



**Stantec Consulting Services Inc.**  
12080 Corporate Parkway, Suite 200  
Mequon WI 53092-2661

December 2, 2022  
File: 193707141

**Attention: Mr. Joseph Graham**  
Contaminated Sediments Specialist  
Wisconsin Department of Natural Resources  
Northern Region, Spooner Service Center  
810 West Maple Street  
Spooner, Wisconsin 54802-1255

**Reference: Response to Request for Additional Information #2; Materials Management Plan and Ch. NR 718 Exemption Request for C. Reiss Coal Dock Property, Superior, Wisconsin, BRRTS Case No. 02-16-589248**

Dear Mr. Graham:

During July 2022, Stantec Consulting Services Inc. (Stantec) submitted a *Materials Management Plan and Chapter NR 718 Exemption* (the MMP; Stantec [2022a]) outlining future soil management activities to be completed as part of industrial redevelopment of the C. Reiss Coal Dock Property in Superior, Wisconsin (the Property) to the Wisconsin Department of Natural Resources (WDNR) for review and approval. The WDNR responded via email on August 12, 2022 with a request for additional information; Stantec supplied this additional information in their *Response to Request for Additional Information* letter submittal dated October 11, 2022 (Stantec, 2022b), and provided an updated version of the Stantec MMP dated October 14, 2022 (Stantec, 2022c) to reflect these revisions.

Following review of the updated Stantec (2022c) MMP, WDNR responded via email on November 9, 2022 with a request for additional clarification on (10) items. These items were further discussed in teleconferences between WDNR and Stantec on November 11, 2022 and November 16, 2022, with particular emphasis on the items most critical to WDNR's understanding of geotechnical and hydrogeological evaluations for the proposed Property construction. To address this, Stantec prepared this letter which provides the WDNR's requests in underlined bold italicized text, followed by Stantec's response for each item. Please use the information provided in this letter to approve the approach described in the updated Stantec (2022c) MMP.

**1. Expand geotechnical evaluation to assess the impacts of placing significant volumes of material on site – what is the bearing capacity of site soils to sustain this additional load?**

**Response:** Stantec prepared an *Evaluation of Geotechnical and Hydrogeological Conditions* memo dated December 1, 2022 (Stantec, 2022d) to further evaluate the geotechnical and hydrogeological impacts for construction as proposed at the Property; this memo is included as **Attachment I**. As described in Stantec (2022d), the maximum load from the disposal berm which will be applied to the underlying soils is based on a pile height of approximately 29 feet. Lithology beneath the disposal berm generally consists of a surficial granular fill layer with an average thickness of three feet, and fat clay alluvium to an average depth of 19 feet below grade underlain by dense silty sand alluvium.

Using information from geotechnical borings performed by American Engineering Testing (AET) in July 2022 and documented in their *Report of Geotechnical Exploration* for the C. Reiss Coal Dock Development dated August 22, 2022 (AET, 2022), the total anticipated settlement at the crest of the disposal berm is estimated to be between 12 to 18 inches, tapering to zero settlement at the edges of the disposal berm. The majority of this settlement is estimated to occur gradually over the course of 10 years, with 75% of total

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consolidation (representing approximately 14 inches) occurring by that time. Based on the lithologic observations of Property soils, this settlement would largely occur in the upper clay layer, rather than in the dense silty sand alluvium below which has minimal settlement potential in this proposed loading scenario. Therefore, the effect of proposed loading from the placement of the disposal berm to the sand and silty sand soils beneath the clay layer is anticipated to be minimal.

**2. The RR grade and stormwater pond call for excavating site soils, extending into the confining clay layer, and potentially breaching the clay layer. This, combined with the placement of large volumes of soil and sediment adjacent to these excavated areas, could impact the hydrogeologic conditions at the site. There needs to be an evaluation of both the geotechnical and hydrogeological aspects of the proposed excavation and placement of material. To what extent will the proposed activities impact groundwater conditions, including the migration of contaminated groundwater and LNAPL? Do you anticipate the potential migration of contaminated groundwater and LNAPL to the surface in excavated areas? In what other ways will site hydrogeological conditions be impacted by the proposed placement and excavation of material?**

**Response:** As there are multiple considerations involved with these questions/comments, this response is broken out to discuss the hydrogeological and geotechnical considerations per project feature below:

Disposal Berm Placement. As discussed in the Stantec (2022d) *Evaluation of Geotechnical and Hydrogeological Conditions* memo included as **Attachment I**, the light non-aqueous phase liquid (LNAPL) “finger plume” present on the Property is confined to the water-bearing sand/silty sand unit beneath the overlying clay (the interface for which is present approximately 15 to 20 feet below current grade). As discussed in Response #1, the loading from the placement of the disposal berm to the underlying sand/silty sand unit (containing the LNAPL) is considered to be minimal, as consolidation will preferentially occur in the overlying clay. LNAPL will therefore not mobilize vertically or laterally as a result of the placement of the disposal berm, since available pore space/pore pressure will remain unchanged.

Proposed Excavations. Considerations pertaining to breaching the clay layer and encountering impacted groundwater and/or LNAPL as part of proposed Property excavations are discussed below.

**Contaminated Groundwater/LNAPL.** As previously discussed in Response #20 of the Stantec (2022b) *Response to Request for Additional Information*, the maximum depth of cut is above the groundwater table across the majority of the Property. The exceptions to this are in areas of deepest excavation on the Property corresponding to the proposed stormwater pond and portions of the railroad cut east of the stormwater pond. No LNAPL or contaminated groundwater is anticipated to be encountered as part of proposed Property excavations, including in the areas where the groundwater table will be intercepted (Station 9+78 through Station 19+50 on **Figures 7 and 8**). As later mentioned in Response #3, **Figures 7 and 8** have been updated to include groundwater quality information on the east-adjointing (upgradient) property, and include relevant laser induced fluorescence (LIF) data in areas near proposed excavations on the Property as part of construction. This information provides evidence that the LNAPL plumes present along the east-adjointing property (north of the “finger plume”) are limited in nature and are not anticipated to impact proposed Property excavations (refer to cross sections represented by Stations 9+78, 11+75, 13+73, and 21+20 on **Figure 8**).

**Clay unit.** The cross sections provided on **Figure 8** have been updated to illustrate the approximate depth/thickness of the clay unit present across the Property and depth of the underlying sand/silty sand based on available lithologic information collected by Stantec and others (AET, Antea Group

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[Antea] to date. As illustrated on **Figure 8**, the maximum depth of cut is above the clay/sand interface for the majority of proposed Property redevelopment. The only areas where the proposed excavations will breach the clay unit and extend approximately 1 to 1.5 feet into the underlying sand/silty sand are at Stations 11+75 and 15+10. This area is far north of the LNAPL finger plume, and west of the smaller LNAPL plumes on the east-adjointing Property which (as discussed above) are limited in nature and not anticipated to impact proposed property excavations. Therefore, no mobilization of LNAPL or contaminated groundwater is anticipated as part of proposed Property excavations.

Present-Day LNAPL Conditions. Based on available LIF data collected to date by Antea, LNAPL (where present) is observed to be vertically distributed within thin, discrete zones, approximately one to five feet thick and directly beneath the clay confining layer (Antea, 2019). LNAPL thickness in monitoring wells has been observed by Antea to be stable or decreasing. As summarized in the most recent Antea 2021 *Annual Progress Report*, the Phase II recovery system for the LNAPL finger plume has operated for approximately 10 years and is approaching asymptotic recovery (Antea, 2022). As discussed in the Stantec (2022d) memo (**Attachment I**), this condition is indicative of low LNAPL saturation in the subsurface and further supports that there is low risk of migration from proposed Property construction activities.

**3. Contaminated groundwater and LNAPL on the adjacent property to the east are not shown in figures 7 & 8.**

**Response:** **Figures 7 and 8** have now been updated to include available groundwater and LNAPL information on the parcels adjacent to the Property (including the east-adjointing property) and are included as attachments to this submittal.

As discussed in Response #2, LIF data available for the Property in areas near the smaller LNAPL plumes present along the east-adjointing property (north of the “finger plume”) have also been added to **Figures 7 and 8** to illustrate that LNAPL impacts from these smaller plumes are limited in nature and are not anticipated to impact Property construction.

**4. Provide additional clarification on the contact of contaminated materials with rainwater and management of that water prior to cover completion.**

**Response:** During construction, contaminated materials will be placed in the middle of the disposal berm. If rainwater that contacts the contaminated soil during construction and placement accumulates and needs to be pumped, it would be pumped through a filter bag to the stormwater pond, and any sediment in the bag would be placed back on the contaminated soil pile.

**5. The degree and extent of contamination needs to be defined for the high PAH soil concentrations near the proposed stormwater pond (e.g., STN9 and STN10) and the high arsenic location (STN20). Accordingly, DNR is considering conditional approval of the site investigation report.**

**Response:** Stantec appreciates conditional approval of *Site Investigation Report* for the Property dated July 8, 2022 (Stantec, 2022e), and understands that in the future WDNR will seek further definition of 1) the elevated polycyclic aromatic hydrocarbon (PAH) concentrations in the vicinity of STN9 and STN10 near the proposed stormwater pond; and 2) the elevated arsenic present at STN20 on the north end of the Property. The degree and extent of contamination in these areas will be assessed concurrent with Property construction (PAH contamination, for example, may be assessed as part of the proposed pond excavation; refer to Response #6 below), and/or following construction.

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**6. High PAH soil concentrations (e.g., STN9 and STN10) may need to be segregated within the disposal berm or disposed off-site.**

**Response:** As discussed in Response #30 of the Stantec (2022b) *Response to Request for Additional Information*, the elevated PAH concentrations in STN9 and STN10 are attributed to the coal-bearing fill materials, with underlying native soils having no PAH concentrations greater than ch. NR 720 Wis. Admin Code (NR 720) residual contaminant levels (RCLs). Both sample locations are briefly summarized below:

- STN9 was performed within the proposed swale south of the proposed stormwater pond and was found to have black, granular fill materials and brick pieces present to a depth of 2.5 feet below current grade, underlain by silty sand.
- STN10 was performed on the western end of the proposed stormwater pond in an area of concrete and was found to have black, granular fill materials and concrete present to a depth of approximately 6 feet below current grade, underlain by clayey sand.

Based on input from WDNR in the November 2022 teleconferences, the fill materials exhibiting elevated PAH concentrations excavated in the area of STN9 and STN10 will be restricted to placement in the east-adjacent disposal berm where PAH concentrations greater than NR 720 industrial direct contact RCLs already exist. **Figure 13** (attached) illustrates the area where this material may be placed. Placement of underlying (unimpacted) native soils from these locations will not be subject to this restriction. Note that since the stormwater pond is the first feature proposed to be constructed at the Property, impacted materials excavated will be placed as the first (lowest) lifts of the disposal berm in the area illustrated on **Figure 13**, to ultimately be managed by the engineered barrier.

**7. The soil quality – profile view in Figure 11 is distorted since the cross-section excludes locations STN9 and STN10 with the highest PAH contamination levels.**

**Response:** **Figure 11** has been updated to include a section view through STN9 and STN10 as C – C' for clarity pursuant to this request and displays contaminant trends consistent with sections A – A' and B – B' (with PAH impacts at concentrations greater than NR 720 industrial direct contact RCLs limited to fill, and with no such impacts to underlying native soils).

**8. A more frequent inspection frequency of the cap may be needed to ensure the integrity of the cap is maintained over the contaminated materials.**

**Response:** An updated Draft Cover Maintenance Plan is included as **Attachment D** of this submittal, and will be inspected per the following schedule:

- Four times per year (quarterly) for the first (2) years following construction;
- Twice per year for the following (3) years; and
- Once per year (annually) for each year beyond.

**9. Dredging sheet C-103 (30%) appears to show a culvert entering the stormwater pond from the ditch adjacent to the railroad grade. This feature is not shown on other sheets. Is a hydrological connection between the ditch and stormwater pond be needed and will a culvert be installed where shown on sheet C-103 (pdf page 192 of 535 in Stantec response)?**

**Response:** The culvert entering the stormwater pond from the ditch adjacent to the railroad depicted on Dredging Sheet C-103 of the 30% Preliminary plan submitted as part of the Stantec (2022b) *Response to*

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*Request for Additional Information* was depicted in error, as this feature has since been removed as project planning has progressed. An updated Dredging Sheet C-103 (90% Preliminary plan) is included as **Attachment A**. With construction as proposed, no hydrological connection between the ditch and stormwater pond is needed.

**10. The MMP emphasizes the definition of impervious surfaces for runoff management under NR 151.002(17) which is not analogous to a low permeability cover for environmental contamination.**

**Response:** It is noted that “impervious” surfaces as defined in ch. NR 151 Wis. Admin Code are not directly analogous to a low permeability cover for environmental contamination. However, Stantec believes that Response #29 of the Stantec (2022b) *Response to Request for Additional Information* provides sufficient evidence that the gravel access roads, disposal berm and rail spur subgrade would provide low permeability cover based on the type of materials coupled with their compaction requirements.

Thank you for your continued assistance with this project. We look forward to working with you as redevelopment activities associated with this project move forward. Please do not hesitate to contact us with any questions related to this request.

Regards,

**STANTEC CONSULTING SERVICES INC.**



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cc: Christian Zuidmulder; C. Reiss  
Erin Endsley, John Hunt, Christopher Saari, John Sager; WDNR

Reference: Response to Request for Additional Information #2: Materials Management Plan and Ch. NR 718 Exemption Request for C. Reiss Coal Dock Property, Superior, Wisconsin, BRRTS Case No. 02-16-589248

### References:

AET (2022). Report of Geotechnical Exploration, C. Reiss Dock Development, St. Louis Bay, Superior, Wisconsin, August 22, 2022.

Antea (2019). Technical Memorandum #2: Boring Logs, Well Construction, and LIF/CPT Compilation Part II: Former Amoco Manifold and AST Area, 2904 Winter Street, Superior, WI 54880, BRRTS #02-16-117873, October 25, 2019.

Antea (2022). 2021 Progress Report, January – December 2021, Former Amoco Terminal, 2904 Winter Street, Superior, WI, February 8, 2022.

Stantec (2022a). Materials Management Plan and Chapter NR 718 Exemption, C. Reiss Coal Dock Property, Superior, Wisconsin, WDNR BRRTS # 02-16-589248, Facility ID # 816130810, July 6, 2022.

Stantec (2022b). Response to Request for Additional Information; Materials Management Plan and Ch. NR 718 Exemption Request for C. Reiss Coal Dock Property, Superior, Wisconsin, BRRTS Case No. 02-16-589248, October 11, 2022.

Stantec (2022c). Updated Materials Management Plan and Chapter NR 718 Exemption, C. Reiss Coal Dock Property, Superior, Wisconsin, WDNR BRRTS # 02-16-589248, Facility ID # 816130810, October 14, 2022.

Stantec (2022d). Evaluation of Geotechnical and Hydrogeological Conditions; Proposed C. Reiss Coal Dock Property, Superior, WI BRRTS Case No. 02-16-589248, December 1, 2022.

Stantec (2022e). Site Investigation Report, C. Reiss Coal Dock Property; Superior, Wisconsin, WDNR BRRTS Number: 02-16-589248 C Reiss Coal Dock Property, July 8, 2022.

