

March 1, 2017

Ms. Jennifer Borski
Remediation and Redevelopment Program
Wisconsin Department of Natural Resources
625 East County Road Y, Suite 700
Oshkosh, WI 54901-9731

**Subject: Work Plan for Additional Site Investigation
FV Steel and Wire Company Site
111 North Douglas Street, Hortonville, Wisconsin
BRRTS No. 02-45-560221
AECOM Project No. 60428891**

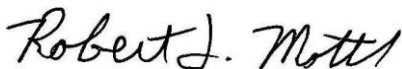
Dear Ms. Borski:

AECOM Technical Services, Inc. (AECOM) has prepared this work plan to propose additional site investigation to determine if volatile organic compounds (VOCs) are present in other areas of the deeper aquifer at the 6.64-acre industrial property located at 111 North Douglas Street (Parcel Number 240031100), Hortonville, Wisconsin. The scope of services also includes some proposed shallow soil sampling along the east ditch-line to further assess surficial polycyclic aromatic hydrocarbon (PAH) impacts in the ditch. The property is currently occupied by an idle industrial structure (complex) and is owned by FV Steel and Wire Company (FV Steel and Wire). The scope of the additional site investigation proposed below is to implement recommendations provided in AECOM's August 31, 2016 Initial Site Investigation Report.

Please contact me if you have any questions or comments regarding the scope of services or procedures presented in this plan.

Yours sincerely,

AECOM Technical Services, Inc.



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Attachments:
Work Plan

AECOM

c: Ms. Courtney Riley
FV Steel and Wire Company
5430 LBJ Freeway, Suite 1700
Dallas, TX 75240

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FV Steel and Wire Company
5430 LBJ Freeway, Suite 1700
Dallas, TX 75240

WORK PLAN

1.0 Introduction

1.1 Site Location and General Description

The subject property known as FV Steel and Wire is located at 111 North Douglas Street in the Village of Hortonville, Wisconsin. The site is depicted on Figure 1. The parcel is located in the Northwest $\frac{1}{4}$, of the Southwest $\frac{1}{4}$, of Section 35, Township 22 North, Range 15 East, Outagamie County. The Wisconsin Transverse Mercator coordinates are 627,452 East (X) and 430,245 North (Y). The property has been owned by FV Steel and Wire and predecessor companies since 1948. FV Steel and Wire conducted manufacturing operations on the property from 1948 until 2001.

The site is 6.64 acres in size and zoned industrial. The parcel is currently occupied by a single-story building, without a basement, approximately 73,200 square feet in plan dimensions. The structure is a structural steel frame with masonry, block. The floor surface is concrete. An out building, about 3,500 square feet in plan dimensions is located immediately west of the main site structure. The outbuilding is constructed of a wood frame with a concrete floor. A garage is located east of the main site structure and is approximately 900 square feet in plan dimension. The remainder of the surface of the property is covered with asphaltic concrete, concrete, gravel, and landscaped areas (see Figure 1).

1.2 Investigation Participants

The following parties are participants in this site investigation.

- **Responsible Party (Owner):**
FV Steel and Wire Company
Three Lincoln Centre
5430 LBJ Freeway, Suite 1700
Dallas, Texas 75240-2601
Contact: Courtney Riley (criley@VALHI.NET)
- **Site:**
Former FV Steel and Wire Company (not currently operational)
111 North Douglas Street
Hortonville, Wisconsin 54944
- **Regulatory Agency:**
Wisconsin Department of Natural Resources
625 East County Road Y, Suite 700
Oshkosh, Wisconsin 54901-9731
Contact: Ms. Jennifer Borski
920-424-7887

- **Consultant:**
AECOM
2985 South Ridge Road, Suite B
Green Bay, Wisconsin 54304
Contact: Mr. Jeff Maletzke
920-406-3110
- **Analytical Laboratory:**
Pace Analytical Inc.
1795 Industrial Drive
Green Bay, Wisconsin 54302
Contact: Chris Hyska
920-321-9407

1.3 Site Background

Since 1948, the property has been used as a manufacturing facility for various steel and wire products including hand driven and galvanized nails. Nail galvanizing operations were carried out from 1987 to 2009. As of early 2017, the site is not operational.

Between 2009 and 2013, United Engineering Consultants (United) on behalf of Fox Valley Steel and Wire (FVSW) conducted a site investigation of the property. During the site investigation between 2009 and 2013, approximately 50 direct push borings were advanced with soil and water analysis. In addition, 13 groundwater monitoring wells were installed and sampled 3 to 4 times over that period along with an on-site supply well located along the south edge of the property near the wood structure.

