



2121 Innovation Court, Suite 100
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De Pere, WI 54115-5095
(920) 497-2500
foth.com

September 14, 2021

Mr. John Sager
Wisconsin Department of Natural Resources
Superior Service Center
1701 N 4th Street
Superior WI 54880

Dear Mr. Sager:

RE: Confirmation of Infiltration/Injection Exemption
Superior Water, Light & Power Former Manufactured Gas Plant Site
WDNR BRRRTS #02-16-275446

On behalf of Superior Water, Light & Power (SWL&P), Foth Infrastructure & Environment, LLC (Foth) presents this letter confirming that the Superior Water, Light & Power Former Manufactured Gas Plant (MGP) Site is exempt from Infiltration and Injection approval requirements under ch. NR 140, Wis. Admin. Code. As stated in the Wisconsin Department of Natural Resources (WDNR) publication Infiltration and Injection Requests Submittal, Review and Approval Process (WDNR PUB-RR-935, March 2013): "The only instance where an NR 140 approval is not required is if the only substance being injected is oxygen or hydrogen peroxide.". As part of the remedial action design, a biosparging system will be installed and operated at the MGP site. The biosparging system will not inject any chemical into the site groundwater. If, in the future, a contingency plan including chemical injection into the site groundwater is required to meet remedial action objectives, the WDNR will be notified and a ch. NR 140, Wis. Adm. Code compliant approval request will be submitted.

Site Location

The Site is located northeast of the intersection of Winter Street and East 1st Street, in Superior, Wisconsin, in Douglas County. The Site is located in the northwest quarter of Section 13, Township 49 North and Range 14 West (NW ¼ of Sec. 13, T49N, R14W). A Site location map is provided on Figure 1-1.

As shown on Figure 2-1 (also included in Attachment 1), portions of the Site are owned by SWL&P, the City of Superior (City), the U.S. Department of Transportation (USDOT), Cutler Laliberte Macdougall Corp., (also known as "Graymont," hereafter referred to as "CLM/Graymont"), Burlington Northern Santa Fe Railway Company (BNSF), the State of Wisconsin, and Lafarge Corporation.

The Site is located approximately two miles from downtown Superior, Wisconsin, on the industrialized waterfront of Superior Bay, on Lake Superior. In general, the upland portion of the

Site roughly centers around a 3,000 square foot brick building that was constructed in 1929 and is presently used by the current property owners for storage. Gravel parking areas surround the building, and several vacant parcels of land that were used during historic Site operations are located immediately to the west, southwest, and south of the building. These vacant parcels include a grass-covered field to the west where the facility's original two gas holders were once located; a grass-covered field to the southwest where a third, and larger, gas holder was once located (south of U.S. Highway 53); and a grass-covered field directly to the south of the building where the facility's fourth and final gas holder (known as the "Horton sphere") had once stood.

Project Description

The Work, anticipated to begin in May 2022, includes:

- ◆ Site preparation including general clearing, grading, and fencing;
- ◆ Excavation of contaminated soil;
- ◆ Contaminated material transport to the material handling area;
- ◆ Material handling area operations including soil stockpiling and vented pile treatment area operations;
- ◆ Contaminated material transport off-site;
- ◆ Installation of biosparge, soil vapor extraction, and air treatment equipment, piping, and wells;
- ◆ Wastewater collection and treatment;

Drawing A-4 shows the proposed remediation site layout.

Biosparging System Description

A biosparge, SVE, and air treatment system will be constructed and operated to:

- ◆ Treat in-situ soil and groundwater that is within the targeted remediation area and volume (as shown on Drawing E-1);
- ◆ Capture soil gas containing VOCs within the area of influence of the biosparge system; and
- ◆ Remove and/or destroy VOCs in the captured soil gas using a catalytic oxidizer or GAC treatment.