### Enclosures (numbered to maintain continuity with prior work)

#### **Figures**

Figures 1-6: *Refer to Stantec (2022c) MMP; not included in this letter*

Figure 7: Groundwater Plan View\*

Figure 8: Groundwater Cross Section Details\*

Figures 9-10: *Refer to Stantec (2022c) MMP; not included in this letter*

Figure 11: Soil Quality – Profile View\*

Figure 12: *Refer to Stantec (2022c) MMP; not included in this letter*

Figure 13: Proposed Segregation of Elevated PAHs in Soil†

#### **Attachments**

Attachment A: Redevelopment Plans (Dredge Sheet C-103)\*

*Attachments B-C: Refer to Stantec (2022c) MMP; not included in this letter*

Attachment D: Draft Cap Maintenance Plan\*

*Attachments E-H: Refer to Stantec (2022c) MMP; not included in this letter*

Attachment I: Evaluation of Geotechnical and Hydrogeological Conditions Memo†

\* = This item has been updated from the previous Stantec (2022c) MMP submittal and is attached to this letter.

† = This item was not previously part of the Stantec (2022c) MMP submittal and is attached to this letter.

# FIGURES









GROUNDWATER CROSS SECTION DETAIL

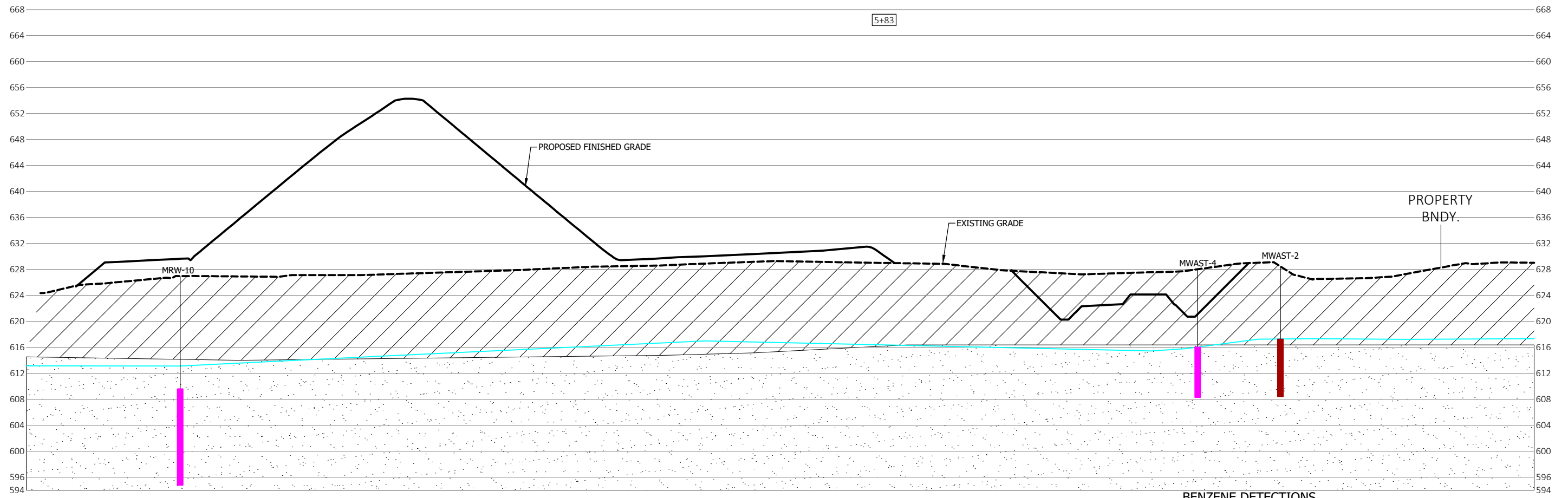
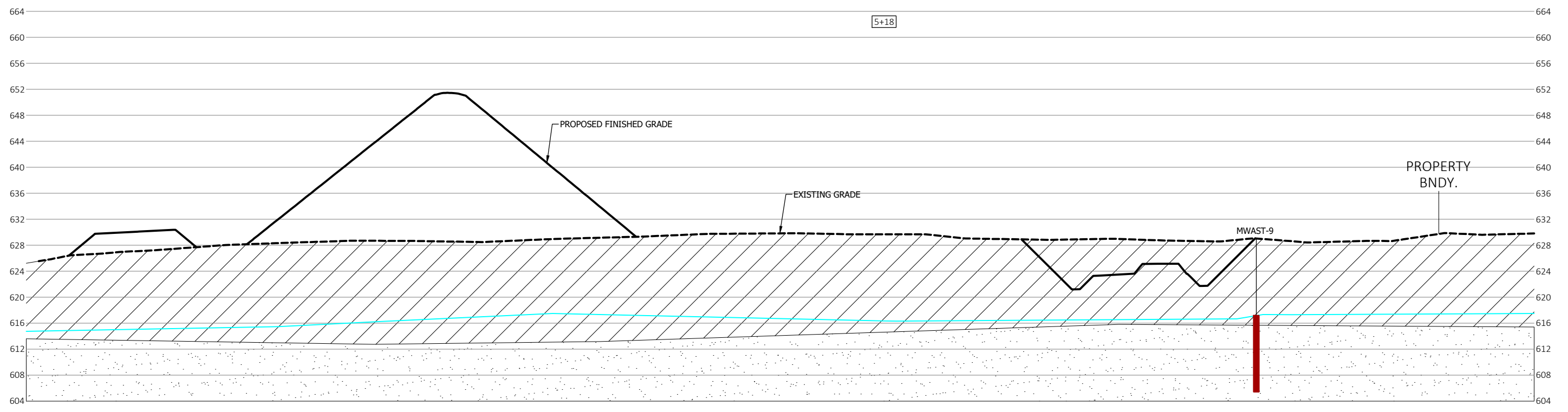
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 C. REISS COMPANY, LLC  
 ST. LOUIS BAY, SUPERIOR, WI



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
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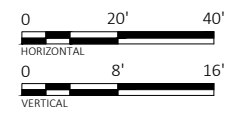
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**FIG. 8C**



— APPROXIMATE GROUNDWATER TABLE  
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 SAND/SILTY SAND

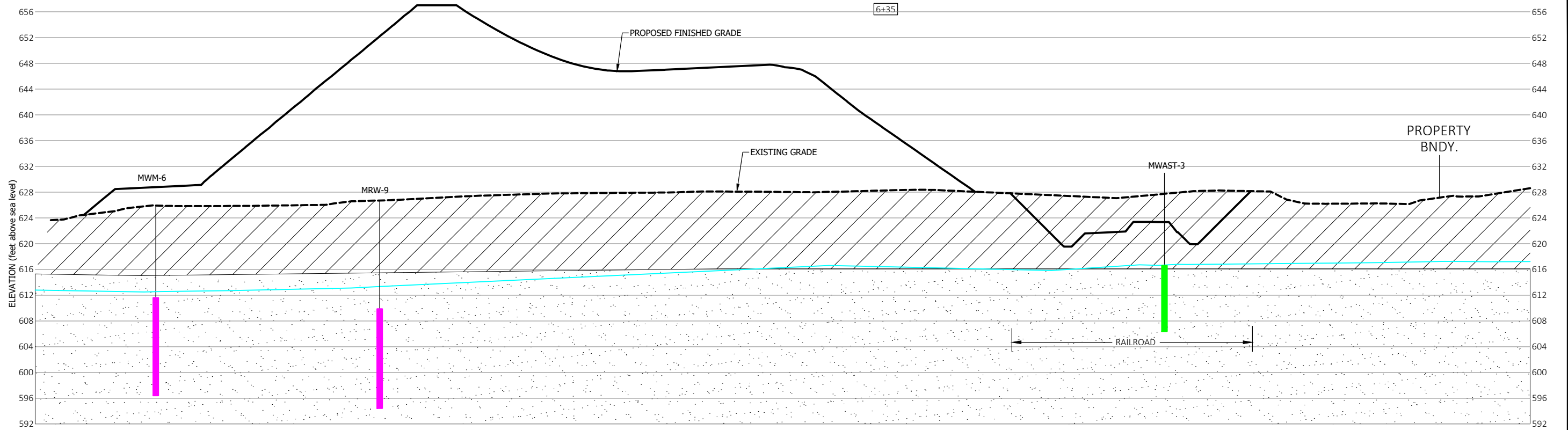
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 FREE PRODUCT PRESENT  
 LIF SAMPLE (NO LNAPL)




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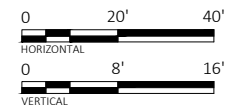
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-  APPROXIMATE GROUNDWATER TABLE
-  CLAY
-  SAND/SILTY SAND

- BENZENE DETECTIONS**
-  <PAL, OR NOT DETECTED
  -  >PAL
  -  >ES
  -  FREE PRODUCT PRESENT
  -  LIF SAMPLE (NO LNAPL)

 COLOR REPRESENTS NR 140 EXCEEDANCE OR PRESENCE OF PRODUCT WITHIN SCREENED INTERVAL AND IS NOT INDICATIVE OF ACTUAL THICKNESS.



GROUNDWATER CROSS SECTION DETAIL

C. REISS DOCK  
 C. REISS COMPANY, LLC  
 ST. LOUIS BAY, SUPERIOR, WI

DATE OF ISSUANCE  
 NOVEMBER 18, 2022

NO	REVISION	DATE

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DRAWN	AJR
DESIGNED	AJR
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**FIG. 8D**



GROUNDWATER CROSS SECTION DETAIL

C. REISS DOCK  
 C. REISS COMPANY, LLC  
 ST. LOUIS BAY, SUPERIOR, WI

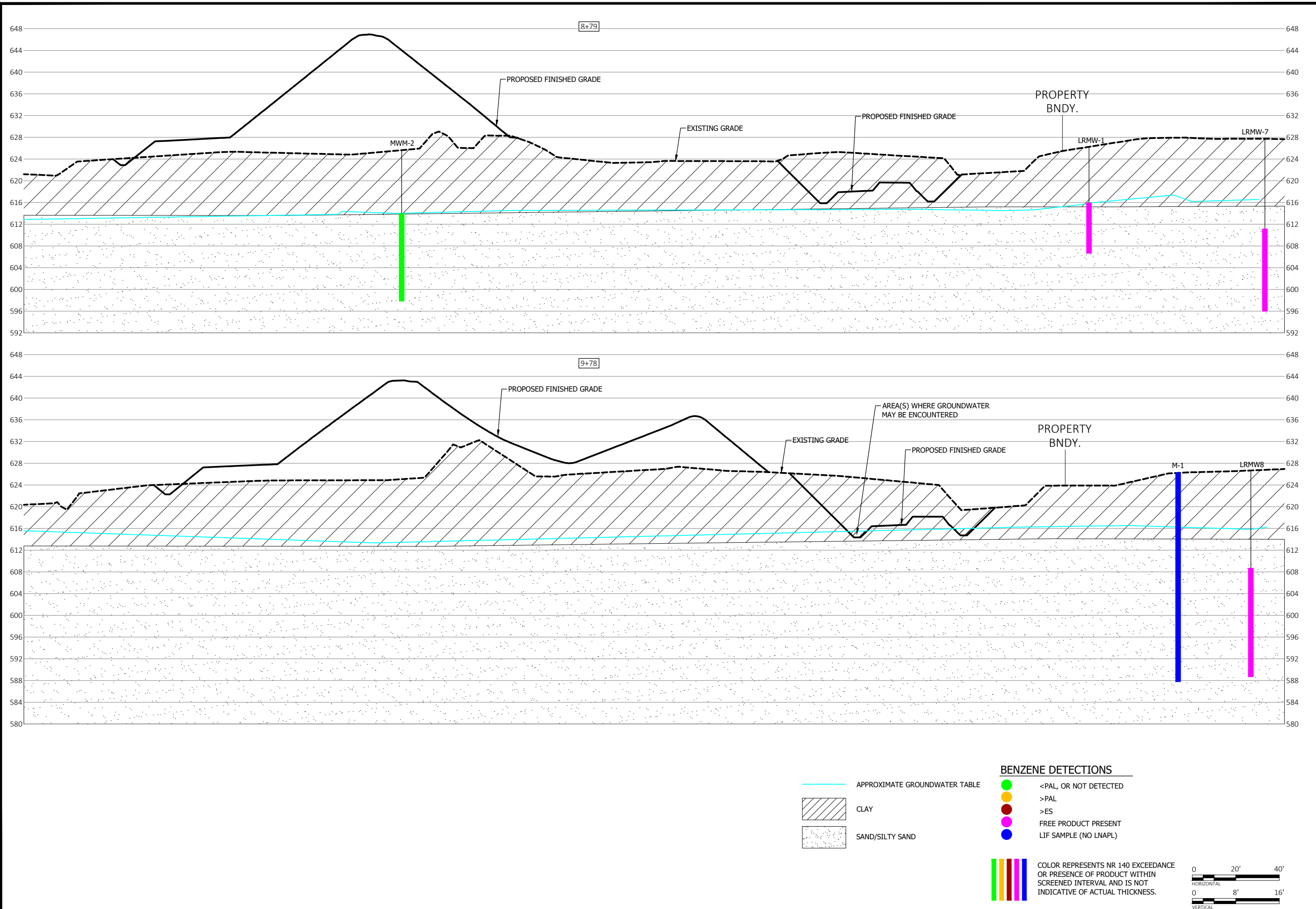
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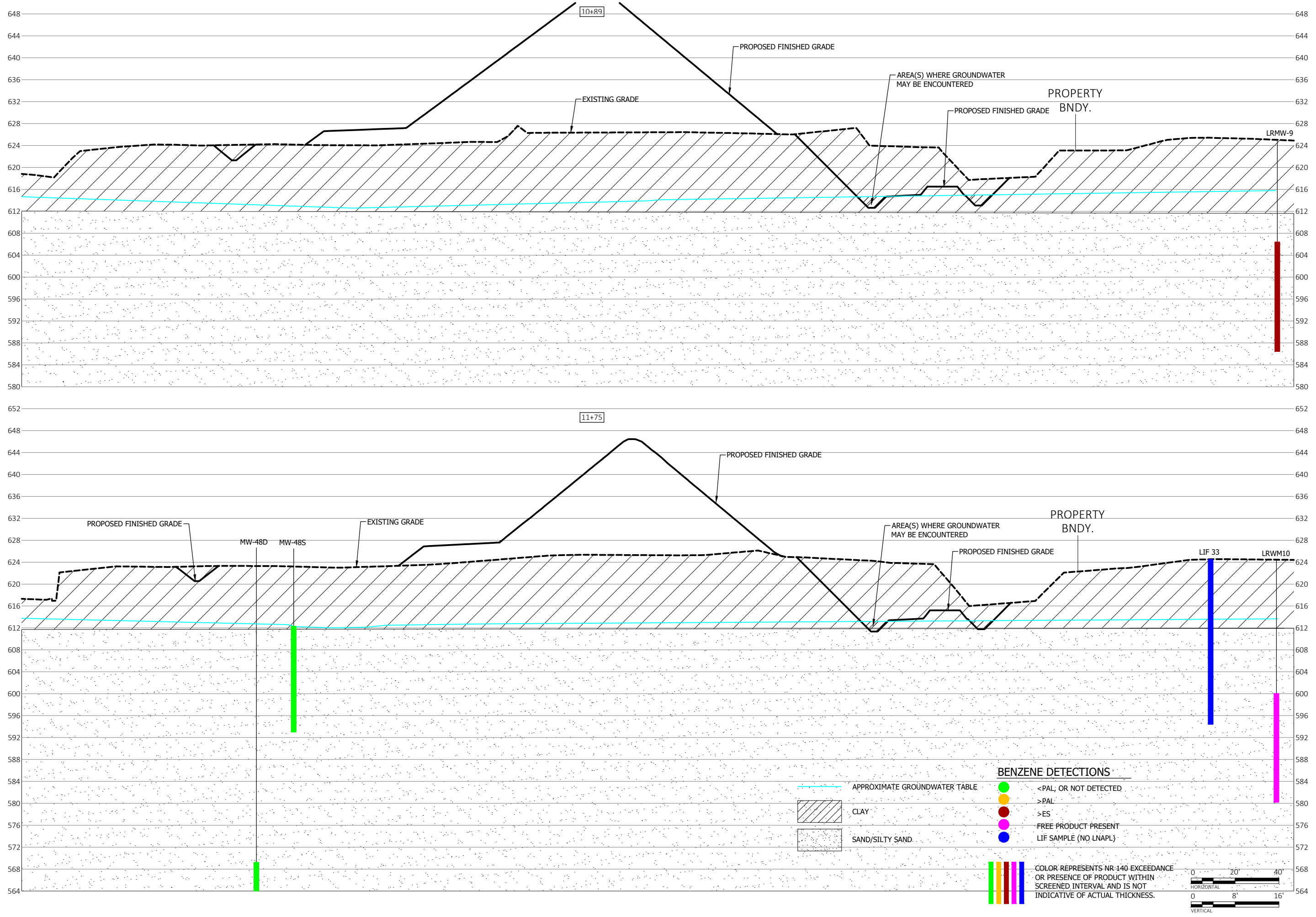
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**FIG. 8F**



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**BENZENE DETECTIONS**

- <PAL, OR NOT DETECTED
- >PAL
- >ES
- FREE PRODUCT PRESENT
- LIF SAMPLE (NO LNAPL)

COLOR REPRESENTS NR-140 EXCEEDANCE OR PRESENCE OF PRODUCT WITHIN SCREENED INTERVAL AND IS NOT INDICATIVE OF ACTUAL THICKNESS.

