

From: Dombrowski, Frank J <frank.dombrowski@wecenergygroup.com>
Sent: Thursday, February 2, 2023 9:58 AM
To: Werner, Leah
Cc: Krueger, Sarah E - DNR; Luke, Glenn R; Julie A Zimdars (Julie.Zimdars@ramboll.com); 'staci.goetz@ramboll.com'; Abigail Small (ASMALL@ramboll.com); 'adrienne.korpela@jacobs.com'
Subject: WPSC Green Bay MGP - ERA Workplan Addendum 1 Rev 0
Attachments: Green Bay MGP ERA Work Plan Addendum 1 Rev 0.pdf

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Leah,

Please find attached Addendum 1 to the ERA Workplan for the former WPSC Green Bay, WI MGP site. Please feel free to contact me or Glenn if there are any questions.

Thanks,

Frank Dombrowski
Principal Environmental Consultant

WEC Energy Group - Business Services
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Serving WEC Energy Group, We Energies, Wisconsin Public Service, Michigan Gas Utilities, Minnesota Energy Resources, Peoples Gas and North Shore Gas



Wisconsin Public Service Corporation
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Green Bay, WI 54307-9001
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February 2, 2023

Ms. Leah Werner
Remedial Project Manager
United States Environmental Protection Agency
77 W. Jackson Boulevard
Chicago, Illinois 60604-3590

**RE: Removal Action Work Plan (RAWP)
Former WPSC Green Bay Manufactured Gas Plant Site, Green Bay, Wisconsin
Wisconsin Public Service Corporation
CERCLA Docket No. V-W-06-C-847, CERCLIS ID – WIN000509948, BRRTS # - 02 05
000254**

Dear Ms. Werner:

Wisconsin Public Service Corporation (WPSC) is submitting the attached Addendum No. 1, Revision 0 to the Early Removal Action (ERA) Work Plan - Revision 2 for the Green Bay Former Manufactured Gas Plant (MGP) Site, Wisconsin Public Service Corporation (WPSC), Green Bay, Wisconsin.

WPSC submitted a letter of intent to USEPA on March 25, 2022 to request permission to proceed with focused early removal action to facilitate upcoming property redevelopment. On April 26, 2022, USEPA issued a letter of authorization to complete this ERA with a requirement to provide a work plan for USEPA review and comment. On September 26, 2022, WPSC submitted the ERA Work Plan - Revision 2. The United States Environmental Protection Agency (USEPA) reviewed and commented on the ERA Work Plan. This Addendum describes an alternate method for removing the sediment and riverbank soil in Operable Unit 2 and is intended to be used in lieu of the methods proposed in the ERA Work Plan (which was removal in a dewatered state). The alternate method can achieve the remedial objectives and is due to changed conditions observed during a preconstruction utility and bathymetric survey completed in September 2022.

As we have discussed, the proposed timing for implementation of this work (May 2023) is contingent upon expeditious review and approval of the ERA Work Plan Addendum. Your cooperation on this matter is greatly appreciated.

If you have any questions, please don't hesitate to contact me at (414) 221-2156 or via email at frank.dombrowski@wecenergygroup.com.

Sincerely,

A handwritten signature in black ink that reads 'Frank Dombrowski'. The signature is written in a cursive, slightly slanted style.

Frank Dombrowski
Principal Environmental Consultant
WEC Business Services – Environmental Dept.

Enclosures: Early Removal Action Work Plan Addendum No. 1, Revision 0

For distribution to: Ms. Sarah Krueger, WDNR (via email)
Ms. Adrienne Korpela, Jacobs (via email)
Ms. Staci Goetz, Ramboll (via email)
Mr. Glenn Luke, WPSC (via email)

MEMO

To: Frank Dombrowski and Glenn Luke - WPSC
From: Abby Small and Julie Zimdars – Ramboll
cc: Staci Goetz - Ramboll
Re: Early Removal Action Work Plan Addendum No. 1, Revision 0
 Green Bay Former Manufactured Gas Plant, Green Bay, Wisconsin
 Wisconsin Public Service Corporation
 CERCLA Docket No. V-W-06-C-847, WDNR BRRTS # 02-05-000254,
 CERCLIS ID – WIN000509948

February 2, 2023

Ramboll is providing this Addendum No. 1, Revision 0 to the Early Removal Action (ERA) Work Plan-Revision 2 (ERA Work Plan) dated September 26, 2022 (Ramboll, 2022) for the Wisconsin Public Service Corporation (WPSC) Green Bay Former Manufactured Gas Plant (MGP) Site. The United States Environmental Protection Agency (USEPA) reviewed and commented on the ERA Work Plan in accordance with their April 26, 2022 authorization to conduct the work. This Addendum describes an alternate method for removing the sediment and riverbank soil in OU2 and is intended to be used in lieu of the methods proposed in the ERA Work Plan (which was removal in a dewatered state). The alternate method can achieve the remedial objectives and is due to changed conditions observed during a preconstruction utility and bathymetric survey completed in September 2022. As noted in the ERA Work Plan, the objective of the sediment removal is to *remove limited impacted sediments and verify extents in immediately adjacent shoreline areas as necessary to address the identified source of "sheen" in the cove area adjacent to the east end of Utility Court.*

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BASIS OF ALTERNATE METHOD FOR OU2 REMOVAL

Preconstruction Bathymetric and Utility Survey

As noted in the ERA Work Plan, a bathymetric survey and in-river/submerged utility survey of the cove area was completed in September 2022 by JF Brennan and DOC Mapping, their subcontractor. A summary report prepared by DOC Mapping including means, methods and results is included as Attachment 1. The updated bathymetric survey is incorporated into modified Sheets C-090 and C-100 included as Attachment 2. The survey identified the following conditions that require modification to the means and methods of the sediment cove ERA:

- The top of sediment elevation in the sediment removal area ranges from 576 feet in the North American vertical Datum of 1988 (NAVD88) to 570 feet NAVD88. Given an estimated water elevation of 581 ft NAVD88, the water column height is nearly 10 feet on the main channel side of the removal area. Based on conversations with the vendors of non-intrusive dams and remedial construction contractors, the water depths and channel bed slope is too great to use a non-intrusive dam as originally proposed.

- An additional active telephone line was identified crossing the proposed removal area (Sheet C-090) along with the previously identified active communication line and abandoned gas line. As determined previously, the presence of these utilities precludes the use of sheet pile in the removal area and is not considered feasible.

Therefore, the original proposed sediment removal method in the ERA Work Plan using containment and dewatering for removal in a dewatered state will not be used. Instead, the targeted removal will be conducted in a wet condition using the means and methods described herein.

ALTERNATIVE MEANS AND METHODS

Turbidity Containment

As an initial step, a turbidity barrier with floating adsorbent boom will be installed to contain any turbidity during construction activities as shown on Sheet C-090. The barrier system will be 200 feet long and extend to bottom of riverbed (likely maximum 13 feet deep) with low permeability fabric, equipped with foam floatation logs, ballast chains, and associated hardware. The barrier will be connected to concrete jersey barriers located on the riverbank at both ends of the containment. In the river, the barrier will be held in place with a series of anchor systems connected every 50 feet and at critical corners. Anchor systems will include 50 lb. Danforth anchors, ballast chains, shock lines and buoys. Inside the barrier, the remedial contractor will also deploy and maintain sorbent boom to contain any potential sheen and/or collect any potential floating non-aqueous phase liquid (NAPL). The remedial contractor will have additional barrier and sorbent boom available on-site in the event the primary barrier is damaged, or that a secondary barrier is needed based on the Water Quality Monitoring Plan provided in Section 5.7 of the ERA Work Plan. The barrier will not be keyed into the riverbank as it is unnecessarily intrusive and would require removal of rip-rap and sediment in areas beyond the remedial limits, creating turbidity during installation and removal with no significant improvement of the barrier performance. Steel posts will also not be used due to the presence of utilities.

No changes to the turbidity monitoring from the ERA Work Plan are proposed. Details on the turbidity monitoring plan and its implementation were provided in Section 5.7 of the ERA Work Plan.

Stormwater Diversion

The 48" City of Green Bay stormwater outfall located within the work area will be diverted during duration of sediment work in coordination with the City of Green Bay.

Targeted Excavation and Investigation

All stone, riverbank soil and sediment removal will be performed with a land-based GPS enabled long-stick excavator, equipped with a 65-foot boom and a 1.25 cubic yard grading bucket. For near-shore work and large rip-rap handling, the long-stick excavator may be assisted by another land-based excavator.

As part of the site setup, the Sediment Material Management Pad (MMP) will be placed closer to the work area such that the excavator(s) can place impacted material directly onto the pad in the approximate location shown on Sheet C-090. A plastic liner will be placed on the ground between the MMP and the work area to contain any potential spillage.

Rip-Rap

The rip-rap will be removed first and placed inside the MMP where it will be power washed to remove commingled sediment, which will also be removed from within and below the collocated rip-rap. Rip-rap that is visibly stained after cleaning will not be beneficially reused and will be disposed of at Waste Management Ridgeview Landfill, located in Whitelaw, Wisconsin, and/or at Green For Life (GFL) Hickory Meadows, Hilbert, Wisconsin. All rip-rap that is determined to be acceptable for re-use on the riverbank will be removed from the MMP and set aside for the backfill phase. Any rejected rip-rap will remain in the MMP during sediment removal and become part of the waste stream.