The same air injection, SVE, and air treatment equipment used to inject, extract, and treat air for vented pile treatment will also be used for the biosparge, SVE, and associated soil gas treatment. Initial operation of the systems will focus on vented pile treatment so the soil in the vented pile can be placed, treated, loaded, and disposed during the expected RA construction period (through November 2022). Furthermore, a phased startup of biosparge systems will be needed to effectively manage the higher initial VOC concentrations expected during the first few months of

system operation. Once the vented pile soil has been treated, the full capacity of the biosparge, and air treatment equipment can be focused on the biosparging area shown on Drawing E-1.

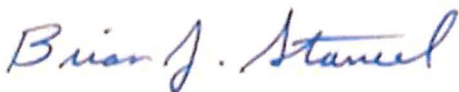
The biosparge system includes an air compressor, receiver tank, air delivery manifold, and other electrical equipment and controls shown on Drawing F-1. Compressed air at pressures of 5 to 30 pounds per square inch (psi) will be delivered to 152 vertical biosparging wells located throughout the biosparging area and segregated into four independent area quadrants. A manifolded piping network of four main air lines will distribute compressed air to four biosparge treatment quadrants (labelled Area A, Area B, Area C, and Area D on Drawings E-1 through E-5). Air from each quadrant's main compressed air line will then distribute air to individual vertical wells through a smaller set of air lines feeding from 3 to 6 rows of biosparge wells consisting of 4 to 13 biosparge wells. Thus, the compressed air can be injected into between one and four quadrants at any one time. Additionally, a ball valve at each injection well will be adjusted to control air flow into any single biosparge well. This arrangement provides great flexibility in targeting air flow to specific areas or wells. Once operating, from 1 to 4 standard cubic feet per minute (scfm) of air will be injected into each bioventing well. The air flow rate to each biosparge well will fluctuate with time depending on the amount of VOCs in the impacted soil and groundwater and to create a more dynamic air flow in the aquifer to enhance misting of air with groundwater.

As stated previously, the SWL&P Former MGP Site is exempt from Infiltration and Injection approval requirements under ch. NR 140, Wis. Admin. Code. As stated in the WDNR publication Infiltration and Injection Requests Submittal, Review and Approval Process (WDNR PUB-RR-935, March 2013): "The only instance where an NR 140 approval is not required is if the only substance being injected is oxygen or hydrogen peroxide." As part of the remedial action design, a biosparging system will be installed and operated at the MGP site. The biosparging system will not inject any chemical into the site groundwater. If, in the future, a contingency plan including chemical injection into the site groundwater is required to meet remedial action objectives, the WDNR will be notified and a ch. NR 140, Wis. Adm. Code compliant approval request will be submitted.

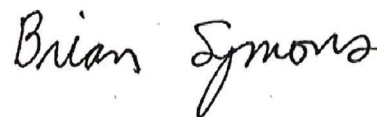
If you have any questions regarding this letter or require any further information, please contact Brian Stanul by email at Brian.Stanul@foth.com or by phone at (608) 358-7137.