APPROXIMATE GROUNDWATER TABLE

CLAY

SAND/SILTY SAND

0 20' 40'  
HORIZONTAL

0 8' 16'  
VERTICAL

GROUNDWATER CROSS SECTION DETAIL

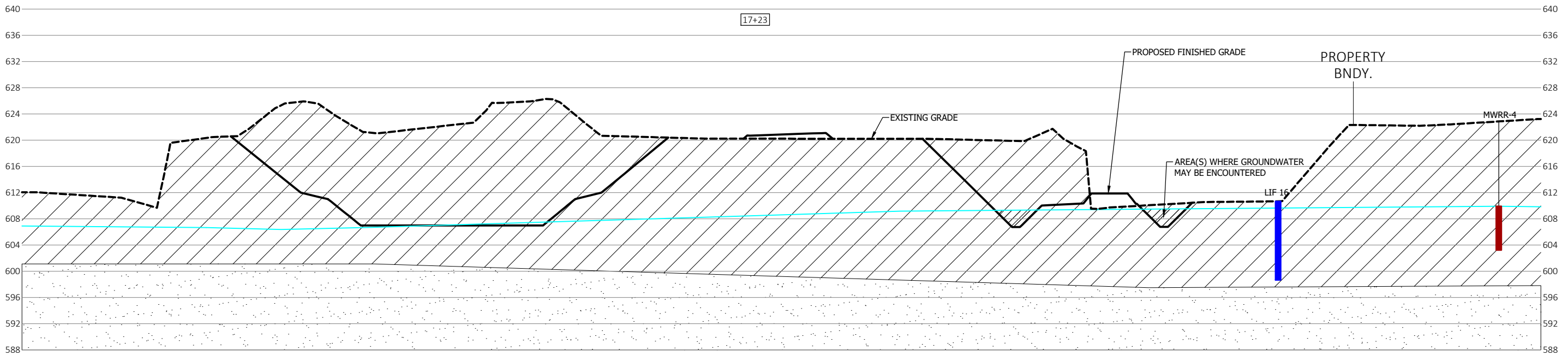
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

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SHEET NUMBER	FIG. 8G











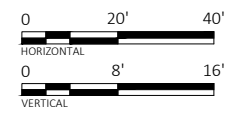
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 xref: 193707141\_XSNO, 193707141\_18, 201225\_mech\_Overall Layout, 2010105-KVAL LINEWORK, 3-structure, 1-CARTRIDGE SHEETPLS, 193707141\_XSST, 193707141\_18, 193707141\_XSP



-  APPROXIMATE GROUNDWATER TABLE
-  CLAY
-  SAND/SILTY SAND

- BENZENE DETECTIONS**
-  <PAL, OR NOT DETECTED
  -  >PAL
  -  >ES
  -  FREE PRODUCT PRESENT
  -  LIF SAMPLE (NO LNAPL)

 COLOR REPRESENTS NR 140 EXCEEDANCE OR PRESENCE OF PRODUCT WITHIN SCREENED INTERVAL AND IS NOT INDICATIVE OF ACTUAL THICKNESS.



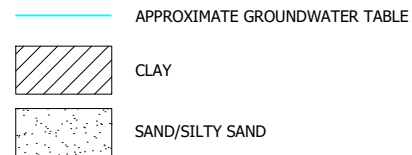
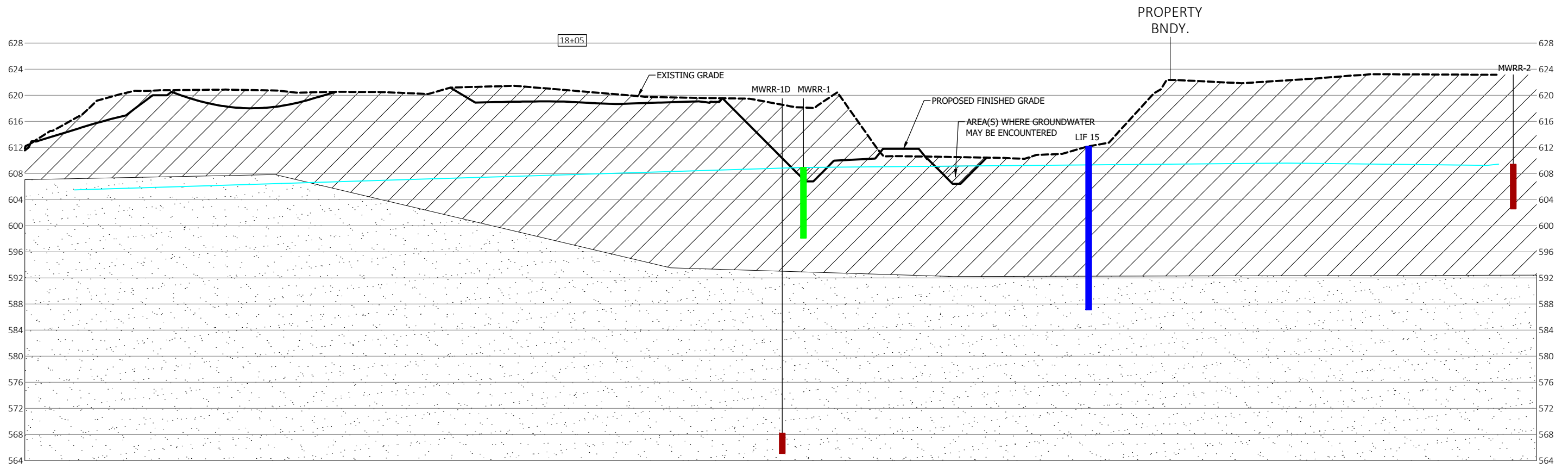
**GROUNDWATER CROSS SECTION DETAIL**  
 C. REISS DOCK  
 C. REISS COMPANY, LLC  
 ST. LOUIS BAY, SUPERIOR, WI

DATE OF ISSUANCE  
 NOVEMBER 18, 2022

NO	REVISION	DATE

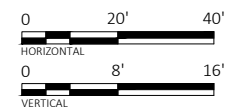
SURVEY	JN
DRAWN	AJR
DESIGNED	AJR
CHECKED	AJR
APPROVED	AJR
PROJ. NO.	193707141

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 xref: 193707141\_XSNO, 193707141\_881A, 2012753\_mech\Overall Layout, 2010153\_KVAL LINEWORK, 3\structure\1-CARTRIDGE\HEEP\PLUS - 193707141\_XSST, 1B-3-425-MEQ, 193707141\_XSP



- BENZENE DETECTIONS**
- <PAL, OR NOT DETECTED
  - >PAL
  - >ES
  - FREE PRODUCT PRESENT
  - LIF SAMPLE (NO LNAPL)

COLOR REPRESENTS NR 140 EXCEEDANCE OR PRESENCE OF PRODUCT WITHIN SCREENED INTERVAL AND IS NOT INDICATIVE OF ACTUAL THICKNESS.



GROUNDWATER CROSS SECTION DETAIL

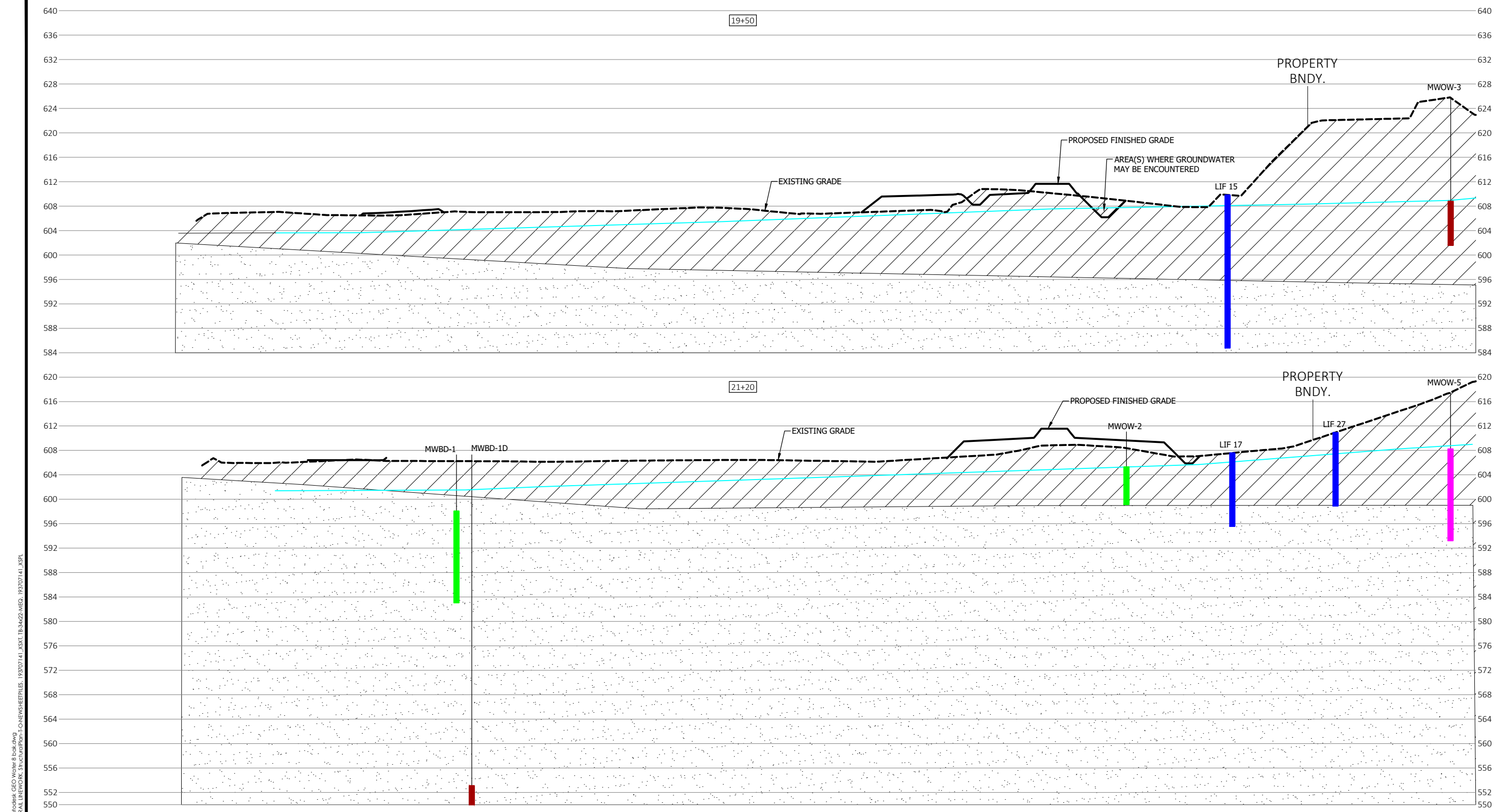
C. REISS DOCK  
 C. REISS COMPANY, LLC  
 ST. LOUIS BAY, SUPERIOR, WI

DATE OF ISSUANCE  
 NOVEMBER 18, 2022

NO	REVISION	DATE

SURVEY	JN
DRAWN	AJR
DESIGNED	AJR
CHECKED	AJR
APPROVED	AJR
PROJ. NO.	193707141

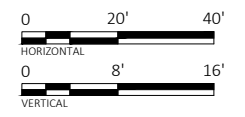
SHEET NUMBER  
**FIG. 8J**



APPROXIMATE GROUNDWATER TABLE  
 CLAY  
 SAND/SILTY SAND

**BENZENE DETECTIONS**  
 ● <PAL, OR NOT DETECTED  
 ● >PAL  
 ● >ES  
 ● FREE PRODUCT PRESENT  
 ● LIF SAMPLE (NO LNAPL)

COLOR REPRESENTS NR 140 EXCEEDANCE OR PRESENCE OF PRODUCT WITHIN SCREENED INTERVAL AND IS NOT INDICATIVE OF ACTUAL THICKNESS.



GROUNDWATER CROSS SECTION DETAIL

C. REISS DOCK  
 C. REISS COMPANY, LLC  
 ST. LOUIS BAY, SUPERIOR, WI

DATE OF ISSUANCE  
 NOVEMBER 18, 2022

NO	REVISION	DATE

SURVEY	JN
DRAWN	AJR
DESIGNED	AJR
CHECKED	AJR
APPROVED	AJR
PROJ. NO.	193707141

SHEET NUMBER  
**FIG. 8K**

Plot Date: 12/01/2022 - 4:39pm  
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 User: 193707141\3\3\3\193707141\_3SP.dwg

Figure No.