Riverbank Soils

The temporary removal of the rip-rap will provide opportunity to observe underlying riverbank soils for indications of impact such as staining, sheen, or oil-wetting/oil-coating. One-half foot (0.5 feet) of riverbank soil will then be mechanically removed from below the rip-rap as shown on Sheet C-100. Wet soil will be staged on the MMP for moisture management and eventual loading for off-site disposal. If indications of impacts such as staining, sheen, or oil-wetting/oil-coating are identified in the removed riverbank material, additional riverbank soil will be mechanically removed in half-foot increments until no visual impacts are observed, as practicable. If it becomes apparent that riverbank soil impacts are extensive and bank stabilizing measures are necessary, USEPA will be notified and plans for addressing this in the Remedial Investigation (RI) will be discussed. Saturated soils will be staged on the MMP and gravity-dewatered and amended with a drying agent (e.g., Portland cement or calciment) as needed to meet landfill disposal requirements.

Soft In-Channel Sediments

Saturated, soft in-channel sediments will be removed from within the Sediment Removal Area as shown on Sheet C-100. The removal extent is based on observations of sheen generated during sediment probing activities, soft sediment thickness observations measured by poling activities, and sediment sampling analytical results as presented on Figure 4 of the ERA Work Plan. All soft sediment within the lateral extent will be removed down to the underlying native clay bottom. Saturated sediments will be staged on MMP and gravity-dewatered and amended with a drying agent (e.g., Portland cement or calciment) as needed to meet landfill disposal requirements.

Backfilling

No changes to the backfilling activities are proposed. Backfilling will occur after post-removal sampling and topographic/hydrographic survey of the OU2 investigation and removal area is complete. Post-removal topographic/hydrographic survey will be completed by poling and land survey methods (including a GPS-enabled excavator).

Clean, quarry-sourced pea gravel will be used to backfill the removed channel sediment per Wisconsin Department of Natural Resources (WDNR) request and restored to pre-removal grade based on the pre-removal bathymetric survey. A coarse, quarry-sourced clean-washed gravel will be used to backfill the area where riverbank soil was removed and the decontaminated rip-rap will be replaced overtop the aggregate as shown on Sheet C-100. If additional extensive removal is determined to be necessary during removal activities, the placed gravel backfill will be considered an interim measure and additional evaluation will be required during the RI.

VISUAL BUCKET INSPECTIONS

Throughout the removal in both the rip-rap investigation area and the sediment removal area, visual inspections of the material removed and placed on the MMP will be performed.

Additionally, in the rip-rap investigation/riverbank area visual bucket inspections of the material remaining in place will be completed along the length of the riverbank consistent with the methods used in the North Focus Area (NFA) (OBG, 2019) (included as Attachment 3) and accepted by USEPA on July 18, 2019.

Once one-half foot of riverbank material underneath the rip-rap has been removed, the excavator will remove a bucket representing a sample of riverbank material below the excavated elevation for visual observation. The shoreline removal extent is approximately 70-75 feet-long and so five bucket-collected samples spaced approximately 15 feet apart are proposed. Based on these visual observations, Ramboll will confirm whether the sampled soils contain significant visual¹ dense non-aqueous phase liquid (DNAPL). If one or more of the soil sample locations is observed to contain significant visual DNAPL, additional excavation will be performed until Ramboll determines that the additional excavation has removed significant visual DNAPL in the immediate vicinity of the sample to the extent practicable, and consistent with the NFA approach. If it becomes apparent that riverbank soil impacts are extensive and bank stabilizing measures are necessary, USEPA will be notified and plans for addressing it in the RI/FS will be discussed.

Figure 6 (Proposed Post-Excavation Sampling Plan) from the ERA Work Plan has been updated to include the proposed visual bucket inspection locations.

POST-REMOVAL SAMPLING

Post removal sampling is consistent with the ERA Work Plan. No changes to the quantity of samples, analytical methods, or means and methods are proposed.

REFERENCES

O'Brien and Gere (OBG), 2018. Former Green Bay MGP Site South Focus Area Remedial Action Sampling and Analysis Plan, Revision 1. November 1.

OBG, 2019. Documenting DNAPL while Dredging in NFA, Revision 2. June 28.

Ramboll, 2022. Early Removal Action Work Plan, Former Green Bay Manufactured Gas Plant, Revision 2. September 26.

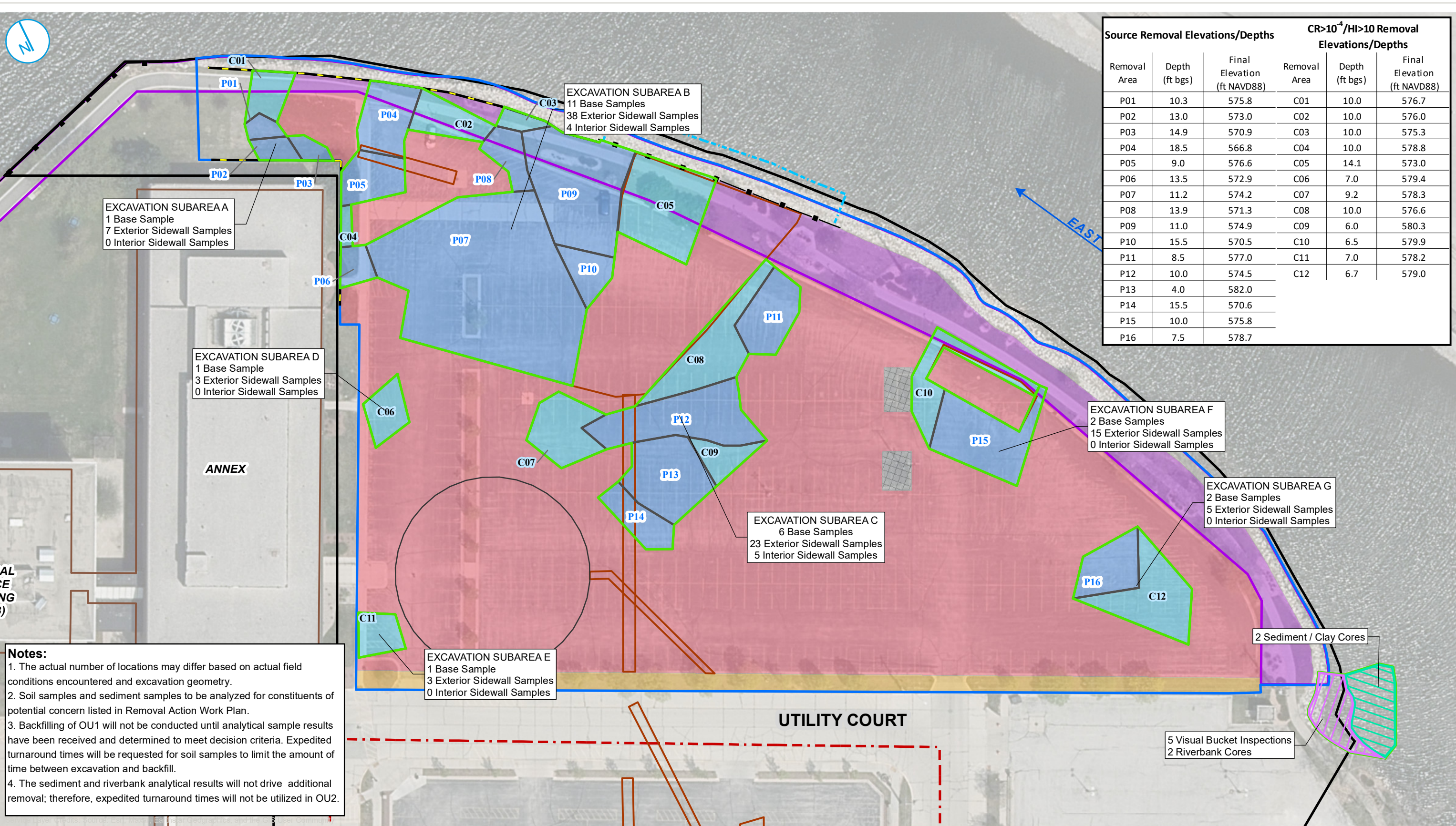
ATTACHMENTS

Updated Figure 6 – Proposed Post-Excavation Sampling Plan
Attachment 1 – DOC Mapping Bathymetric Survey and In-River/Submerged Utility Survey
Attachment 2 – Updated Sheets C-090 and C-100
Attachment 3 – Documenting DNAPL while Dredging in NFA

¹Consistent with the NFA approach, "significant" DNAPL will be characterized as any reproducible mobile "bleeding" DNAPL and/or DNAPL >20% of the entire matrix (bucket sample).