Concentrations of selected volatile organic compounds (VOCs) including trichloroethylene (TCE) exceeded Wisconsin Administrative Code Chapter NR 140 enforcement standards (ES) and/or preventive action limits (PALs) in some of the monitoring wells and in the on-site supply well. The Wisconsin Department of Natural Resources (WDNR) issued an April 10, 2013 responsible party (RP) letter with new WDNR Bureau of Remediation and Redevelopment Tracking System (BRRTS) Number 02-45-560221 to FV Steel and Wire asking them to implement further soil and groundwater investigation for VOCs and PAHs along with a possible, VOC vapor analysis. In a July 18, 2013 Phase II assessment report, United, on behalf of FVSW, requested closure of previous BRRTS project case 02-45-553699 for inorganics including metals and cyanide.

Readily available records indicate that up to four underground storage tanks (USTs) may have been on site over the course of site operations. A 10,000-gallon diesel UST was located along the west side of the garage and removed in 1989. A 7,000-gallon fuel oil UST was reportedly located on the south side of the main building, and removed in 1989. A 550-gallon unleaded gasoline UST was also reported on the site, and may be double reported in the Wisconsin UST database accounting for a potential fourth UST.

One other potential source of impacts is the former American Toy & Furniture Company (now CNC Enterprises, Inc.) located south (upgradient) of the project site. Previous investigation work has shown a detection of TCE and other VOCs near the CNC north property line.

AECOM provided a work plan to the WDNR in March 2015. The purpose of the work plan was to further address VOC and PAH impacts that may have been related to former operations. Subsequently additional work was completed between May 2015 and July 2016. This included completion of 25 direct push borings, installation of 3 bedrock contact piezometers at depths

ranging between 50 to 80 feet below ground surface (bgs), collection of soil and groundwater samples for chemical analysis, collection of a sludge sample from floor drains, and completion of test pits near two unidentified pipes on the north edge of the property. The results of the work were presented to the WDNR in an Initial Site Investigation Report dated August 31, 2016.

Results of the Site Investigation revealed no evidence of VOC or PAH Residual Contaminant Level (RCL) exceedances in soil or groundwater outside the previously identified VOC soil and groundwater impacts along the west side of the manufacturing building. No physical, visual, or olfactory evidence of a UST or related subsurface impacts was found in the southeast corner of the property nor was evidence found to indicate adverse environmental impacts elsewhere on the property. Test pits completed around the two unidentified pipes along the north property line indicate that the larger 6-inch diameter pipe is likely a well as noted in a 2005 Phase I ESA (Clayton, May 25, 2005). The smaller 2-inch diameter pipe only extended to 8 feet below ground surface and was not connected to any other structure; its purpose is unknown. No visual or olfactory evidence of impacts were noted during excavation.

Groundwater sampling results indicate that VOC ES exceedances are localized along the south property line suggesting a source area to the south of the building. Site investigation results indicate that VOC impacts in soil and the shallow water table aquifer are delineated. Further investigation and delineation in the deeper portions of the unconsolidated aquifer is proposed. Based on sampling conducted in July 2016 for separate sump/roof drain cleanout work, material collected in a subset of concrete enclosed roof drains and sumps, located within and outside the former manufacturing building, indicated elevated PAH concentrations. As it appears that at least some of the sumps ultimately discharge into the ditch running alongside Douglas Street, additional investigation of surface soils in the discharge area of the ditch is proposed to further assess previous PAH detections in the ditch.

1.4 Recommended Additional Investigation

The recommended additional investigation includes the following tasks:

1.4.1 Field Tasks

AECOM will conduct the following field tasks:

1. Utilities will be cleared by a subcontracted utility locating service. Roto-sonic drilling methods with continuous sampling will be used to install four piezometers at the site (PZ-4 through PZ-6 and PZ-7 shown on Figure 1). The piezometer locations and design are intended to aid with delineation of VOC impacts at the bedrock interface. Three of the locations are proposed to be installed on the FV Steel and Wire site property, and the fourth is proposed to be installed to the south, on the former toy company property. AECOM estimates installation depths between 50 and 80 feet below ground surface (bgs). Soil cuttings and well development water will be drummed for future disposal. An AECOM field geologist or engineer will be on site to observe the installations.
2. As conditions allow, four soil samples will be collected with a hand auger (HA-1 through HA-4 shown on Figure 1) to depths of approximately 2 to 4 feet along the ditch line near monitoring well MW-13. Soil samples will be collected from the hand auger borings to aid in further delineation of PAH soil impacts along the ditch-line.