11

Title

### Soil Quality - Profile View

Client/Project  
C. Reiss Company, LLC  
C. Reiss Dock  
Site Investigation Report

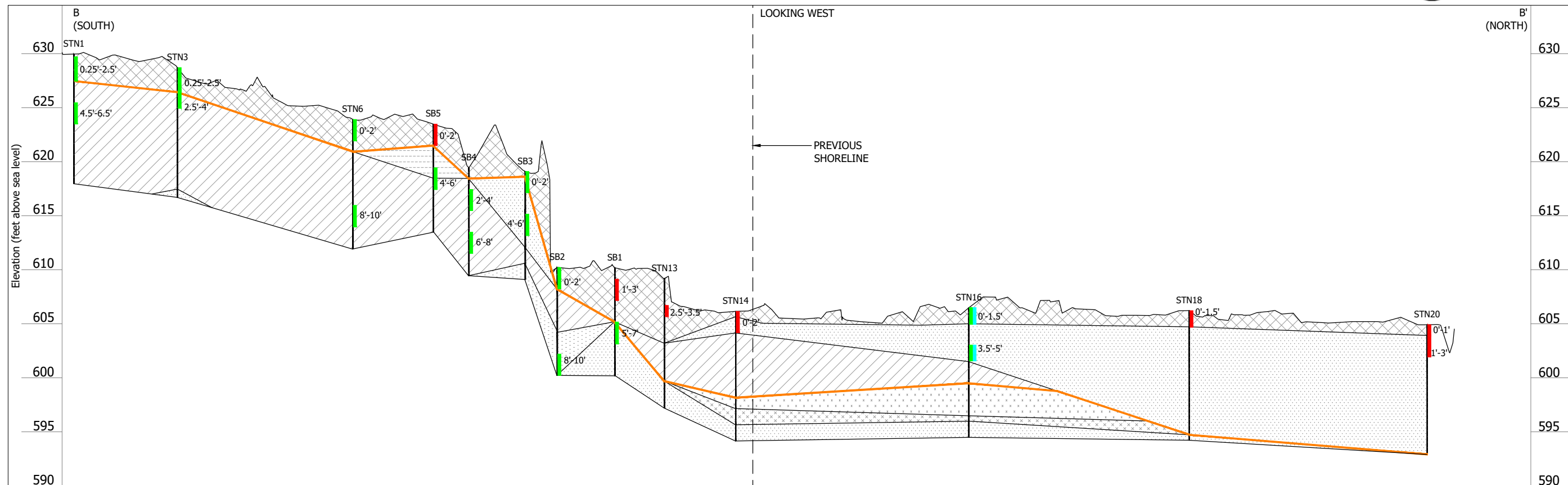
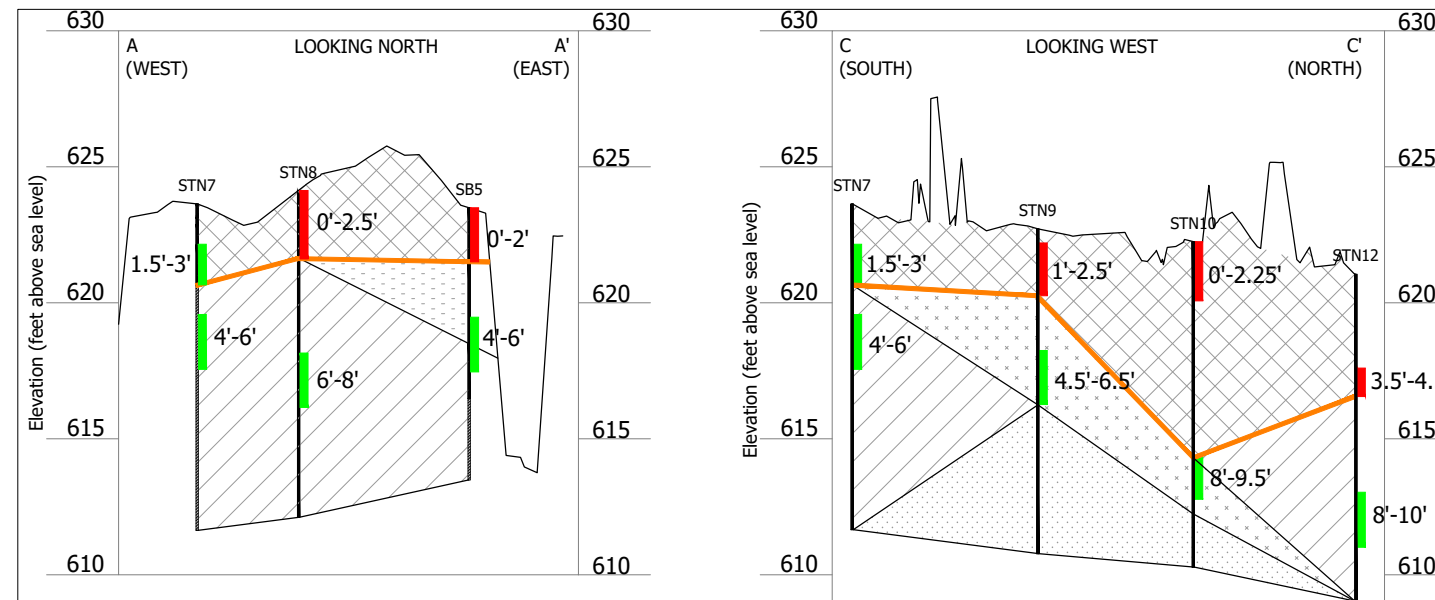
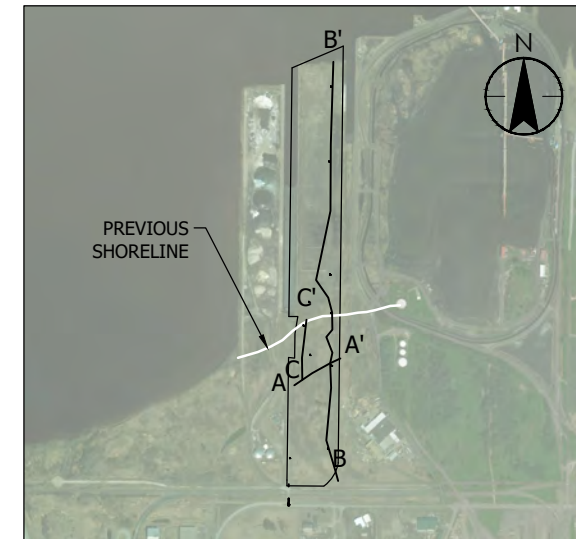
Project Location  
T49N, R14W, S09, S16  
C. of Superior,  
Douglas Co., WI  
193707141  
Prepared by AJR on 2022-07-08  
Technical Review by WMC on 2022-07-08  
Independent Review by BSL on 2020-07-08

Legend  
SB# Soil Boring (Stantec December 2021)  
STN# Soil Boring (Stantec May 2022)  
0 170 340  
HORIZONTAL  
0 5' 10'  
VERTICAL

- Black Fill
- Clay
- Sand
- Clayey Silt
- Silty Sand
- Silt

- Apparent Fill/Native Interface
- ALL SOIL DETECTIONS < IDC RCLs
- PVOC DETECTIONS > GW PATHWAY RCL
- PAH AND/OR RCRA METAL DETECTIONS > IDC RCLs IN FILL

ABBREVIATIONS:  
GW = Groundwater  
IDC = Industrial Direct Contact  
NIDC = Non-Industrial Direct Contact  
PAH = Polycyclic Aromatic Hydrocarbon  
PVOC = Petroleum Volatile Organic Compound  
RCL = Residual Contaminant Level  
RCRA = Resource Conservation and Recovery Act

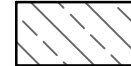




V:\193707141\03\_data\GIS\_cad\Lead\Drawn\SHEETS\Exhibits\MHP\193707141\FIG.G.dwg - Revised: 2022-12-1 10:57:00 AM

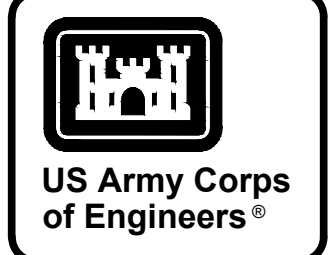
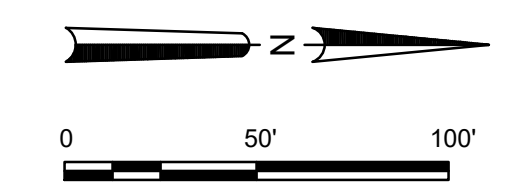


# ATTACHMENTS

**ATTACHMENT A**  
**Redevelopment Plans**  
**(Dredge Sheet C-103)**

- LEGEND:**
-  DREDGE TEMPLATE 1
  -  DREDGE TEMPLATE 2
  -  DREDGE TEMPLATE 3  
(TO BE COMPLETED BY OTHERS)

STORAGE PILE  
25,000 TONS OF STONE



MARK	DESCRIPTION	DATE

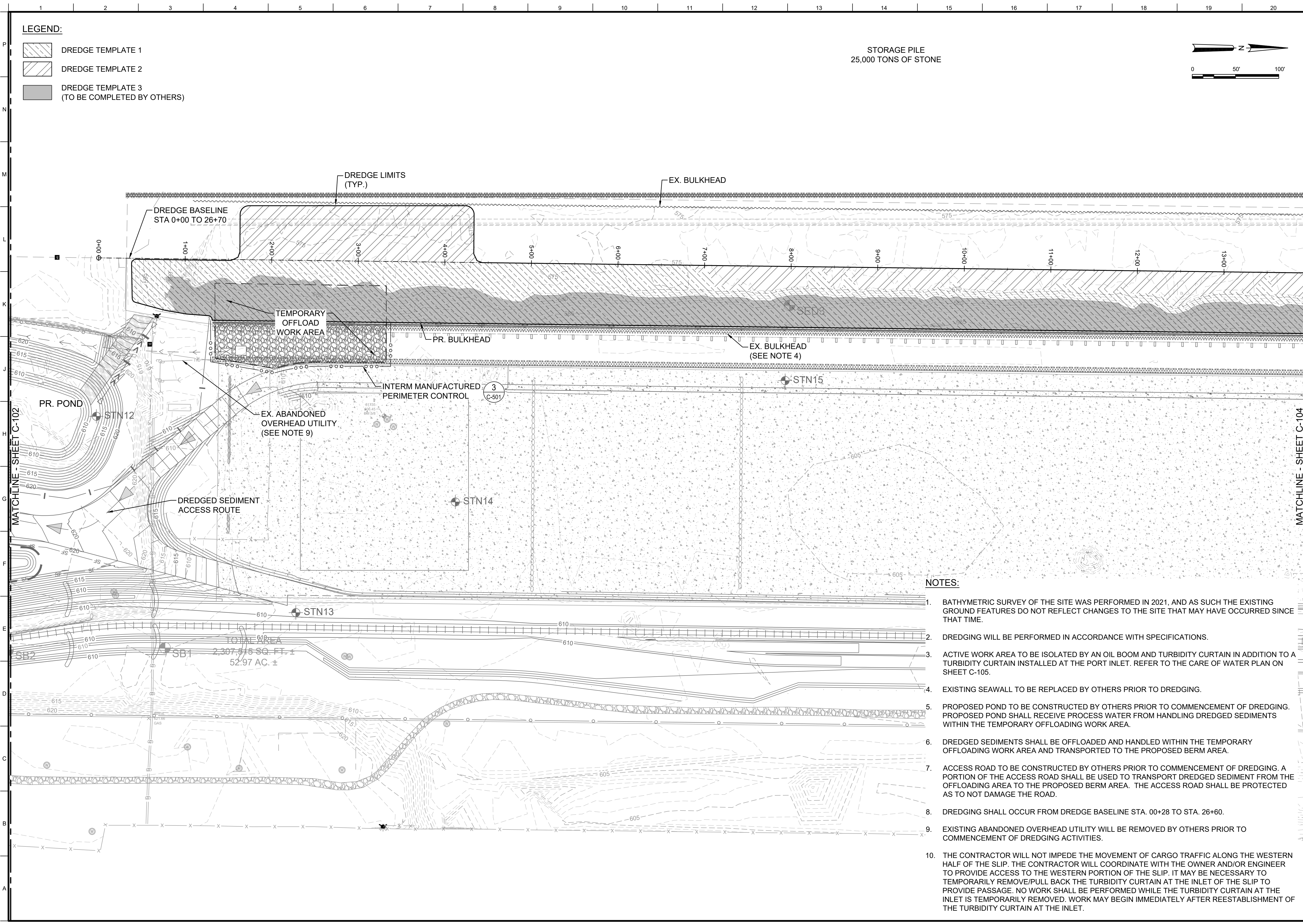
DESIGNED BY: JMK	ISSUE DATE: X/XX/XX
DRAWN BY: CJM	DATE: X/XX/XX
CHECKED BY: X	CONTRACT NO.: +XXXX-XX-XXXX
SUBMITTED BY: X	FILE NUMBER: +XXXX-XX-XXXX
FILE NAME: ANSID	FILE SIZE: 07141C-102-04.DWG

U.S. ARMY CORPS OF ENGINEERS DETROIT DISTRICT 477 MICHIGAN AVENUE DETROIT, MICHIGAN	STANTEC CORPORATE PARKWAY, SUITE 200 MEQUON, WI 53092
--	---

C REISS SLIP GLA RA PROJECT  
ST. LOUIS BAY, SUPERIOR, WI

DREDGING PLAN

SHEET ID  
**C-103**



- NOTES:**
- BATHYMETRIC SURVEY OF THE SITE WAS PERFORMED IN 2021, AND AS SUCH THE EXISTING GROUND FEATURES DO NOT REFLECT CHANGES TO THE SITE THAT MAY HAVE OCCURRED SINCE THAT TIME.
  - DREDGING WILL BE PERFORMED IN ACCORDANCE WITH SPECIFICATIONS.
  - ACTIVE WORK AREA TO BE ISOLATED BY AN OIL BOOM AND TURBIDITY CURTAIN IN ADDITION TO A TURBIDITY CURTAIN INSTALLED AT THE PORT INLET. REFER TO THE CARE OF WATER PLAN ON SHEET C-105.
  - EXISTING SEAWALL TO BE REPLACED BY OTHERS PRIOR TO DREDGING.
  - PROPOSED POND TO BE CONSTRUCTED BY OTHERS PRIOR TO COMMENCEMENT OF DREDGING. PROPOSED POND SHALL RECEIVE PROCESS WATER FROM HANDLING DREDGED SEDIMENTS WITHIN THE TEMPORARY OFFLOADING WORK AREA.
  - DREDGED SEDIMENTS SHALL BE OFFLOADED AND HANDLED WITHIN THE TEMPORARY OFFLOADING WORK AREA AND TRANSPORTED TO THE PROPOSED BERM AREA.
  - ACCESS ROAD TO BE CONSTRUCTED BY OTHERS PRIOR TO COMMENCEMENT OF DREDGING. A PORTION OF THE ACCESS ROAD SHALL BE USED TO TRANSPORT DREDGED SEDIMENT FROM THE OFFLOADING AREA TO THE PROPOSED BERM AREA. THE ACCESS ROAD SHALL BE PROTECTED AS TO NOT DAMAGE THE ROAD.
  - DREDGING SHALL OCCUR FROM DREDGE BASELINE STA. 00+28 TO STA. 26+60.
  - EXISTING ABANDONED OVERHEAD UTILITY WILL BE REMOVED BY OTHERS PRIOR TO COMMENCEMENT OF DREDGING ACTIVITIES.
  - THE CONTRACTOR WILL NOT IMPEDE THE MOVEMENT OF CARGO TRAFFIC ALONG THE WESTERN HALF OF THE SLIP. THE CONTRACTOR WILL COORDINATE WITH THE OWNER AND/OR ENGINEER TO PROVIDE ACCESS TO THE WESTERN PORTION OF THE SLIP. IT MAY BE NECESSARY TO TEMPORARILY REMOVE/PULL BACK THE TURBIDITY CURTAIN AT THE INLET OF THE SLIP TO PROVIDE PASSAGE. NO WORK SHALL BE PERFORMED WHILE THE TURBIDITY CURTAIN AT THE INLET IS TEMPORARILY REMOVED. WORK MAY BEGIN IMMEDIATELY AFTER REESTABLISHMENT OF THE TURBIDITY CURTAIN AT THE INLET.