Sincerely,

Foth Infrastructure & Environment, LLC

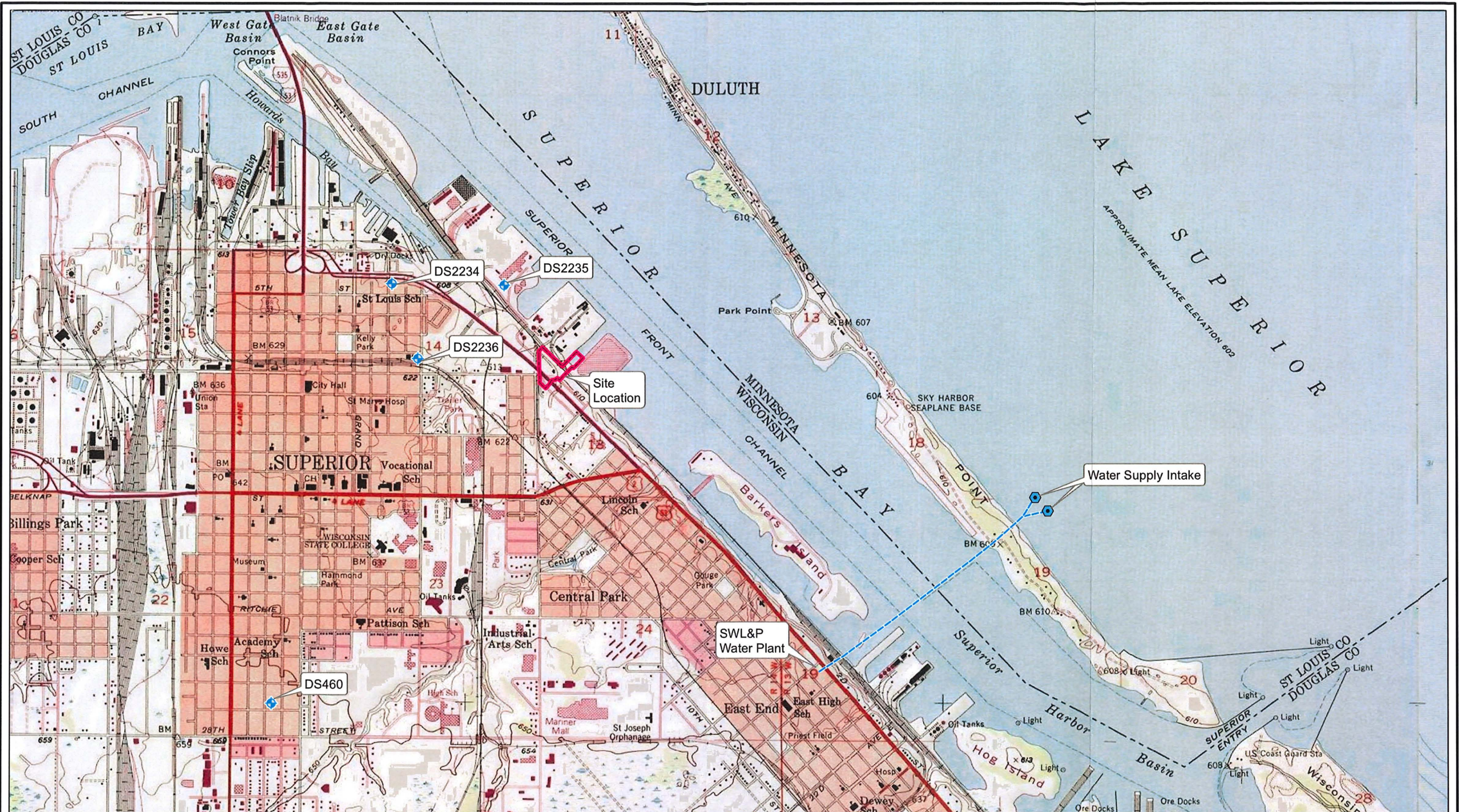


Brian J. Stanul, PE
Project Environmental Engineer
Licensed in WI, MI & OH



Brian D. Symons, PE
Senior Technology Manager
Licensed in SC, GA, TN, AR, LA, OK, WI, IL,
MO, KS, KY, NE, CO, UT, OR, MT, WV, & NJ

Drawings



- NOTES:**
1. Topographic basemap supplied by Esri and its suppliers.
 2. Horizontal coordinate system: NAD 1983 Douglas County, units in feet.
 3. Public Water Supply Wells generated using WDNR Well Viewer and ENSR International.

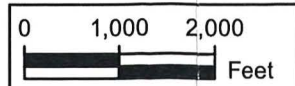
- LEGEND**
- Water Intake
 - Water Supply Well
 - Approximate Water Supply Pipeline
 - Approximate Site Boundary