UPDATED FIGURE 6 - PROPOSED POST-EXCAVATION SAMPLING PLAN

PROJECT: 169000XXXX | DATED: 1/31/2023 | DESIGNER: STOLZSD



- EXISTING SHEETPILE WALL
- PROPOSED SHEETPILE WALL
- SHORELINE EXCAVATION EXTENT (REMEDIAL ACTION COMPLETED IN 2018)
- FORMER STRUCTURE
- SOIL REMEDIATION EXCAVATION AREAS (2003)
- BUILDING FOOTPRINT
- UPLAND SITE BOUNDARY
- RIVERWALK EASEMENT AREA
- NORTH PARKING LOT
- FORMER MGP SITE
- ← RIVER FLOW DIRECTION
- CONTIGUOUS DEEP EXCAVATION SUBAREA
- DIRECT CONTACT REMOVAL - 2FT BGS
- DIRECT CONTACT REMOVAL - 4 FT BGS
- CR>10-4/ HI>1 REMOVAL
- SOURCE REMOVAL
- UTILITY COURT CORRIDOR*
- BOLLARD AREA (NO REMOVAL)
- RIP-RAP INVESTIGATION EXTENT
- SEDIMENT REMOVAL AREA

PROPOSED POST-EXCAVATION SAMPLING PLAN

REMOVAL ACTION WORK PLAN
FORMER GREEN BAY MANUFACTURED GAS PLANT
WISCONSIN PUBLIC SERVICE CORPORATION
GREEN BAY, WISCONSIN

FIGURE 6

RAMBOLL US CORPORATION
A RAMBOLL COMPANY



ATTACHMENT A – DOC MAPPING BATHYMETRIC SURVEY AND IN-RIVER/SUBMERGED UTILITY SURVEY

East River

South Focus Area

Bathymetric Survey and In-River/Submerged Utility Survey Green Bay, WI

Prepared by:



Prepared for:



Survey Date(s):

9/26/2022 - 9/27/2022

Report Issued:

10/21/2022

Report Contents

This report includes the following media:

- **Full Report**

- Executive Summary
- Project Description
- Methodology
- Personnel
- Equipment
- Site Summaries & Photos
- Overview Imagery
- Detailed Imagery
- DoC Study Control Point Verification Sheet

- **Electronic Files**

- Full Report PDF
- Overview PDFs
- CAD-Importable CSV & XYZ Files
- Mag Anomalies & SBP Contacts Shapefiles
- Google Earth KMZ

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Appendix A: Site Summary, Survey Area Overview, and Plot Sheets

Appendix B: Control Point Verification Sheet

Executive Summary

On 9/26/2022 - 9/27/2022, DoC Mapping was tasked with performing a bathymetric survey and a utility search to locate the in-river/submerged Abandoned Gas pipelines and Fiber Optic cable thought to cross the East River near Green Bay, WI.

During the study, the following was noted:

- No available hookups were found for either gas line and all attempted hookups to the fiber optic line resulted in no signal propagation.
- Live signal surveys were conducted at 32, 98, 128, 491, 640, 815, and 982 Hz but no usable signal was found tracking the buried utilities.
- A magnetometer survey resulted in noisy data across the scope area:
 - 12 spikes in the mag data are called out as anomalies but could not be used to conclusively pinpoint any features due to the overall congestion of metallic structures in the area.
 - Mag activity is present across the waterway where the three utilities are expected to cross, but the overhead powerlines and metallic shoreline structures make it impossible to further refine the positions of these utilities.
- A sub-bottom profiler survey was conducted across the scope area to try and pinpoint the buried utilities:
 - 3 contacts were found in the survey area
 - None of the contacts could be confirmed as liner features using the adjacent sub-bottom passes
 - Contact003 is in line with a vault found on the western shoreline with cables inside but could not be verified in the other data sources as a buried utility.
- Multibeam sonar data was collected across the scope area and is provided at a 6in resolution with elevations in NAVD88 GEOID 12B.
 - Several linear features are visible branching off the western shoreline in the vicinity of where the three utilities are expected to cross the river, it is not clear whether these features are associated with the utilities. Detailed imagery is provided in the report.
- Shorelines were photo documented, and the position of outfalls along the shorelines are provided.

This report details the equipment and means used to acquire this data and provides representations of the data obtained and point tables of the data collected.

Project Description

DoC Mapping was contracted by JF Brennan to perform a bathymetric survey and in-river/submerged utility survey in the South Focus Area of the East River near Green Bay, WI. The East River flows from southeast to northwest and the lines are thought to cross in a west to east orientation. JF Brennan provided information for this site and DoC Mapping used these materials as a starting point to create a survey plan and a full suite of electromagnetic locating equipment and sonar system were deployed to the site.

Due to a lack of available transmitter hookups the utility survey was predominately focused on the interpretation of sub-bottom profiler data and magnetometer data. None of the data collected using the EM locating equipment was usable due to a lack of signal propagation on the pipes and significant noise from overhead powerlines.

See Appendices for site summary and survey area overviews.

Methodology

A survey vessel was deployed to the site and survey lines were run at 30 ft intervals with a mounted R2Sonic 2024 multibeam echosounder, a mounted Innomar sub-bottom profiler, and a towed Geometric G882 magnetometer sensor run in tandem. Data was collected in SonarWiz7. Sound velocity profiles were collected at regular intervals for ray tracing the multibeam sonar data. A patch test was performed to correct for roll, pitch and yaw errors in the data. IMU and positioning data was processed in POSpac and an SBET file was applied to the multibeam bathymetry to achieve PPK level accuracies.

Multiple attempts were made to locate the lines in the area using an ORI Orion EM towable. Transmitter connections were tested for the Fiber Optic cable, but no signal could be propagated. Live signal searches were conducted across the entire scope area, but no signal was found corresponding to the buried utilities.

Data was processed and interpreted in SonarWiz7. Multibeam data was cleaned and gridded at 1ft and 6in intervals to provide detailed imagery of the riverbed. Sub-bottom data was bottom-tracked to digitize the sediment-water interface and contacts were marked where possible features were seen beneath the bottom. A contour map of the magnetometer data was produced, and data was interpreted for known and unknown anomalies. Significant magnetic activity was present likely associated with shoreline structures, overhead powerlines, and bridge structures. Unknown anomalies were identified and assessed for significance.

Personnel

DoC Mapping supplied 3 technicians to perform the DoC study. Technicians included:

- Jan Trienekens, Crew Lead / Supervisor
- Blake Bodin, Systems Technician
- Brandon Craig, Systems Technician

A JF Brennan representative was the point of contact for the duration of this survey and was kept informed of daily field operations.

Equipment

The following equipment was used during the course of this survey. Equipment specifications are available upon request.

Survey Vessel(s) and/or Vehicle(s)

25' Survey Vessel was outfitted with the equipment and sensors listed below, and acted as the primary data collection vehicle during survey operations.

Locating Equipment

Underwater EM Locating System is a towed locating sensor array that is tied into the survey computer running both hydrographic software and locating software simultaneously.

Pole/Hull-Mounted EM Locating System is a dual-spar locating sensor array that is tied back into the locating software. This system can also be mounted on a survey pole while locating on land or wading within the waterway.

Geometrics G882 Magnetometer was used to perform a survey that measures the presence and size of changes in magnetic fields in order to locate the presence of buried ferrous objects beneath the sea floor.

GPS Survey Equipment

Hemisphere S321 Base Station w/ Radio was tied to the survey suite and set up to provide RTK accuracy for the rover system.

Hemisphere S321 Rover & Data Collector was tied into the various other systems in order to provide survey grade coordinates for all data points. RTK corrections were utilized during the survey to enhance the accuracy of the GPS readings.

Sonar Equipment

R2Sonic 2024 Multi-Beam Echosounder was used to generate a bathymetric surface of the entire survey area. This system includes an on-board inertial RTK system in order to achieve the highest degree of precision during bathymetric operations. The imagery from this system is also used as a check for exposed utilities in the area.

Innomar Sub-Bottom Profiler is usually employed to identify and characterize layers of sediment or rock under the seafloor. These systems can also be helpful in locating hard objects buried beneath the seafloor, such as pipes or conduits. DoC Mapping utilizes SBP technology as a supplementary tool to EM locating data results when it comes to buried metallic lines. This is also the tool of choice when an EM signal cannot be applied to the target line.

Appendix A:

Site Summary and Survey Area Overview

East River Site Summary

Abandoned Gas Line 1, Abandoned Gas Line 2, Fiber Optic Line

Description:

On 9/26/2022 - 9/27/2022, a utility search and depth of cover study was conducted to find the Abandoned Gas Line 1, Abandoned Gas Line 2, and Fiber Optic Line lines. These lines cross the East River in a roughly west to east orientation. Per the as built the 12" abandoned line is to the northeast and downstream of the 8" line. The fiber optic line and overhead power line is between the 12" and 8" abandoned lines. Based on signage there may also be another abandoned cable in this area just upstream of the drainage culvert on the Western bank.

Site Observations:

The East River flows from southeast to northwest with an approximate flow velocity of 0.4 ft/sec at this crossing site. The western shoreline consists of scour protection rock site area. At the merger of the East and Fox river, the turning basin is surrounded by sheet pile wall. The eastern shoreline consists of scour protection rock, with sheet pile at the turning basin. A drainage culvert was noted on the eastern bank between the 2 abandoned gas lines, just downstream of the powerline. No shore side access was possible on the eastern side due to access issues. A metal bridge crosses the river at the upstream extent of the survey area. A visual survey was also performed and photo-documented for these shorelines.

Signal Application Notes:

As no connection was possible to either gas line, a passive 60hz locate was attempted on shore and in the water. Direct connections were attempted for the fiber optic line; however, no signal propagation was noted. Additionally passive detection was attempted at 32, 98, 128, 491, 640, 815, and 982 Hz, with no signal response from either gas line or the FO cable. 60Hz data was not usable due to overhead powerlines in the vicinity of the line crossing. For a map view, see the *Survey Area Overview Appendix*

Plot Sheet Notes:

Multibeam Sonar Imagery Overview – Multibeam sonar was collected throughout the scope area, and the imagery is provided on the overview at a 6in grid resolution. Linear features were visible branching off the western shoreline in the vicinity of where the three utilities are expected to cross the river, but it's unclear if these features are associated with the utilities. The northernmost feature is 16ft long and has the appearance of an exposed 1-2' wide pipeline but this was not confirmed in the magnetometer readings. The other linear features look like mounded sediment or bank structures but could indicate buried utilities.