E:\WORKGROUP\1937\ACTIVE\18370714103\_DATA\GIS\_CAD\CAD\DWG\DRDREDGING\_PLANS\SHEET\_FILES\07141C-102-04.DWG  
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 CWITHERS  
 90% PRELIMINARY



# **ATTACHMENT D**

## **Draft Cap Maintenance Plan**

## DRAFT COVER MAINTENANCE PLAN C. Reiss Coal Dock Property, Superior, Wisconsin

**December 2022**

### Property Information

This Cover Maintenance Plan is applicable to the following parcels which comprise the C. Reiss Coal Dock property in Superior, Wisconsin (the Property) (**Figure 1**). All Property parcels lie within the East ½ of the Northeast ¼ of Section 16, and the East ½ of the Southeast ¼ of Section 09, Township 49 North, Range 14 West, City of Superior, Douglas County, Wisconsin.

Site Name	BRRTS#(s) FID#	Address	WTM Coordinates (WTM91):	Parcel ID
<b>C Reiss Coal Dock Parcel</b>	<b>02-16-589248</b> <b>03-16-000320</b> <i>816130810</i>	NE NE SEC16 T49N R14W	X: 357936.1 Y: 697633.7	048040101400
<b>Burlington Northern R/W Parcel</b>	<i>None</i>	<i>None</i>	X: 357884.9 Y: 697286.4	048040100300

### Introduction

This document is the Maintenance Plan for a protective cover at the above-referenced properties in accordance with the requirements of s. NR 724.13 (2), Wis. Adm. Code. The maintenance activities relate to the cover occupying the area over residual contaminated soil and groundwater at the Property.

More site-specific information about the Sites may be found on the Wisconsin Department of Natural Resources (WDNR) Bureau for Remediation and Redevelopment Tracking System (BRRTS) on the Web for the BRRTS case numbers referenced above.

- The case file in the DNR Northern Region Office (Spooner, Wisconsin),
- At <http://dnr.wi.gov/topic/Brownfields/wrrd.html>, which includes:
  - BRRTS on the Web (DNR's internet-based data base of contaminated sites) for the link to a PDF for site-specific information at the time of closure and on continuing obligations;
  - RR Sites Map for a map view of the site; and
- The DNR project manager for Douglas County.

### Description of Contamination

Soil contaminated by polycyclic aromatic hydrocarbons (PAHs), Resource Conservation and Recovery Act (RCRA) metals and/or petroleum volatile organic compounds (PVOCs) is present in surficial soils/fill materials across the Property, from the ground surface and extending to the water table in some areas; the groundwater table elevation ranges from near-surface at approximately 604 feet above mean sea level (ft amsl) on the north end of the Property, to approximately 617 ft amsl on the south end. The horizontal extent of soil contamination (Stantec, 2022) is shown on **Attachment A**.

Groundwater contaminated by PVOCs is located from the shallow water table to a depth of approximately 58 feet below the existing ground surface on the Property. Additionally, a light non-aqueous phase liquid (LNAPL) "finger plume" is present on the south end of the Property at an average depth of 13 feet below existing ground surface. The source of this groundwater contamination and LNAPL is from an east-adjointing (upgradient) property. The horizontal extent of groundwater contamination and the extent of the LNAPL finger plume are shown on the Antea® Group 2021 Progress Report, January – December 2021, Figures 7 through 10 (Antea, 2022) included as **Attachment B**.

#### Description of the Cover to be Maintained

The Cover consists of building slabs, paved areas, railroad ballast, gravel access roads, and/or clean soil cap (including native grass seeding). The rail spur will be capped with at least 12 inches of impermeable compacted sub-ballast stone topped by nine inches of ballast stone. A gated fence spans the perimeter of the Property to further restrict access, with exception to the proposed railroad spur. Wetlands present on the Property are not to be capped/disturbed. The components and extents of the area subject to this Cover Maintenance Plan are further described below and are illustrated on **Figure 2**.

In the berm and landscaped areas on the southern portion of the Property, the cap will consist of a minimum of 15 inches of clay topped by at least three inches of imported topsoil for planting with a native grass seed mix. The clay will be sourced from the native clay soils on the Property encountered during excavation activities as part of redevelopment, which have been demonstrated to have no PVOC, PAH or RCRA metal detections at concentrations exceeding ch. NR720 Wisconsin Administrative Code (NR720) direct contact standards. Topsoil will be seeded with a native tall grass prairie mix to reinforce and maintain the soil cap in these areas.

The northern portion of the Property is covered with concrete panels that are approximately four inches thick, eight feet long and eight feet wide; these concrete panels along with the proposed gravel access road and railroad ballast will prevent direct contact with contaminated soils exceeding NR720 direct contact standards.

#### Cover Purpose

The Cover over the contaminated soil and groundwater on the Property serves to prevent direct human contact with residual soil contamination that might otherwise pose a threat to human health. The Cover also acts as a partial infiltration barrier to minimize future soil-to-groundwater contamination migration that would violate the groundwater standards in ch. NR 140, Wisconsin Administrative Code. Based on the current industrial use of the Property, the Cover should function as intended unless disturbed.

#### Inspections

The Cover overlying the contaminated soil and groundwater on the Property and as depicted in **Figure 2** will be inspected per the following schedule for deterioration, cracks and other potential problems that can cause exposure to underlying soils:

- Four times per year (quarterly) for the first (2) years following construction;
- Twice per year for the following (3) years; and
- Once per year (annually) for each year beyond, normally in the spring after all snow and ice is gone.

The inspections will be performed by the Property owner or their designated representative. The inspections will be performed to evaluate damage due to settling, exposure to the weather, wear from traffic, increasing age and other factors. Any area where soils have become or are likely to become exposed will be documented.

A log of the inspections and any repairs will be maintained by the Property owner using the WDNR Continuing Obligations Inspection and Maintenance Log (Form 4400-305). The log will include recommendations for necessary repair of any areas where underlying soils are exposed and where infiltration from the surface will not be effectively minimized. Once repairs are completed, they will be documented in the inspection log. A copy of the maintenance plan and inspection log will be kept at the address of the Property owner and available for submittal or inspection by WDNR representatives upon their request.

#### Mowing, Cover Integrity, and Disposal Berm Slopes

Native grass/landscape Cover components on the Property depicted on **Figure 2** will be mowed once per year, normally in late autumn. Annual mowing will maintain the integrity of the cap by controlling the growth of trees and other woody vegetation. Mowing will include the top, base, and side slopes (approximately 3:1 ratio of run to rise) of the Property berm.

Maintenance Activities

If problems are noted during the annual inspections or at any other time during the year, repairs will be scheduled as soon as practical. Repairs can include patching and filling or larger resurfacing or construction operations. In the event that necessary maintenance activities expose the underlying soil, the owner must inform maintenance workers of the direct contact exposure hazard and provide them with appropriate personal protection equipment (PPE). The owner must also sample any soil that is excavated from the site prior to disposal to ascertain if contamination remains. The soil must be treated, stored and disposed of by the owner in accordance with applicable local, state and federal law.

In the event the Cover overlying contaminated soil/groundwater is removed or replaced, the replacement barrier must be equally impervious. Any replacement barrier will be subject to the same maintenance and inspection guidelines as outlined in this Maintenance Plan unless indicated otherwise by the WDNR or its successor.

The Property owner, to maintain the integrity of the Cover, will maintain a copy of this Maintenance Plan at the address of the Property owner and make it available to all interested parties (i.e., on-site employees, contractors, future property owners, etc.) for viewing.

Prohibition of Activities and Notification of DNR Prior to Actions Affecting a Cap/Barrier

The following activities are prohibited on any portion of the property where Cover features including building slabs, paved areas, railroad ballast, gravel access roads, clean soil cap or other barrier is required as shown on **Figure 2** attached, unless prior written approval has been obtained from the Wisconsin Department of Natural Resources: 1) removal of the existing barrier; 2) replacement with another barrier; 3) excavating or grading of the land surface; 4) filling on capped or paved areas; 5) plowing for agricultural cultivation; 6) construction or placement of a building or other structure; or 7) changing the use or occupancy of the Property to a residential exposure setting, which may include certain uses, such as single or multiple family residences, a school, day care, senior center, hospital, or similar residential exposure settings.

If removal, replacement or other changes to a cover, or a building which is acting as a cover, are considered, the Property owner will contact WDNR at least 45 days before taking such an action, to determine whether further action may be necessary to protect human health, safety, or welfare or the environment, in accordance with s. NR 727.07, Wis. Adm. Code.

Amendment or Withdrawal of Maintenance Plan

This Maintenance Plan can be amended or withdrawn by the Property owner and its successors with the written approval of WDNR.

**CONTACT INFORMATION – December 2022**

**RESPONSIBLE PARTY &  
PROPERTY OWNER:**

C. Reiss Coal Company, LLC  
111 West Mason Street  
Green Bay, Wisconsin 54303  
c/o Christian Zuidmulder, General Manager  
Phone: (920) 436-7600  
Email: [Christian.Zuidmulder@Thecreiss.com](mailto:Christian.Zuidmulder@Thecreiss.com)

Signature:

**CONSULTANT &  
TECHNICAL CONTACT:**

---

Stantec Consulting Services Inc.  
12075 Corporate Parkway, Suite 200  
Mequon, Wisconsin 53092  
Stu Gross, Project Manager  
Phone: (262) 643-9159  
Email: [Stu.Gross@stantec.com](mailto:Stu.Gross@stantec.com)

**WDNR CONTACT:**

Wisconsin Department of Natural Resources  
810 West Maple Street  
Spooner, Wisconsin 54802-1255  
Joseph Graham, Contaminated Sediments Specialist  
Phone: (715) 292-4925  
Email: [Joseph.Graham@wisconsin.gov](mailto:Joseph.Graham@wisconsin.gov)

References:

Antea, 2022. 2021 Progress Report, January – December 2021, Former Amoco Terminal, 2904 Winter Street, Superior, Wisconsin, February 8, 2022.

Stantec, 2022. Site Investigation Report, C. Reiss Coal Dock Property, Superior, Wisconsin, July 8, 2022.

Figures:

Figure 1: Site Location and Local Topography

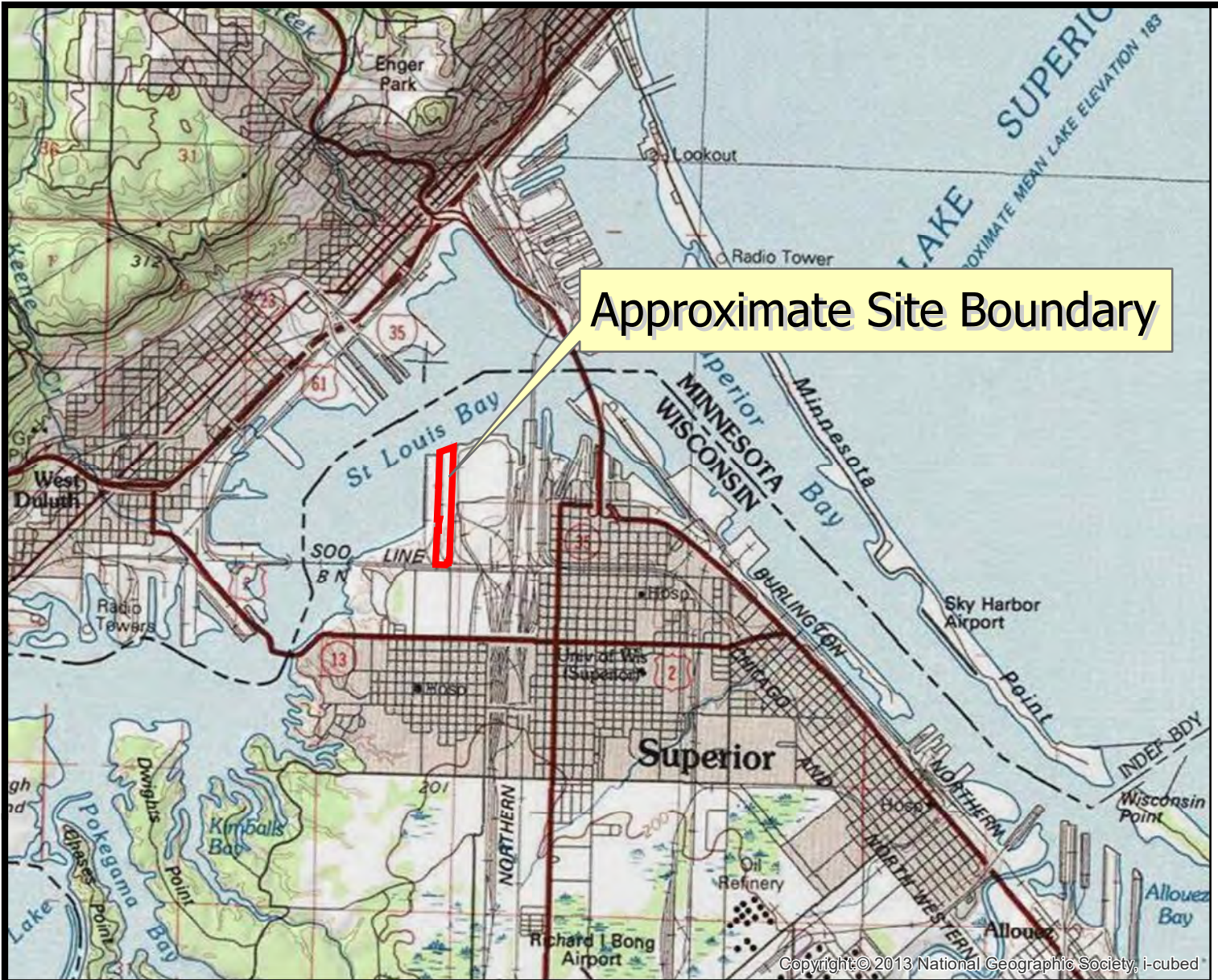
Figure 2: Site Cover Extent

Attachments:

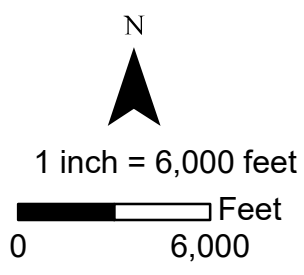
Attachment A: Extents of Soil Contamination (Stantec, 2022)

Attachment B: Extents of Groundwater Contamination and LNAPL (Antea, 2022)

# FIGURES



Copyright © 2013 National Geographic Society, i-cubed



County Location



State Location

AERIAL IMAGERY AND PARCEL DATA SOURCE:  
 ESRI Mapping Center World Imagery Layer - USGS TOPO QUAD

The information on this map has been compiled by Stantec staff from a variety of sources and is subject to change without notice. Stantec makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information.

