No	☐N/A	1.
Chain of Custody Filled Out:	☒Yes	☐No	☐N/A	2.
Chain of Custody Relinquished:	☒Yes	☐No	☐N/A	3.
Sampler Name & Signature on COC:	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☒Yes	☐No	☐N/A	5.
- VOA Samples frozen upon receipt	☐Yes	☐No		Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes	☒No	☐N/A	6.
Rush Turn Around Time Requested:	☐Yes	☒No	☐N/A	7.
Sufficient Volume:	☒Yes	☐No	☐N/A	8.
Correct Containers Used:	☒Yes	☐No	☐N/A	9.
-Pace Containers Used:	☒Yes	☐No	☐N/A	
-Pace IR Containers Used:	☐Yes	☐No	☒N/A	
Containers Intact:	☒Yes	☐No	☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes	☒No	☐N/A	11.
Sample Labels match COC:	☒Yes	☐No	☐N/A	12.
-Includes date/time/ID/Analysis Matrix: W				
All containers needing preservation have been checked. (Non-Compliance noted in 13.)	☒Yes	☐No	☐N/A	13. ☒ HNO3 ☐ H2SO4 ☐ NaOH ☐ NaOH +ZnAct
All containers needing preservation are found to be in compliance with EPA recommendation. (HNO3, H2SO4 ≤2; NaOH+ZnAct ≥9, NaOH ≥12)	☒Yes	☐No	☐N/A	
exceptions: VOA, coliform, TOC, TOX, TOH, O&G, WIDROW, Phenolics, OTHER:	☒Yes	☐No		Initial when completed SSM / Lab Std #ID of preservative / Date/Time: RL 4/29/17
Headspace in VOA Vials (>6mm):	☒Yes	☐No	☐N/A	14. ~~002, 008, 004, 001, 003, 016, 013, 014, 003, 014, 011~~
Trip Blank Present:	☒Yes	☐No	☐N/A	15. ^ have large head space SSM 4/29/17
Trip Blank Custody Seals Present	☒Yes	☐No	☐N/A	[004+013x1ea 007+008x3ea 014x3]
Pace Trip Blank Lot # (if purchased): 375				

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution: 002 - 3 samples w/ heavy sediment
008 - 3 samples w/ heavy sediment 4/29/17
004 - 1 vial w/ heavy sediment SSM
013 - 1 vial "
014 - 2 vials "

Project Manager Review: RMN for DN **Date:** 4/29/17