Magnetometer Overview – The plot sheet portrays the magnetometer data in contours with positive readings shown in red and negative in blue. The density of the contours shows the significant magnetometer activity seen throughout the survey area related to the metallic structures and overhead powerlines on site. Spikes are called out as anomalies, but the overall noisy quality of the data made it impossible to pinpoint buried utilities or individual features. A pattern of anomalies can be seen in the area where the utilities are expected to cross the river but could not be further refined to pinpoint exactly where the buried pipes or fiber optic cable are located.

Sub-Bottom Profiler Overview – Sub-bottom passes are drawn across the survey area to show where data was collected. Three contacts were called out and imagery is included on the overview. Contact0003 was in line with the vault on the western shoreline where cables were seen on the western shoreline. Unfortunately, a linear feature could not be confirmed at Contact0003 in the adjacent sub-bottom passes.

Transmitter Connection(s)



Transmitter Connection Site Overview



Transmitter Connection Closeup – Fiber Optic Connection

Shoreline Photos



Upstream view (facing southeast)



Downstream view (facing northwest)



Across waterway view of western shoreline



Closeup view of eastern shoreline

Shoreline Features



Eastern Shore Colvert



Vault on Western shore, Under CP2



Eastern Shore signage for buried cable



Cables in Western shore vault, possibly heading to signs on Eastern shore

Western Shoreline photos



Upstream extent, Western shore.



Western shore, at crossing



Western shore, Downstream of crossing area



Western shore, power line crossing

Western Shoreline Photos Cont.



Western Shoreline conditions



Western shore, Downstream extent

Eastern Shoreline Photos



Eastern shore, Downstream extent



Eastern shore, Downstream powerline crossing



Eastern shore



Eastern shore, approximate location of 12" line

Additional Photos (Continued)



Eastern Shore, Culvert and possible cable location



Western Shore, Upstream extent, and powerline crossing

Control Point Photos



Control Point "OPUS" Overview



Control Point "Opus" Closeup



Control Point "CO1" Overview



Control Point "CO1" Closeup

Control Point Photos (continued)



Control Point "CO2" Overview



Control Point "CO2" Closeup

Flow Direction
0.4 ft/sec

Legend

- Control Points
- Outfalls

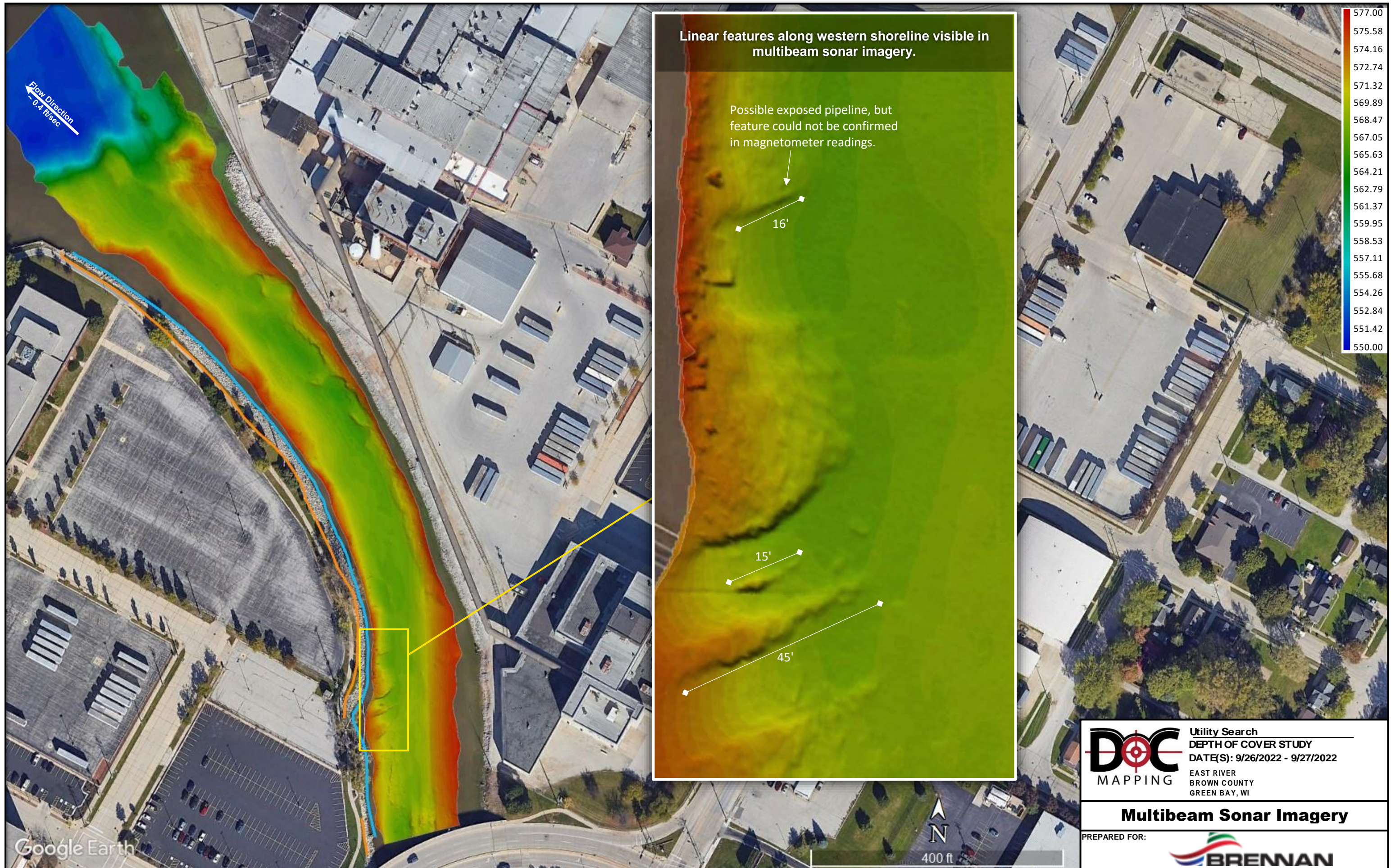


DOC MAPPING Utility Search
DEPTH OF COVER STUDY
DATE(S): 9/26/2022 - 9/27/2022
EAST RIVER
BROWN COUNTY
GREEN BAY, WI

Survey Area Overview
PREPARED FOR: **BRENNAN**

Google Earth





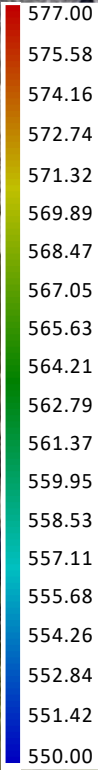
Linear features along western shoreline visible in multibeam sonar imagery.

Possible exposed pipeline, but feature could not be confirmed in magnetometer readings.

16'

15'

45'



DOC Utility Search
 MAPPING DEPTH OF COVER STUDY
 DATE(S): 9/26/2022 - 9/27/2022
 EAST RIVER
 BROWN COUNTY
 GREEN BAY, WI