3. AECOM will provide oversight for the subcontracted drillers to abandon the 18-foot deep historic supply well along the north property line.
4. Monitoring Well MW-11, located off-site just north of FV Steel and Wire, is proposed to be sampled. The owner (Ricky and Lisa Wirth, N2729 North Douglas Street, Hortonville, WI) will be contacted to obtain approval for water sampling.
5. After well development, AECOM will collect one groundwater sample from each well and submit for laboratory analysis of VOCs. Similar to previous sampling events, water samples will be collected from the water table wells using an above ground peristaltic pump and from the piezometers with a submersible pump. Dedicated tubing will be used for the sampling in all wells. A flow through cell will be used during well purging to measure field parameters such as temperature, pH, and specific conductance to be reasonably assured the water is from the formation and is not water from the well riser pipe. A second sampling event, approximately 3 months later, will be conducted.
6. Soil and groundwater samples will be placed in proper laboratory containers and submitted to Pace Analytical Services (Pace) in Green Bay, Wisconsin under chain-of-custody control. The soil samples from the hand augers will be analyzed for PAHs according to EPA Method 8270. Groundwater samples will be analyzed for VOCs by EPA Method 8260, and the natural attenuation parameters methane, ethane, ethene, nitrate/nitrite, chloride, and sulfide. Results of the sampling will be presented in a summary report as described in Section 1.4.2.
7. In-situ hydraulic conductivity of the geologic formation at the well screen intervals will be estimated using the slug test or bail-down method. In-situ hydraulic conductivity testing will be performed on three monitoring wells and three piezometers positioned across the site to help estimate hydraulic conductivity and groundwater flow velocity. Piezometer testing will be completed following monitoring well development and after stabilization of groundwater levels in the wells. If the hydrogeology and schedule allows, up to three rising head tests will be conducted. Wells which become dry during monitoring well development will be tested twice. Slug tests will be conducted using a stainless steel or PVC slug with rope, an In-Situ Level Troll 700 pressure transducer, an In-Situ Rugged Reader data logger, an electronic water-level indicator, and computer.

For each test, a 15 psi Level Troll 700 pressure transducer will be lowered into the water column and allowed to equilibrate to groundwater temperature and pressure. If the aquifer recovers too slowly for variable head testing, wells will be manually bailed and water level recovery measured for the analysis. Data will be analyzed with the use of AQTESOLV for Windows Pro (Version 4.5) an aquifer test analysis software package (HydroSOLVE 2007). The hydraulic conductivity of the geologic formation will be estimated by analyzing the displacement/drawdown (feet) versus time (minutes or seconds) data.

1.4.2 Reporting

AECOM will prepare an Updated Site Investigation report with the results of the field and laboratory work. Lab data from the wells and soil samples will be summarized on data tables. Observations and selected photographs from the field activities will be included in the report. The report will include a site location map, site plan, representative site photographs, and a copy of the laboratory reports.

1.4.3 Investigation Derived Waste Disposal

Drilling cuttings and purge water from the well sampling will be containerized and positioned securely on site until laboratory analyses are available for waste disposal determination. Disposal records will be included in the Updated Site Investigation Report.

1.5 Schedule

AECOM expects that we will proceed with off-site access communication and coordination of subcontract drilling within 1 to 2 weeks of discussing this work plan with the WDNR. We anticipate that field tasks will be initiated in April or May 2017.



PROPOSED HAND AUGER AND WELL LOCATIONS

FV Steel and Wire Company
111 N. Douglas Street, Hortonville, WI

Legend

- Proposed Well Locations
- Well Location
- Proposed Hand Augers
- Railroad
- Geoprobe Location (Previous Investigation)
- Project Area
- Soil Boring
- Production Well

Notes:

- MW wells are monitoring wells less than 15 feet below ground surface. PZ wells are piezometers set between 50 and 80 feet below ground surface.
- Soil sampling results from April 2015 were below the NR 720 RCLs.
- Geoprobe locations from previous investigation are approximate.
- GP-1 through GP-8 are assumed to be the B-1 through B-8 sample locations.

Drawn: R. WESELJAK	12/8/2016
Approved: R. MOTT	12/8/2016
Scale:	AS SHOWN
PROJECT NUMBER	60301459
FIGURE NUMBER	1

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community