## Site Location & Local Topography

**C. REISS DOCK  
 ST. LOUIS BAY, SUPERIOR, WI**



DATE: 2022-06-06

Project Path: V:\1937\active\193707141\03\_data\gis\_cad\gis\mxds\193707141\_FIG1.mxd









# **ATTACHMENTS**

**ATTACHMENT A**  
**Extents of Soil Contamination**  
**(Stantec, 2022)**





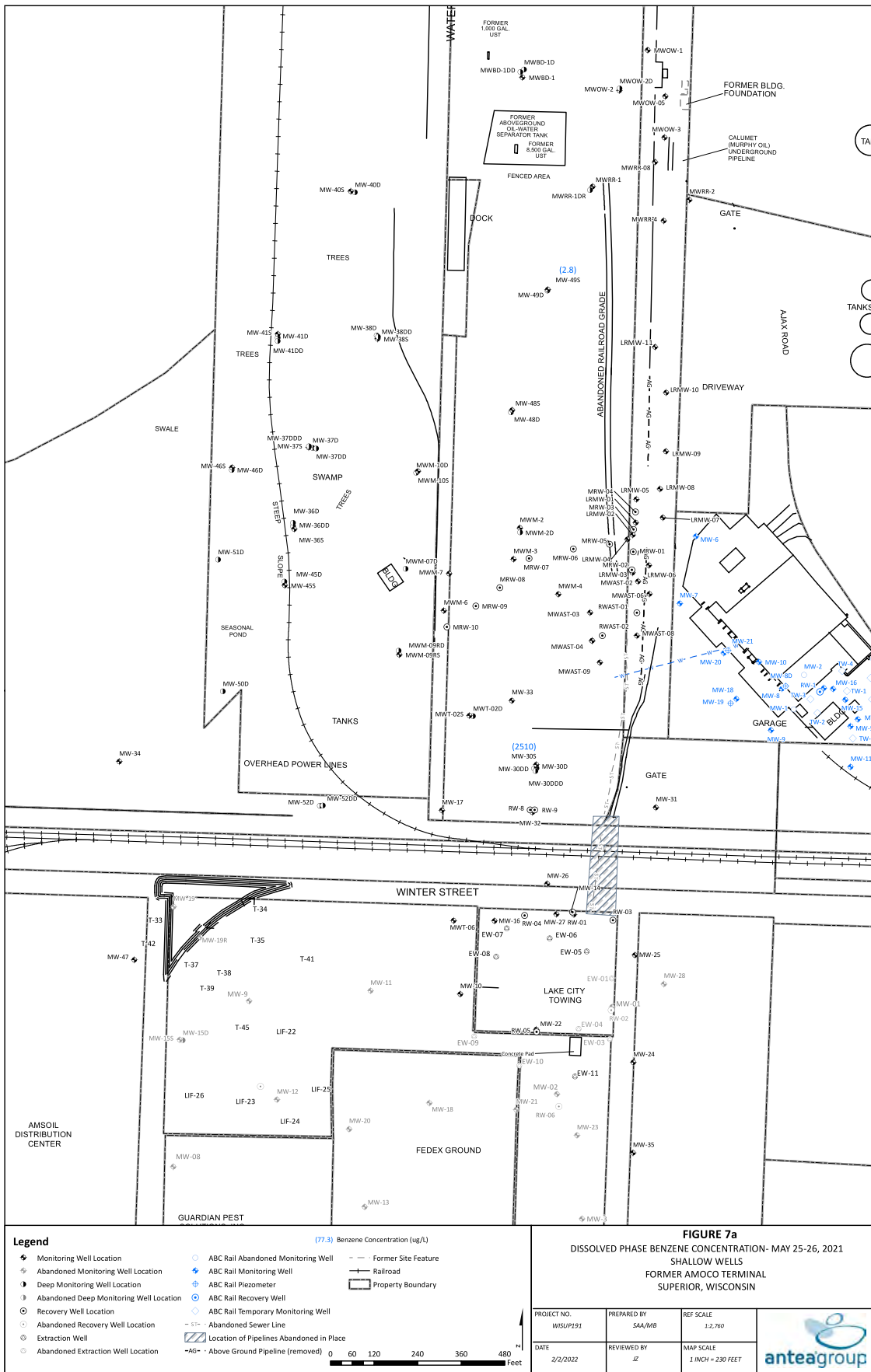


**ATTACHMENT B**  
**Extents of Groundwater Contamination and LNAPL**  
**(Antea, 2022)**



# Attachment B - Extents of Groundwater Contamination and LNAPL (Antea, 2022)

Antea, 2022. 2021 Progress Report, January - December 2021, Former Amoco Terminal, 2904 Winter Street, Superior, Wisconsin, February 8, 2022.

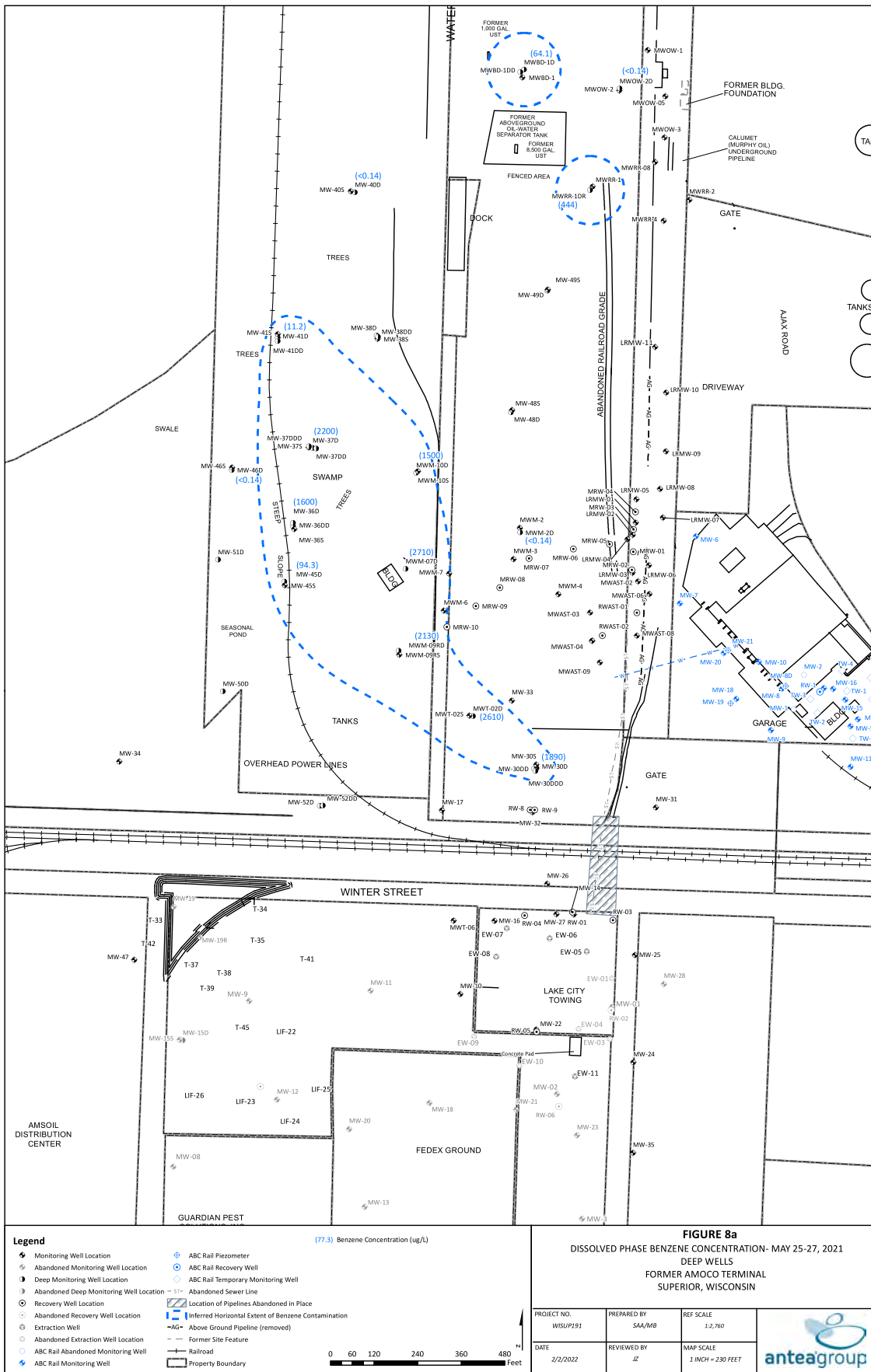


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# Attachment B - Extents of Groundwater Contamination and LNAPL (Antea, 2022)

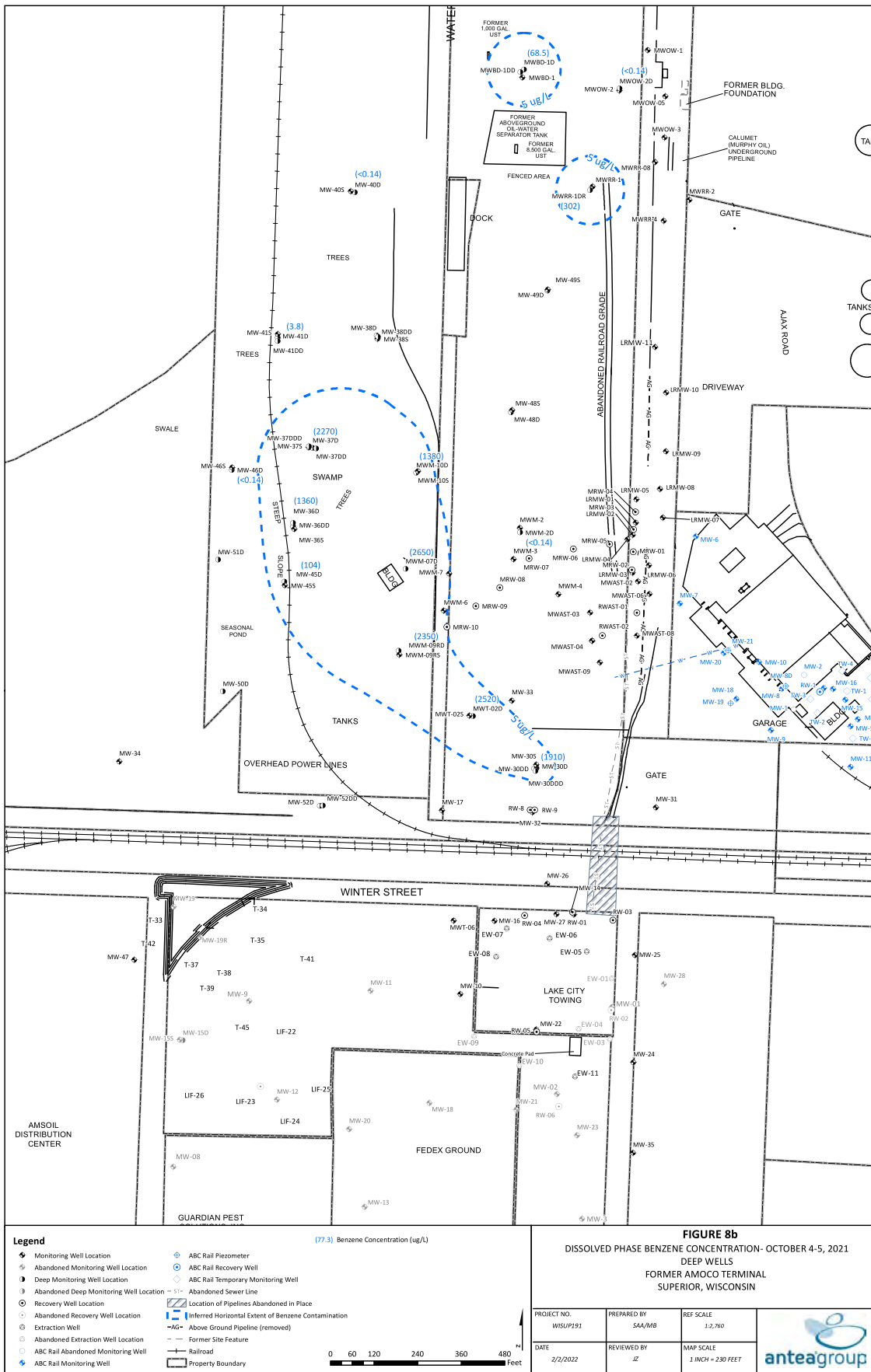
Antea, 2022. 2021 Progress Report, January - December 2021, Former Amoco Terminal, 2904 Winter Street, Superior, Wisconsin, February 8, 2022.



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# Attachment B - Extents of Groundwater Contamination and LNAPL (Antea, 2022)

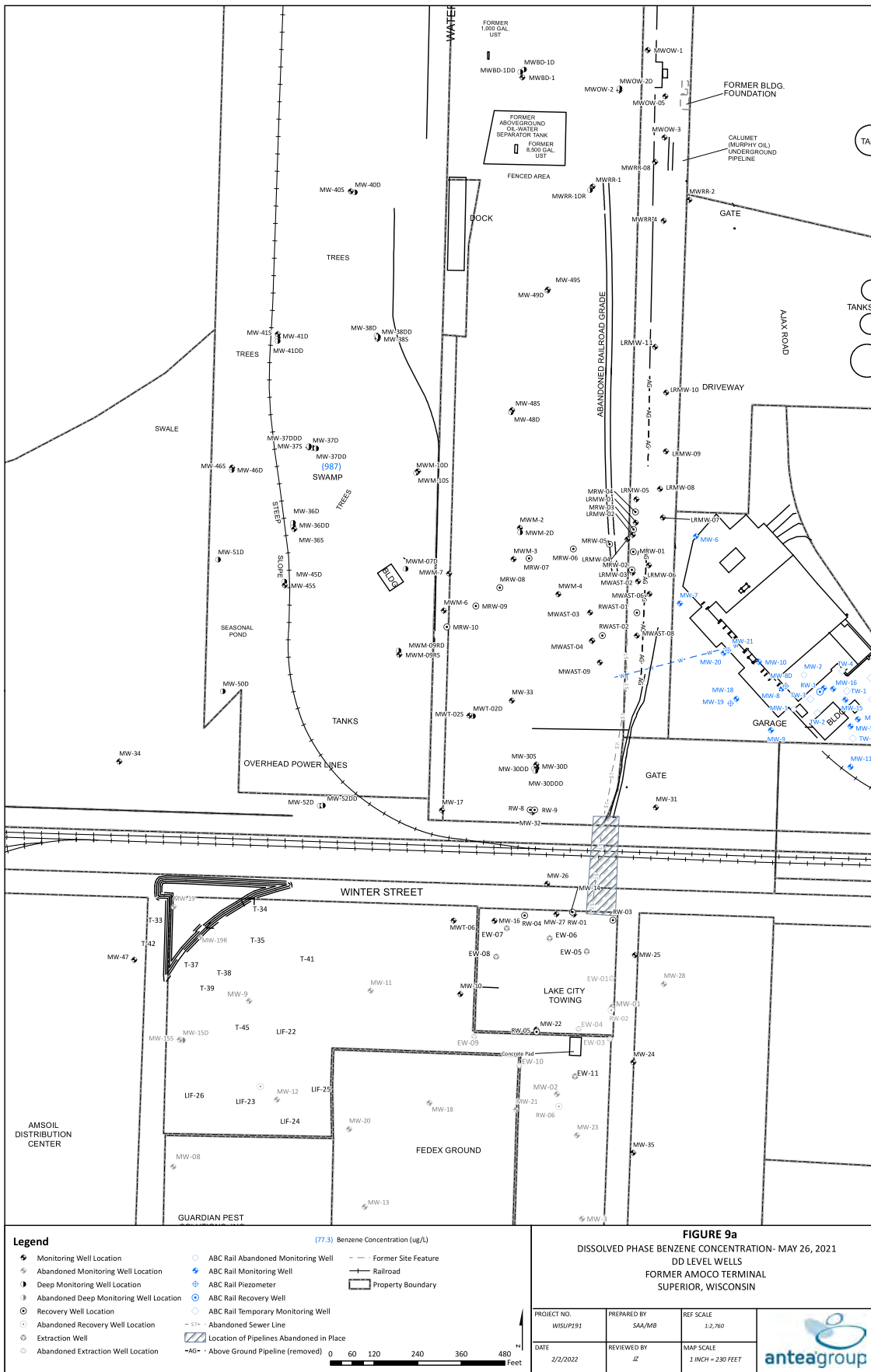
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# Attachment B - Extents of Groundwater Contamination and LNAPL (Antea, 2022)