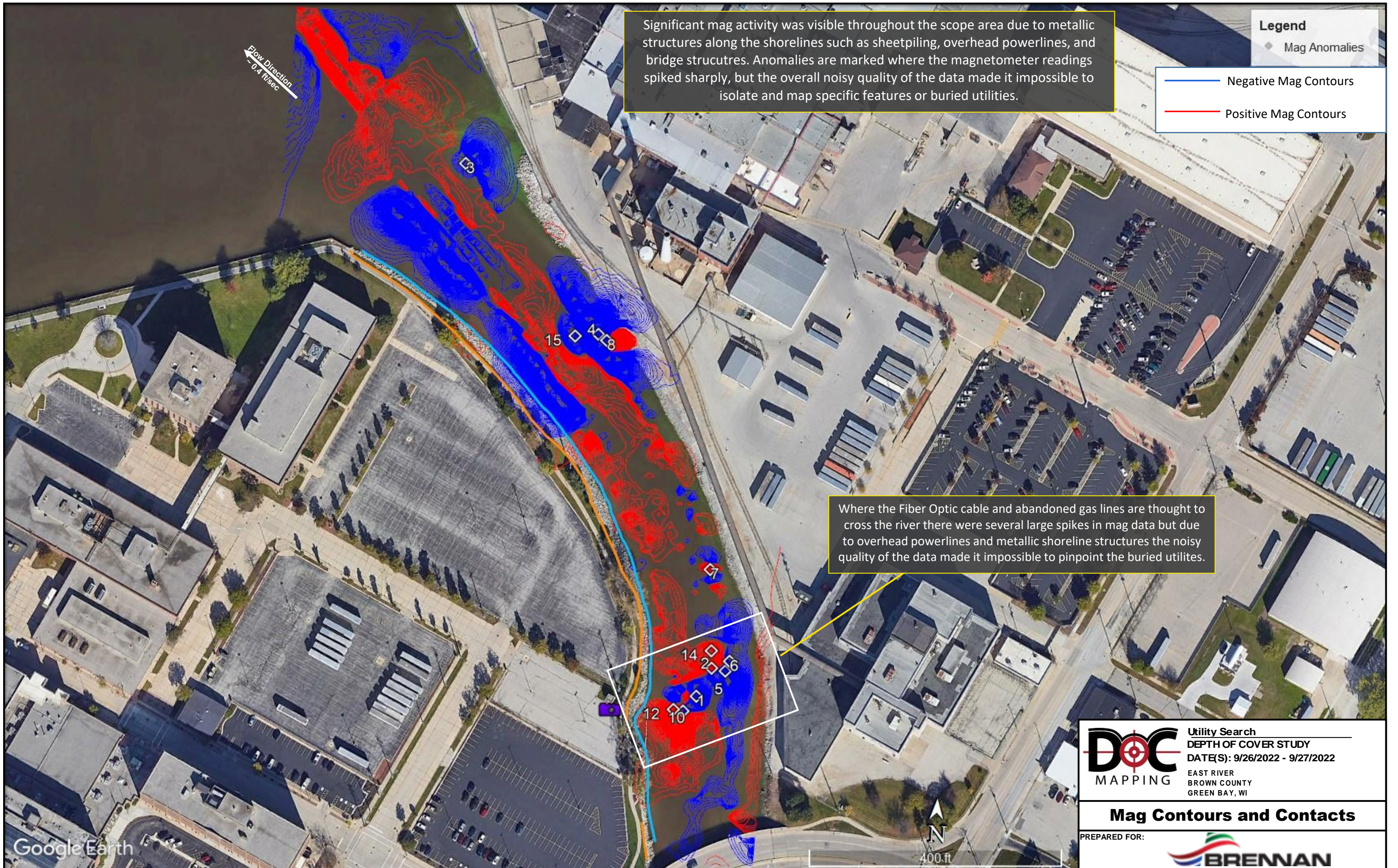
Multibeam Sonar Imagery

PREPARED FOR: BRENNAN

Flow Direction
 0.4 T/sec

Google Earth





Significant mag activity was visible throughout the scope area due to metallic structures along the shorelines such as sheetpiling, overhead powerlines, and bridge structures. Anomalies are marked where the magnetometer readings spiked sharply, but the overall noisy quality of the data made it impossible to isolate and map specific features or buried utilities.

Legend

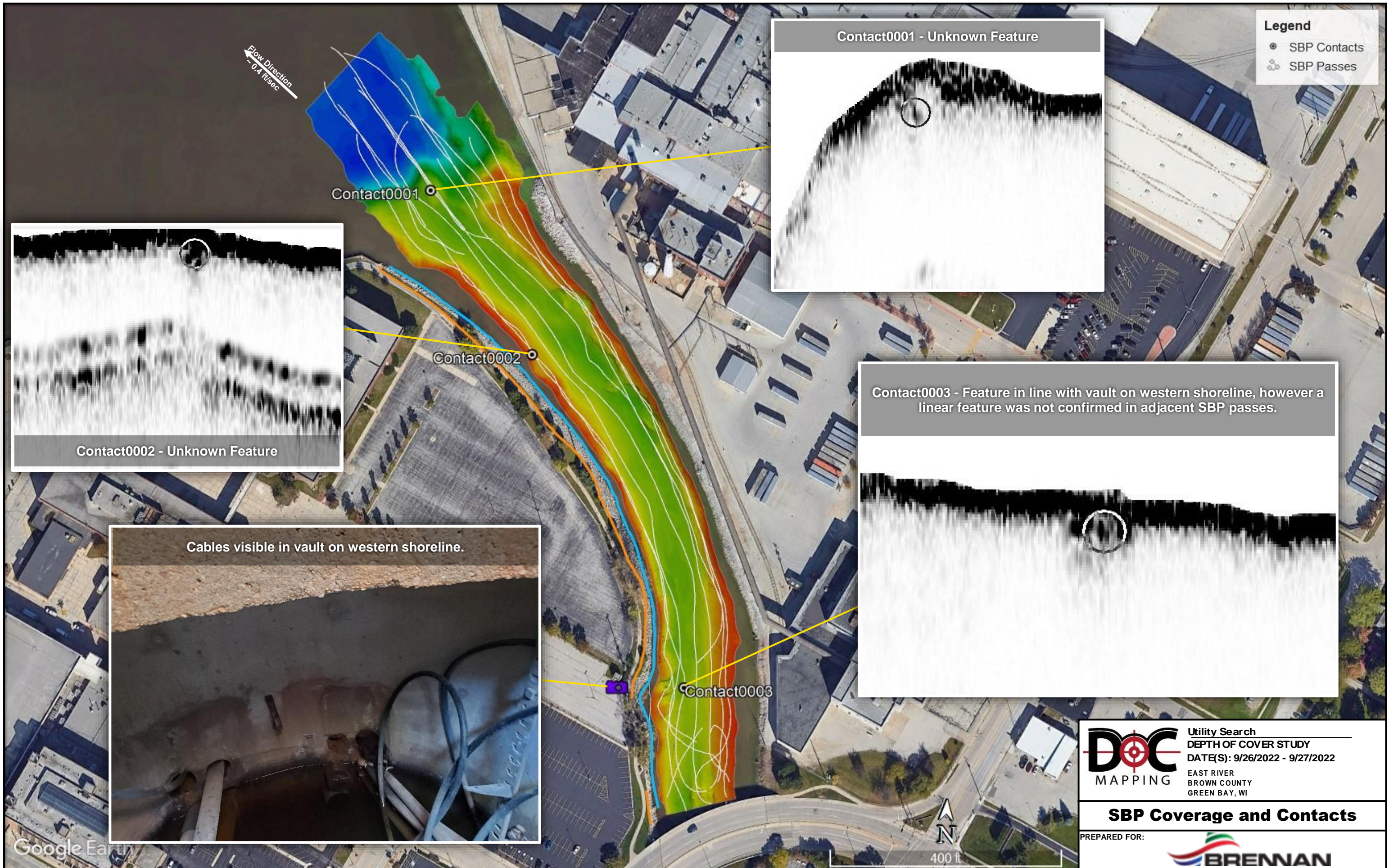
- ◊ Mag Anomalies
- Negative Mag Contours
- Positive Mag Contours

Where the Fiber Optic cable and abandoned gas lines are thought to cross the river there were several large spikes in mag data but due to overhead powerlines and metallic shoreline structures the noisy quality of the data made it impossible to pinpoint the buried utilities.

14 ◊ 20 ◊ 6
12 ◊ 10 ◊ 5

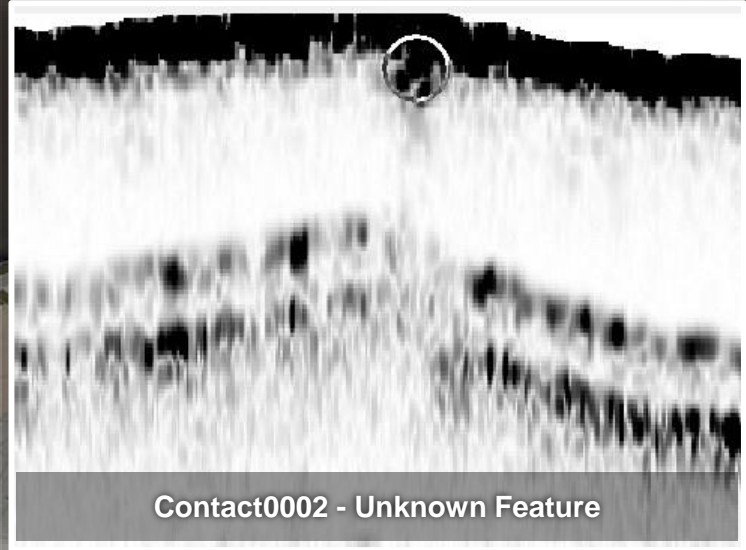
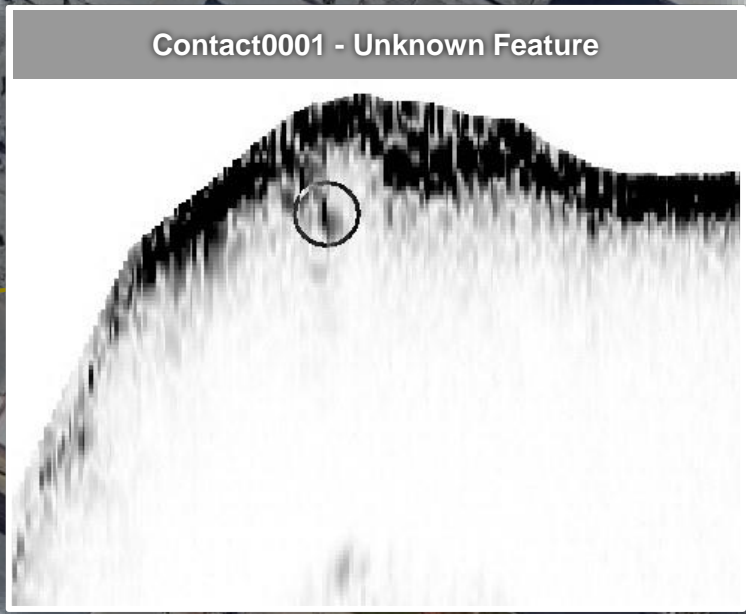
DOC **MAPPING** Utility Search
 DEPTH OF COVER STUDY
 DATE(S): 9/26/2022 - 9/27/2022
 EAST RIVER
 BROWN COUNTY
 GREEN BAY, WI

Mag Contours and Contacts
 PREPARED FOR: **BRENNAN**

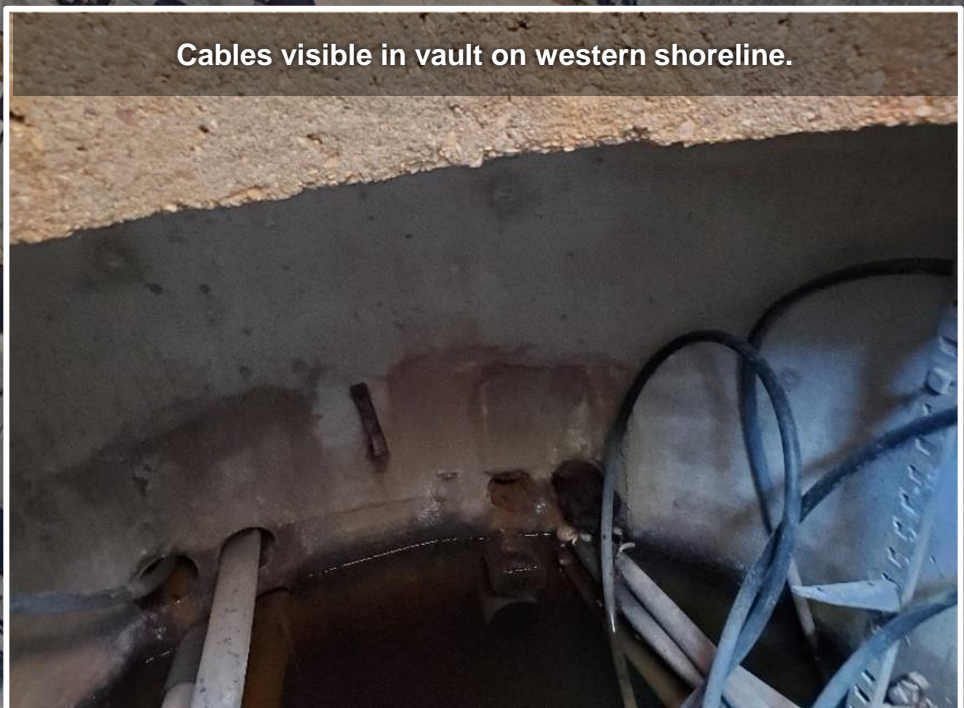
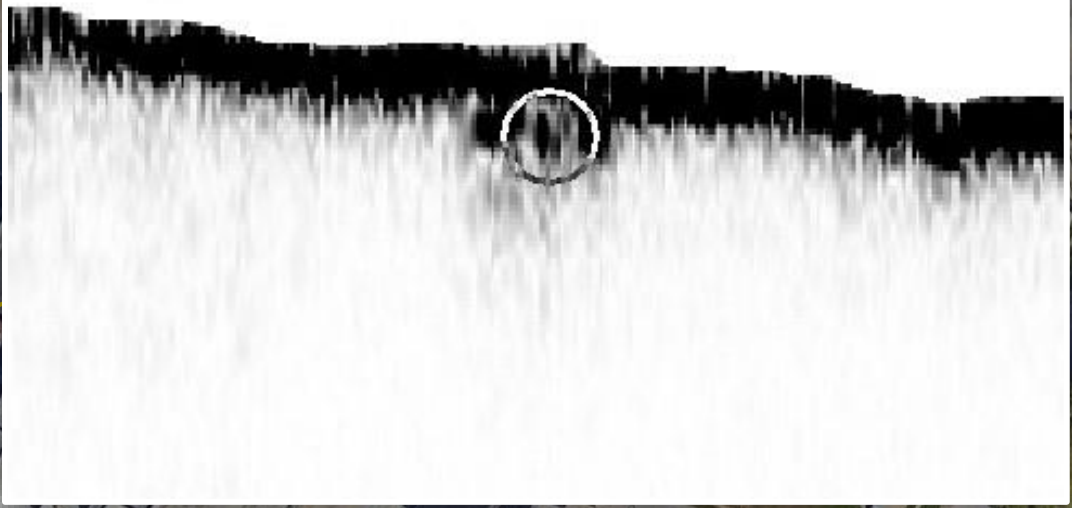


Legend

- SBP Contacts
- SBP Passes



Contact0003 - Feature in line with vault on western shoreline, however a linear feature was not confirmed in adjacent SBP passes.



DOC MAPPING Utility Search
 DEPTH OF COVER STUDY
 DATE(S): 9/26/2022 - 9/27/2022
 EAST RIVER
 BROWN COUNTY
 GREEN BAY, WI

SBP Coverage and Contacts

PREPARED FOR: **BRENNAN**

Appendix B

Control Point Verification Sheet

Job: East River – Bathymetric Survey and In-River/Submerged Utility Survey

Client: JF Brennan

Survey Date(s): 9/26/2022 - 9/27/2022

DoC Mapping's Geodetic Settings

Horizontal Datum & Zone: NAD83 - Wisconsin Central 4802

Geoid: NAVD88-GEOID12B (Conus)

Units: sft

Control Point Notes:

DoC Mapping established an OPUS control point ("OPUS") near the crossing site and using this point, established 2 additional control points ("CO10926" & "CO20926") in 2 different locations near the crossing site. These controls were referenced for base station setup during the time of this survey. See following page for the NGS OPUS Solution Report. The coordinates and elevations for these control points are as follows:

OPUS: Established on 9/26/2022 - 9/27/2022

Easting	Northing	Elevation
2488153.419	256499.156	585.022

CO10926: Established on 9/26/2022 - 9/27/2022

Easting	Northing	Elevation
2488123.884	256419.443	585.511

CO20926: Established on 9/26/2022 - 9/27/2022

Easting	Northing	Elevation
2488246.950	256113.443	584.656

FILE: JFB__26092022_141458.22o OP1664835032173

NGS OPUS SOLUTION REPORT

=====

All computed coordinate accuracies are listed as peak-to-peak values.
For additional information: <https://www.ngs.noaa.gov/OPUS/about.jsp#accuracy>

USER: matthew.smith@docmapping.com DATE:
October 03, 2022
RINEX FILE: jfb_269o.22o TIME: 22:11:59 UTC

SOFTWARE: page5 2008.25 [master252.pl](#) 160321 START: 2022/09/26 14:15:00
EPHEMERIS: igr22291.eph [rapid] STOP: 2022/09/26 17:14:00
NAV FILE: brdc2690.22n OBS USED: 7255 /
8029 : 90%
ANT NAME: HEMS321 NONE # FIXED AMB: 38 /
40 : 95%
ARP HEIGHT: 1.8288 OVERALL RMS: 0.015(m)

REF FRAME: NAD_83(2011)(EPOCH:2010.0000) ITRF2014
(EPOCH:2022.7360)

X: 158384.507(m) 0.002(m) 158383.527(m) 0.002(m)
Y: -4552541.593(m) 0.009(m) -4552540.264(m) 0.009(m)
Z: 4449527.589(m) 0.015(m) 4449527.530(m) 0.015(m)

LAT: 44 31 9.95070 0.004(m) 44 31 9.98026 0.004(m)
E LON: 271 59 33.13133 0.002(m) 271 59 33.08906 0.002(m)
W LON: 88 0 26.86867 0.002(m) 88 0 26.91094 0.002(m)
EL HGT: 142.073(m) 0.017(m) 141.060(m) 0.017(m)
ORTHO HGT: 178.315(m) 0.059(m) [NAVD88 (Computed using GEOID18)]

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 16) SPC (4802 WI C)
Northing (Y) [meters] 4930061.076 78181.099
Easting (X) [meters] 419935.446 758390.679
Convergence [degrees] -0.70642222 1.40588611
Point Scale 0.99967883 0.99995998
Combined Factor 0.99965656 0.99993770

US NATIONAL GRID DESIGNATOR: 16TDQ1993530061(NAD 83)