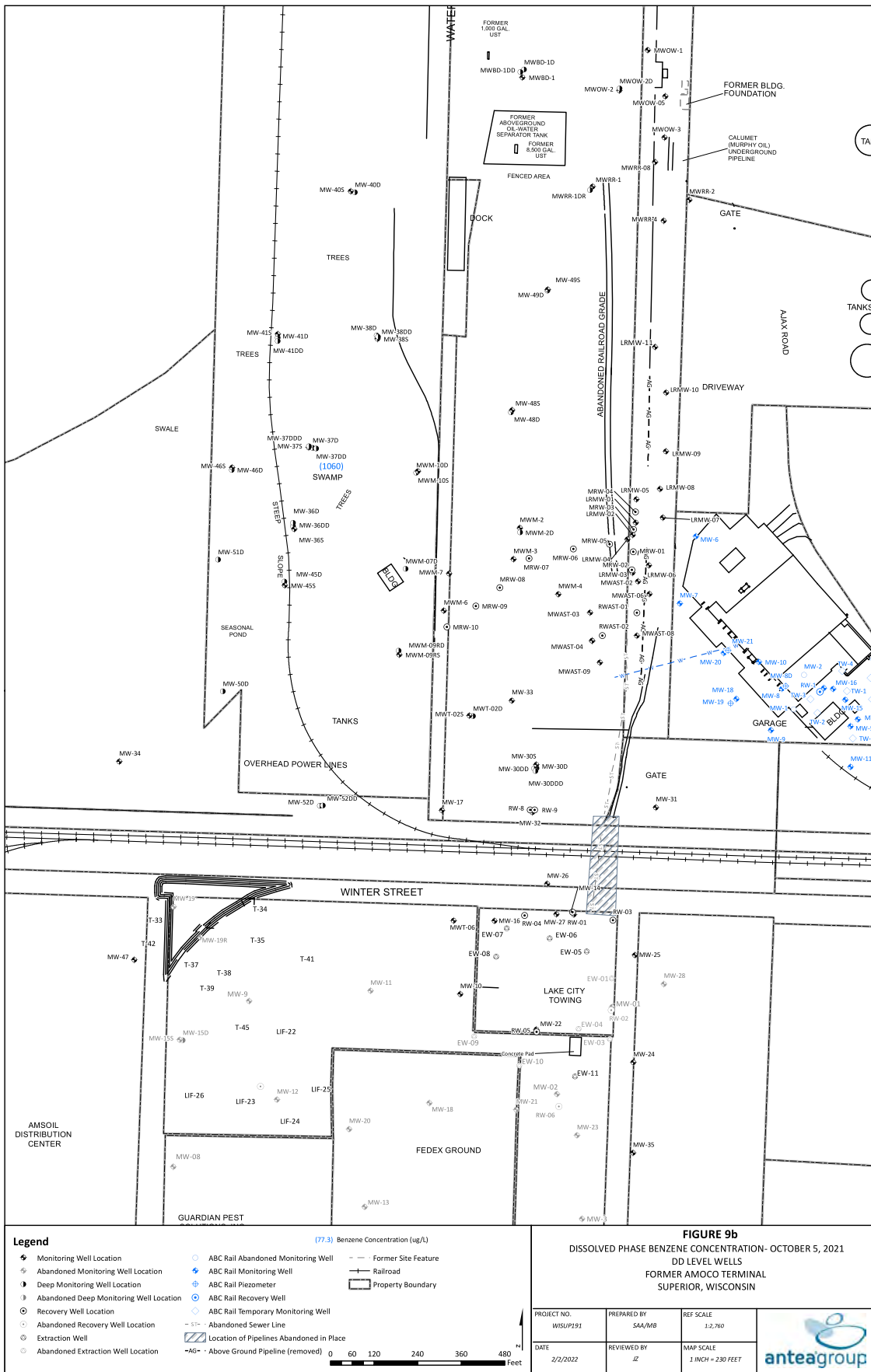
Antea, 2022. 2021 Progress Report, January - December 2021, Former Amoco Terminal, 2904 Winter Street, Superior, Wisconsin, February 8, 2022.



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# Attachment B - Extents of Groundwater Contamination and LNAPL (Antea, 2022)

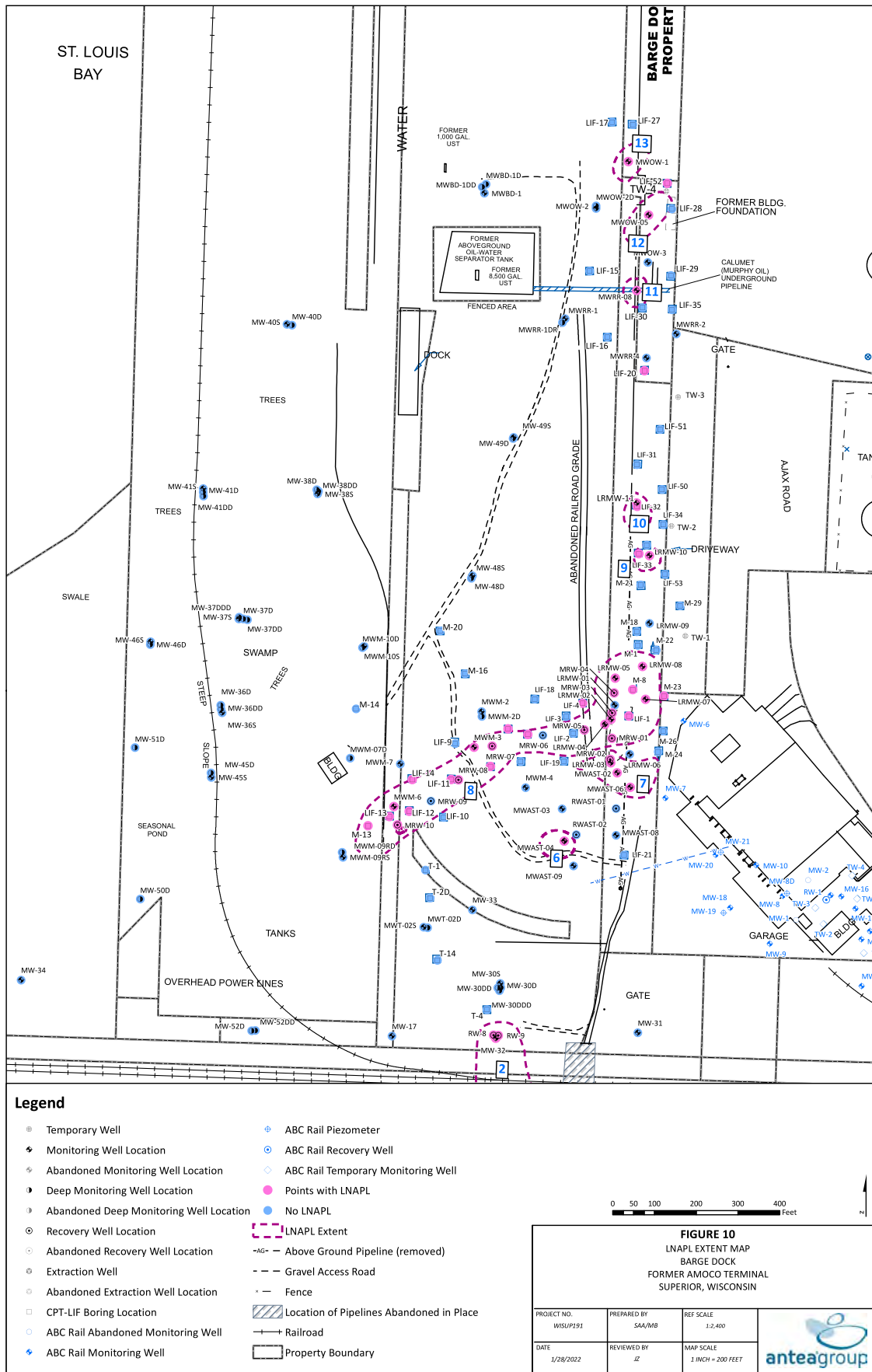
Antea, 2022. 2021 Progress Report, January - December 2021, Former Amoco Terminal, 2904 Winter Street, Superior, Wisconsin, February 8, 2022.



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# Attachment B - Extents of Groundwater Contamination and LNAPL (Antea, 2022)

Antea, 2022. 2021 Progress Report, January - December 2021, Former Amoco Terminal, 2904 Winter Street, Superior, Wisconsin, February 8, 2022.



C:\Users\markb2\Antea USA, Inc\NCGH-Digital Solutions2021 - Geospatial - private - Geospatial - private\TEMP GIS Files\Superior Terminal\WISUPERIOR\Layout\Site Map-LNAPL Extent North.mxd

**ATTACHMENT I**  
**Evaluation of Geotechnical and  
Hydrogeological Conditions Memo**



---

To:	Joseph Graham, WDNR	From:	Joel Thompson, PG (MN, TX, LA) Principal Hydrogeologist
			Paul Eickenberg, PE (MN) Senior Geotechnical Engineer Minneapolis & Maple Plain, MN
File:	C. Reiss Superior Dock	Date:	December 1, 2022

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**Reference: Evaluation of Geotechnical and Hydrogeological Conditions; Proposed C. Reiss Coal Dock Property, Superior, WI BRRTS Case No. 02-16-589248**

This technical memo was prepared to address a Wisconsin Department of Natural Resources (WDNR) request for additional information related to a geotechnical and hydrogeological evaluation of the effects of the proposed berm construction associated with proposed on-site soil management activities at the C. Reiss Coal Dock property in Superior, Wisconsin (the Property). The WDNR requested this information in email correspondence dated November 9, 2022. The memo provides further geotechnical and hydrogeological information to address these requests separately below.

**Geotechnical Evaluation**

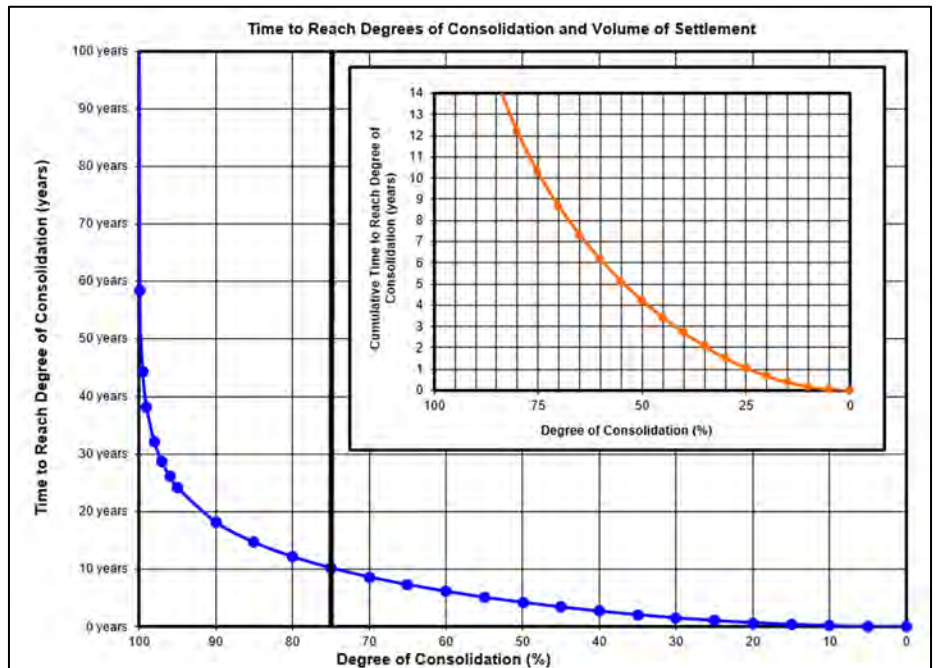
**Initial Loading Conditions and Lithology.** The maximum load which will be applied to the underlying soils in the vicinity are based on a disposal berm pile height of approximately 29 feet. Underlying this pile appears to be a layer of fill generally overlying layers of fat clay alluvium which eventually overlies a medium dense silty sand alluvium.

**Consolidation Methodology and Analyses.** Consolidation parameters were not available to predict settlement at this site. Therefore, in order to estimate consolidation of the underlying soils, values of the compression and recompression index, initial void ratio, pre-consolidation pressure, and the over consolidation ratio (OCR) must be estimated. These parameters were estimated using the available data – moisture content and Atterberg Limits.

Using information from geotechnical borings performed by American Engineering Testing (AET) in July 2022 and documented in their *Report of Geotechnical Exploration* for the C. Reiss Coal Dock Development dated August 22, 2022 (AET, 2022), the average moisture content in the fill soils was about 26%. We have assumed that the fill soils are slightly over consolidated (have an OCR = 1.5) and have an initial void ratio of 1.0. The average moisture content, liquid limit, and plastic limit in the fat clay soils was about 31%, 67%, and 18%, respectively. Noting that the moisture content is closer to the plastic limit (highly compressed soil) than it is to the liquid limit (highly compressible soil), one can opine that the material is over consolidated. Therefore, an OCR of 1.75 for the uppermost fat clay layer and 2.5 for the lowermost fat clay unit are assumed (where the differentiator is based on soil penetration resistance).

**Settlement.** Using the above assumptions, values of settlement are estimated to be between 12 to 18 inches under the tallest portion of the pile and tapering to nearly zero at the edges. It is anticipated that almost all this settlement will happen in the fill and upper clay layers. Better estimates would be achieved by performing one-dimensional consolidation tests at various depths through the existing soil.

From a time-rate of settlement perspective, assuming that a liquid limit of about 70% equates to a coefficient of consolidation value of about 0.001 square centimeters per second, we estimate that it will take about 10 years to achieve 75% of the total consolidation value (or about 14 inches).



Lastly, it is important to note that these results are based on available data and parameter assumptions. Physical testing is required if better estimates are needed.

**Geotechnical Evaluation Summary.** Settlement of the soils beneath the greatest height of the proposed disposal berm is not expected to exceed 18 inches over approximately 10 years. This is based on the following:

- The underlying clay is over consolidated based on the comparison between the existing moisture content and the Atterberg Limits;
- The underlying sands were shown to be medium dense which indicated minimal settlement potential with light loads like this stockpile; and
- Most of the settlement will occur in the middle of the pile; the edges will see very little settlement.

### Hydrogeological Evaluation

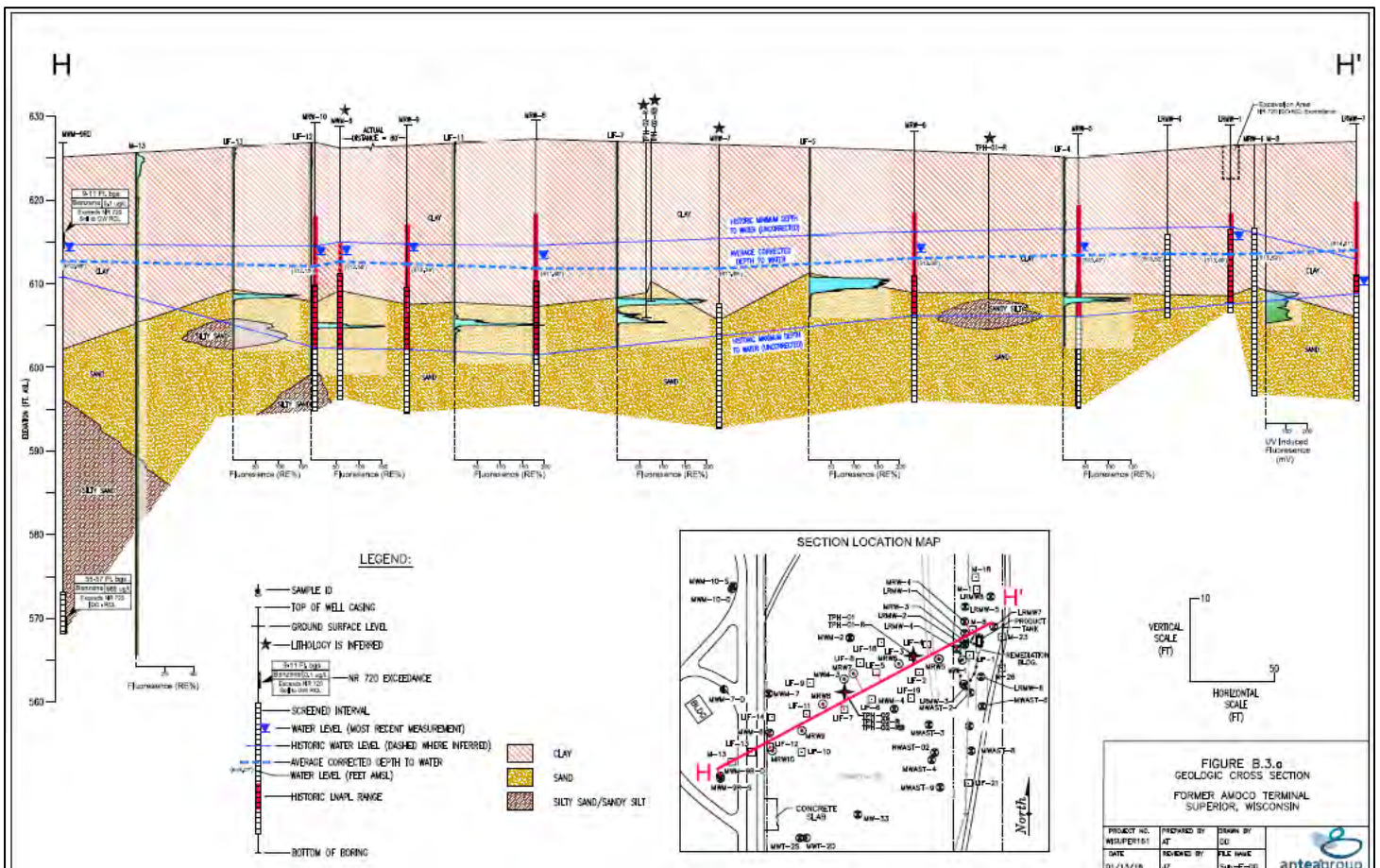
**Evaluation of the Potential for Product Migration.** Light non-aqueous phase liquid (LNAPL) migration during placement of loads may be a concern under specific subsurface conditions. For example, when a significant thickness of LNAPL is present under high saturation conditions within compactible fine-grained sediments. Under the described conditions, compaction over time may have the potential to reduce the pore space in the soil media occupied by LNAPL and groundwater. As with any fluid, LNAPL will take the path of least resistance in the subsurface. When the pore space is reduced due to compaction, the LNAPL, which preferentially occupies the larger pores (LNAPL is typically the non-wetting or intermediate wetting phase), may theoretically redistribute vertically or horizontally through the connected pore space. Conversely, it is also reasonable to infer, that following the reduction in pore space due to compaction, LNAPL may become less mobile due to the

lowering of the pore entry pressure. As pore space sizes decrease, it can prevent the movement of LNAPL, rendering it functionally immobile.

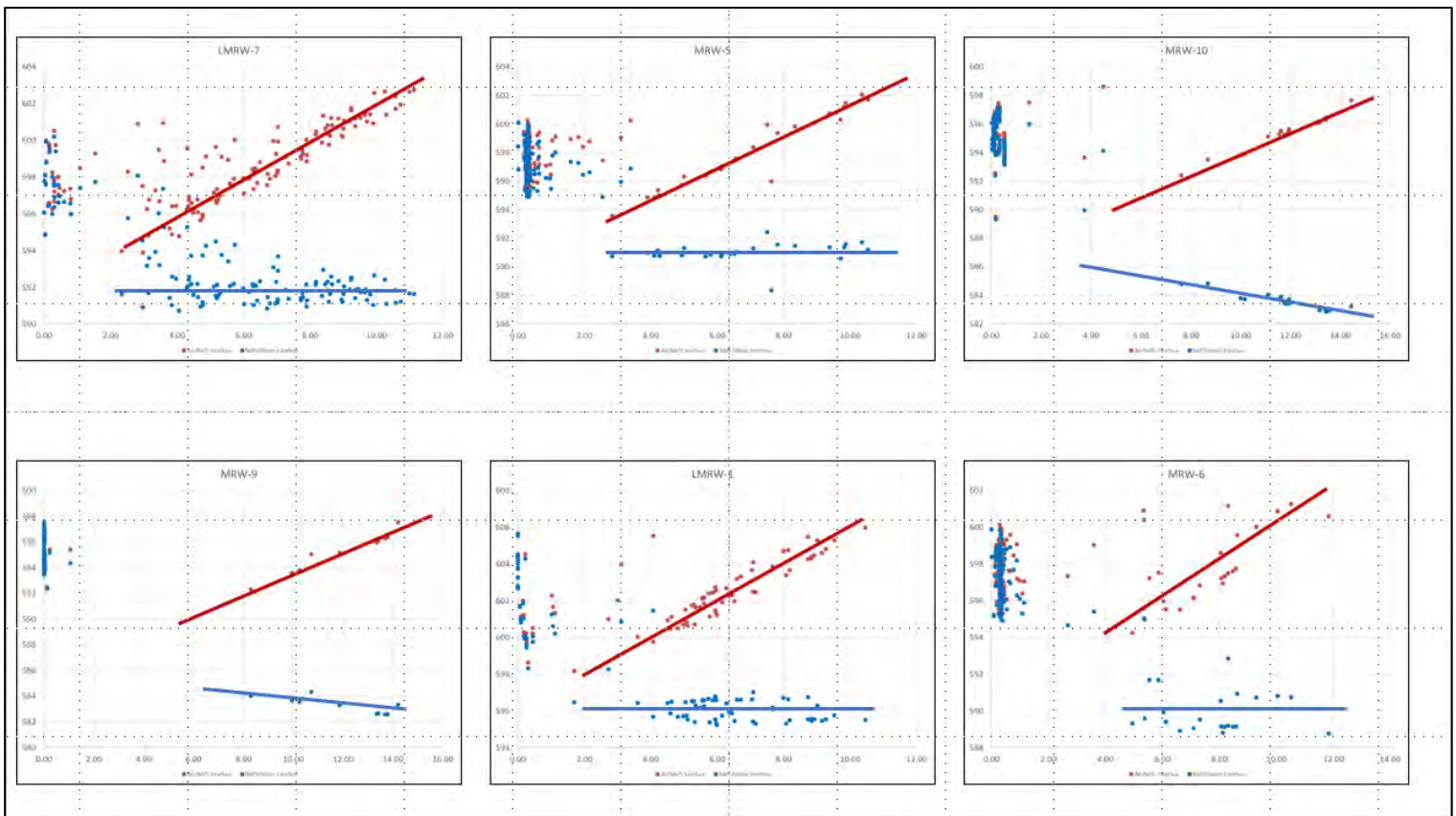
However, the above-described conditions are not encountered at the Property and therefore the potential risk of significant LNAPL migration due to compaction forces is considered to be low. In general, the mobile LNAPL intervals are observed to be thin, present under confined conditions, and within the granular soils at a depth in which little, if any settlement, is anticipated to occur. Additionally, under confined conditions, the LNAPL is trapped against the confining layer and therefore is vertically immobile. It is also noted that due to the age of the release and active recovery efforts, LNAPL saturation in the subsurface is inferred to be low.

**Confined Condition of LNAPL at the Property.** There are multiple lines of evidence that indicate LNAPL encountered at the Property is present under confined conditions, at depth, and within the granular soils:

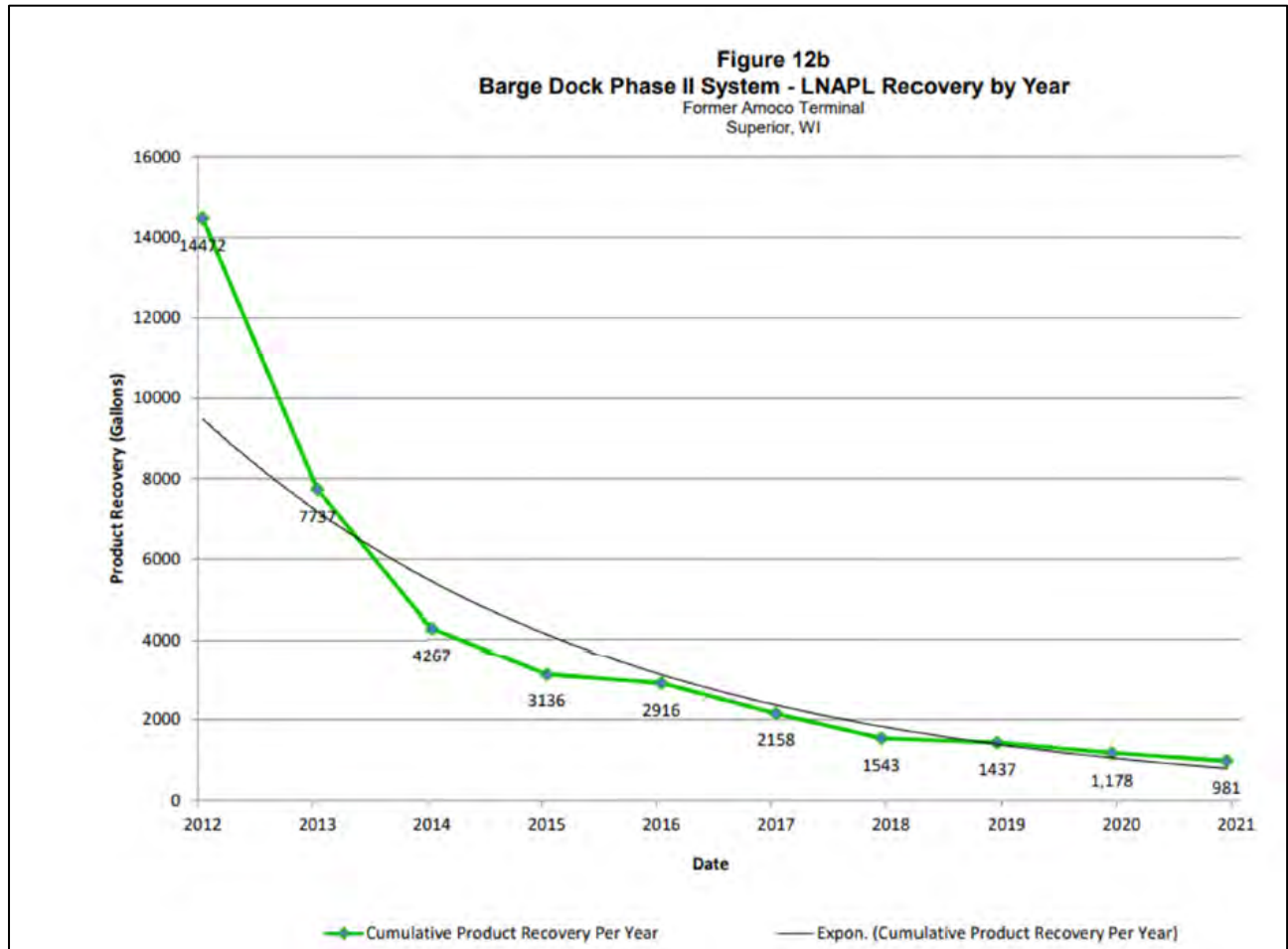
1. Hydrogeologic Setting. The hydrogeologic conditions are consistent with the potential presence of confined LNAPL. A review of available boring logs and cross sections indicates that, in the area of interest, there is a clay layer that is immediately above the dominant LNAPL interval, which is largely indicated to be present within the granular soils (silty sand alluvium). The Antea Group figure below presents a cross section through the LNAPL “finger plume” present on the Property. As displayed in the cross section below, the subsurface consists of approximately 15 to 20 feet of clay underlain by sand and silty sand. The water table is present within the overlying clay and the sand and silty sand water-bearing unit is confined by the overlying clay.



2. **Distribution of LNAPL in the Subsurface.** Laser induced fluorescence (LIF) data has provided significant additional data regarding the vertical distribution of LNAPL at the Property. LIF screening uses an ultraviolet optical screening tool (UVOST) system to send fluorescent light through a fiber optic cable contained within probe rods. UVOST is capable of detecting the fluorescent properties exhibited in soil by polycyclic aromatic hydrocarbons (PAHs) observed in LNAPL, indicating a response on a real-time graph of each soil interval analyzed vertically. LIF borings completed in the vicinity of the LNAPL “finger plume” at the Property are shown on the cross-section figure above. The selected probe locations and maximum response relative to the reference emitter (% RE: an indicator of LNAPL) are depicted. In the borings where elevated % RE was encountered, the profile of the LNAPL saturation generally included peak % RE that occurred below the water table, below the clay layer and within the sand and silty sand unit. This pattern is consistent with confined LNAPL. It is further noted that the vertical distribution of elevated % RE is within a discrete zone approximately 1-5 feet thick directly underlying the clay confining layer.
  
3. **LNAPL Observations in Monitoring Wells.** The hydrogeologic condition of the LNAPL can be further identified using a diagnostic gauge plot (DGP) of equilibrium gauging data. Characteristic DGP curves for confined conditions are indicated by a stable LNAPL/water interface and an air/LNAPL interface that increases with increasing LNAPL thickness. The LNAPL/water interface corresponds to the base of the mobile LNAPL zone, and top of the confining contact is the top of the mobile LNAPL zone. As indicated by the DGPs within the “finger plume” presented below, the LNAPL behavior is characteristic of confined LNAPL.



**LNAPL Recovery Efforts.** Reports of LNAPL recovery indicate that the Phase II recovery system is approaching asymptotic recovery and is no longer effective (Antea Group, 2022, Figure below). This condition is indicative of low LNAPL saturations in the subsurface are low and further reduced risk of significant migration.



**Hydrogeological Evaluation Summary.** Multiple lines of evidence indicate that the potential for significant migration of LNAPL due to the application of a load to the underlying soils is low. The lines of evidence include:

- Geotechnical analysis which indicates minimal loading effects to the sand and silty sand soils;
- LNAPL is observed to be present under confined conditions, at depth, within the sand and silty sand layer;
- LNAPL is observed to be vertically distributed within thin discrete zones; and
- LNAPL recovery efforts have significantly reduced LNAPL saturation within the subsurface.

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### **Conclusion**

It is our intent that this memo addresses the evaluation of geotechnical and hydrogeological effects of the proposed berm construction associated with proposed on-site soil management activities at the Property requested by WDNR. Additional discussions and illustrations related to clay unit thicknesses and the proximity of proposed excavations to contaminated media are further addressed in the response letter text.

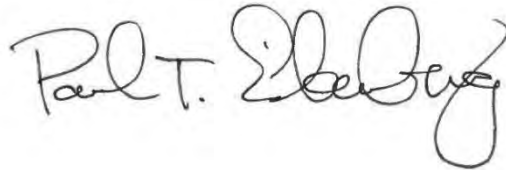
Sincerely,

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