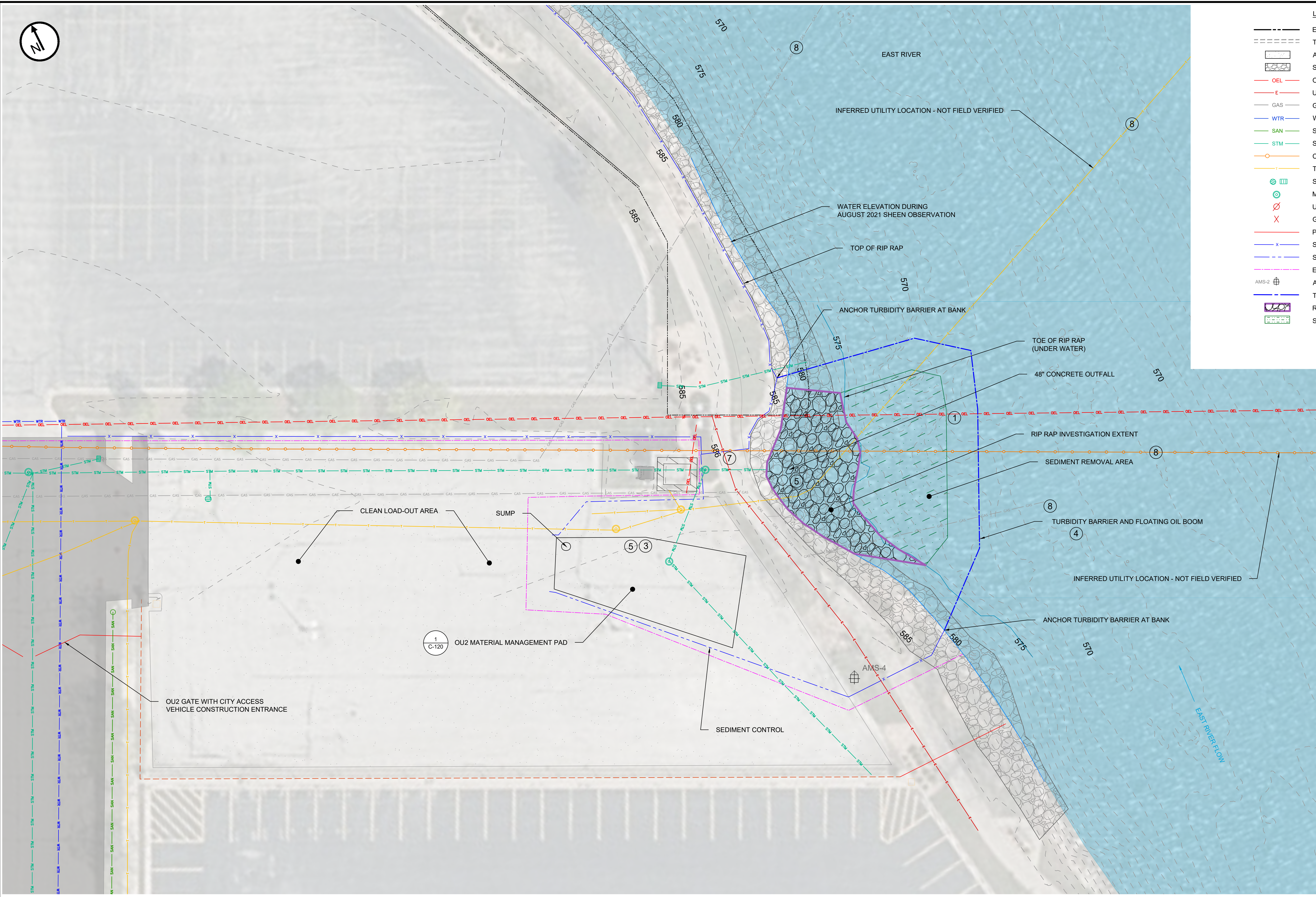
BASE STATIONS USED
PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
DO7033 WIAB ABRAMS CORS ARP N444727.298 W0880242.187 30316.5
DQ6734 WITG TIGERTON CORS ARP N444431.141 W0890234.338 85804.4
DQ3906 WMTW MANITOWOC CORS ARP N440915.441 W0874136.159 47684.3

NEAREST NGS PUBLISHED CONTROL POINT
DQ2563 5 255 A N443100004. W0880000021. 206.5

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

ATTACHMENT B – UPDATED SHEETS C-090 AND C-100

NOTE THAT REFERENCED SHEET C-120 HAS NOT BEEN MODIFIED FROM THE ERA WORK PLAN AND IS NOT INCLUDED HEREIN.



LEGEND:

- EASEMENT
- - - - TOPOGRAPHIC CONTOURS
- ASPHALT PAVEMENT
- SHORELINE RIP RAP
- OEL OVERHEAD ELECTRICAL
- UNDERGROUND ELECTRICAL
- GAS GAS LINE (ABANDONED)
- WTR WATER MAIN
- SAN SANITARY SEWER
- STM STORM SEWER
- COMMUNICATIONS (UNDERGROUND)
- TELEPHONE (UNDERGROUND)
- STORM SEWER CATCH BASIN / INLET
- MANHOLE (COLOR BY UTILITY TYPE AS INDICATED ABOVE)
- UTILITY POLE
- GUY WIRE
- PERIMETER FENCE (DASHED WHERE EXISTING)
- SILT FENCE
- SEDIMENT CONTROL (STRAW BALE OR OTHER)
- EXCLUSION ZONE
- AMS-2 AIR MONITORING STATION (AMS)
- TURBIDITY BARRIER WITH FLOATING OIL BOOM
- RIP RAP INVESTIGATION AND REMOVAL AREA
- SEDIMENT REMOVAL AREA

- CONTRACTOR NOTES:**
1. Locate and determine elevations of all underground utilities in and near work area. Use proper equipment to maintain clearance under overhead power lines.
 2. A September 2022 bathymetric survey is shown.
 3. Construct material management pad in WPS parking lot adjacent to OU2 sediment removal area per Sheet C-120
 4. Install turbidity barrier, per DNR technical standard 1069, using floatation logs, anchors every 50 feet and at corner, buoys and ballast chains as required due to utilities present, and attach floating oil adsorbent boom in river for sediment controls in river prior to any disturbance. Anchor each end of barrier at riverbank with concrete jersey barrier.
 5. Remove rip rap in designated area and transport to material management pad for decontamination using mechanical removal and pressure washing. Engineer to approve prior to re-use.
 6. OU2 removal area is not in the Federal Navigation Channel.
 7. Provide for Engineer review, a diversion plan to divert storm water from the City lift station to river outside the containment area.
 8. Utility location is approximate. Contractor shall field verify.

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

THIS DRAWING WAS PREPARED AT THE SCALE INDICATED. INACCURACIES IN THE STATED SCALE MAY BE INTRODUCED WHEN DRAWINGS ARE REPRODUCED BY ANY MEANS. USE THE GRAPHIC SCALE BAR TO DETERMINE THE ACTUAL SIZE. DRAWING IS NOT SCALABLE IF NO SCALE BAR IS PRESENT.

SOURCE:
 AERIAL IMAGERY: Brown County Imagery, 2022.
 SITE FEATURES: Existing Conditions from Terratec Survey, 2020, and WPS ALTA Survey, January 2021.
 BATHYMETRIC SURVEY: Brennan, October 2022.



CLIENT
WISCONSIN PUBLIC SERVICE CORPORATION

NO.	DATE	REVISION
1	01/31/2023	ISSUED FOR ERA WORK PLAN ADDENDUM 1
0	11/30/2022	ISSUED FOR CONSTRUCTION

DESIGNER / PROFESSIONAL ENGINEER RESPONSIBLE
JULIE A ZIMDARS, PE

DESIGNED BY: JAZ
 CHECKED BY: SLG
 DRAWN BY: JAZ
 INT: SAE

PROJECT NO: 1940101253
 DATE: JANUARY 2023

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

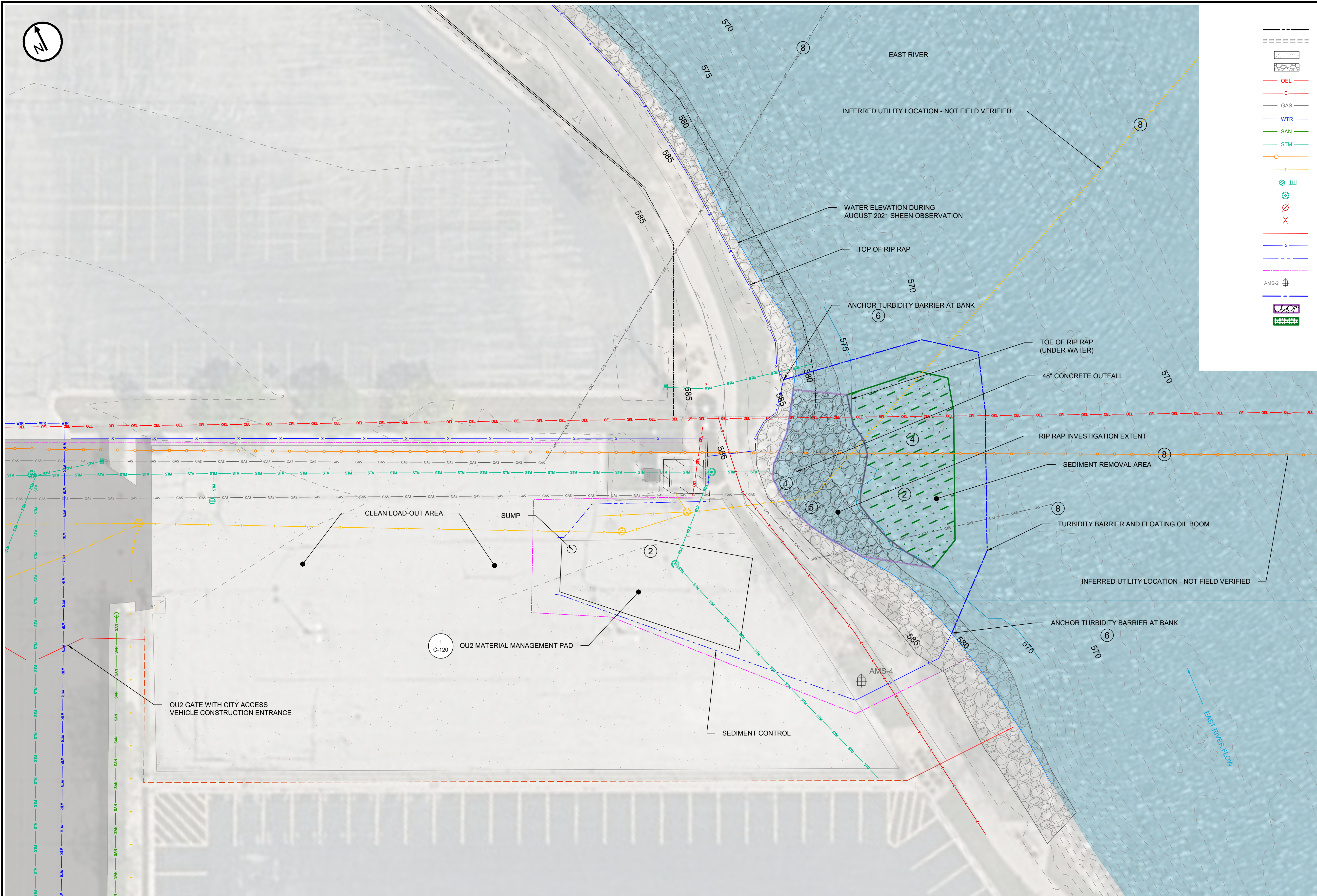
PROJECT
FORMER GREEN BAY MGP

ADDRESS
 GREEN BAY, WISCONSIN

SHEET DESCRIPTION
OU2 SEDIMENT CONTROLS AND RIPRAP REMOVAL PLAN

DRAWING LOCATION

C-090



LEGEND:

- EASEMENT
- - - - TOPOGRAPHIC CONTOURS
- ASPHALT PAVEMENT
- SHORELINE RIP RAP
- OEL OVERHEAD ELECTRICAL
- UNDERGROUND ELECTRICAL
- GAS GAS LINE (ABANDONED)
- WTR WATER MAIN
- SAN SANITARY SEWER
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- TELEPHONE (UNDERGROUND)
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- GUY WIRE
- PERIMETER FENCE(DASHED WHERE EXISTING)
- SILT FENCE
- SEDIMENT CONTROL (STRAW BALE OR OTHER)
- EXCLUSION ZONE
- AMS-2 AIR MONITORING STATION (AMS)
- TURBIDITY BARRIER WITH FLOATING OIL BOOM
- RIP RAP INVESTIGATION AND REMOVAL AREA
- SEDIMENT REMOVAL AREA

- CONTRACTOR NOTES:**
1. Remove 6 inches of bank soil material and all soft sediment below riprap removal area.
 2. Remove all soft sediment to hard bottom (approximately 6" to 18" thick), as directed by Engineer, in designated sediment removal area. Transport to material management pad for dewatering, drying and mixing to acceptable dried conditions for transport to the landfill.
 3. Utility off-sets may require contractor field adjustments to the removal extent.
 4. Backfill area with imported pea gravel from commercial quarry in areas and to elevations approved by Engineer.
 5. Place and anchor geotextile fabric on bottom and backfill riprap area with gravel from commercial quarry. Carefully replace riprap to similar sizing and configuration, elevation and location as previous.
 6. Remove adsorbent booms and turbidity barrier.
 7. OU2 removal area is not in the Federal Navigation Channel.
 8. Utility location is approximate. Contractor shall field verify.

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 SITE FEATURES: Existing Conditions from Terratec Survey, 2020, and WPS ALTA Survey, January 2021.
 BATHYMETRIC SURVEY: Brennan, October 2022.



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JULIE A ZIMDARS, PE

DESIGNED BY: JAZ
 CHECKED BY: SLG
 DRAWN BY: JAZ
 INT: SAE

PROJECT NO: 1940101253
 DATE: JANUARY 2023

RAMBOLL AMERICAS ENGINEERING SOLUTIONS, INC.

PROJECT
FORMER GREEN BAY MGP

ADDRESS
 GREEN BAY, WISCONSIN

SHEET DESCRIPTION
OU2 INVESTIGATION AND SEDIMENT REMOVAL PLAN

DRAWING LOCATION

C-100

**ATTACHMENT C – DOCUMENTING DNAPL WHILE DREDGING IN
NFA**

TO: Bjorn Lysne, TetraTech
FROM: Staci Goetz, OBG, Part of Ramboll
RE: Documenting DNAPL while Dredging in NFA
FILE: 67983
DATE: June 28, 2019

cc: Robert Paulson, WPSC
 Dustin Bauman, J.F. Brennan

OBG, Part of Ramboll (OBG) provided engineering services to Wisconsin Public Service Corporation (WPSC) in support of remedial design for an early action removal of sediments at the Former Green Bay Manufactured Gas Plant North Focus Area (NFA). These support services were provided in anticipation of advancing the site through the remedial investigation (RI) and feasibility study (FS) process. A Sampling and Analysis Plan (SAP) was prepared and submitted to TetraTech and AnchorQEA for inclusion as Appendix N in the Addendum to the Final 2019 Update to Phase 2B Remedial Action Work Plan – Manufactured Gas Plant North Focus Area Report.

During a North Focus Area Work Group meeting held June 4, 2019, the Agency Oversight Team (A/OT) requested information regarding details of documenting dense non-aqueous phase liquid (DNAPL) observations during dredging. On June 7, 2019, the Lower Fox River Remediation (LFRR) LLC's engineer, Tetra Tech, provided a status map of where poling operations were to be conducted outside the safe dredge elevation (SDE) footprint but that was not the detail the A/OT sought. A teleconference was held on June 10 to clarify the A/OT request. The purpose of this memorandum is to clarify the procedures that will be followed by the LFRR, their contractor J.F. Brennan, and OBG to coordinate and document visual observation of DNAPL during dredging.

Section 2.3 **SEDIMENT AND CLAY SAMPLING METHODS** of the SAP describes the quality assurance procedures to confirm dredging is complete in the area outside the SDE, prior to chemical sample collection. The primary confirmation tools are bathymetric survey, visual confirmation cores collected on a dense approximate 15-foot grid, and visual bucket inspections. Section 2.3.1.2 **Outside the SDE Footprint** further describes the remedial action is designed to remove all soft sediment outside of the SDE area via dredging.

J.F. Brennan will collect visual confirmation cores once dredging has attained target elevations outside the SDE, anticipated to be on an every other day schedule beginning July 8, 2019, in Stage 2 areas. J.F. Brennan will provide notification to OBG and A/OT personnel the day prior to second pass dredging operations outside of the SDE. In areas outside the SDE where a second dredging pass is necessary to achieve final elevation, an OBG representative will visually inspect the cores and document soft sediment and DNAPL removal. In areas where a second dredging pass is not necessary to achieve final elevations and an OBG representative is not present, visual confirmation cores will be collected and taken to the Pulliam off-loading facility for inspection by OBG. Like the procedures followed during the South Focus Area Remedial Action, cores will be photographed, observations noted, locations recorded, and results will be shared with A/OT daily via the project FTP site.

In addition to visual confirmation cores, visual observations of buckets will be completed during final pass operations to identify if significant visual DNAPL remains. The final pass bucket DNAPL observations will be completed after the targeted dredge elevation has been achieved at the end of Stage 3 dredging. Figure 1 illustrates the proposed visual observation frequency and locations. Eleven locations are preselected (See Figure 1) and 14 additional bucket locations will be selected and may be located at **random** between Boring Row-4 and Boring Row-5 where the dredge will remove a bucket representing a sample of clay below the final target dredge elevation for visual observation. Based on these visual observations the representatives of WPSC and the Agencies will confirm whether the sampled clay contains significant visual DNAPL. Should these representatives conclude that the sample clay contains significant visual DNAPL, additional dredging will be performed until the representatives determine that the additional dredging has removed significant visual DNAPL in the **immediate vicinity** of the sample to extent practicable. See the procedure described below outlining dredging in the immediate vicinity. If significant visual DNAPL sediment remains in-place after dredging in the immediate vicinity beyond the targeted dredge elevation, then the resolution to this significant visual DNAPL will be collaboratively addressed with the Agencies in the field so as not to delay production.

Procedure for Dredging in the Immediate Vicinity

(This procedure was developed and agreed to at the Thursday (June 27th) 10:30 AM Joint PCB/MGP meeting.)

When the representatives conclude that a bucket of sample clay is observed to have significant visual DNAPL and additional dredging is necessary in the immediate vicinity, the following steps will be followed:

1. One bucket deeper will be collected from the same location to observe DNAPL at depth below the original bucket sample;
2. One bucket will be collected in each remaining cardinal direction stepping out one bucket-width from the original bucket sample; and
3. If a bucket sample collected from one of the cardinal primary step-out locations contains significant visual DNAPL, then repeat steps 1 and 2.
4. If after repeating steps 1 and 2 significant visual DNAPL is still observed, then a collaborative discussion will be held with the A/OT representative on the barge to determine how to proceed.

A schematic illustration is shown below in Figure 2 to demonstrate the sample step-out process in plan-view.

Figure 2a Sample step-out scheme for "significant visual DNAPL observation" scenario

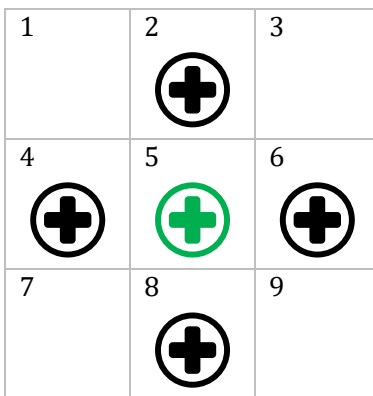


Figure 2b Sample step-out scheme for "significant visual DNAPL in step-out location" scenario