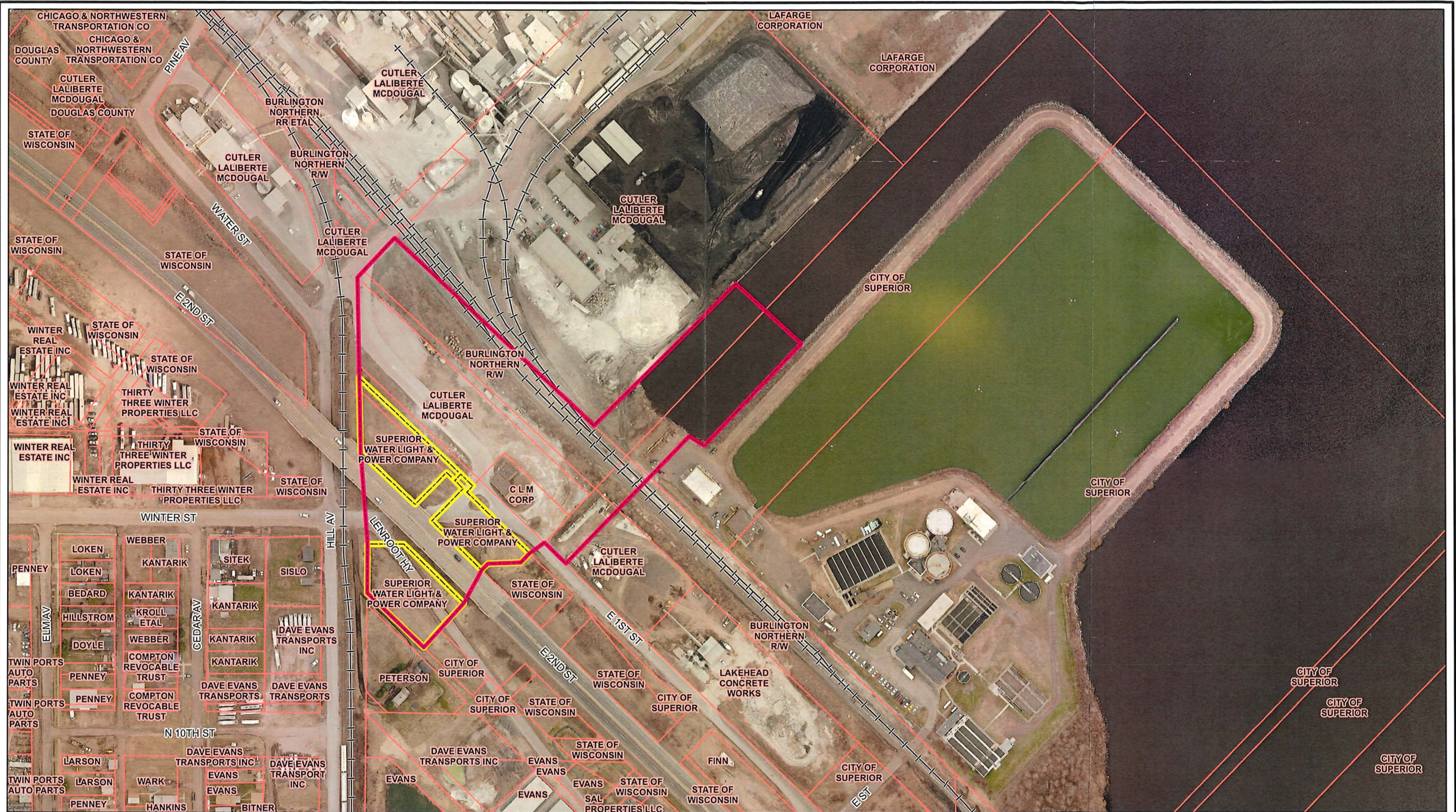
SUPERIOR WATER, LIGHT & POWER

FIGURE 1-1
SITE LOCATION MAP
REMEDIAL ACTION OPTIONS REPORT
SUPERIOR, WISCONSIN

This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.



Date: DECEMBER 2020	Revision Date:
Drawn By: DAT	Checked By: HLH
Project: 18S024	



- NOTES:**
1. 2016 - 3" resolution air photo from Douglas County.
 2. Horizontal coordinate system: NAD 1983 Douglas County, units in feet.
 3. Parcels supplied by Douglas County GIS.

- LEGEND**
- Owned by Superior Water, Light & Power
 - Railroad
 - Tax Parcel
 - Approximate Site Boundary

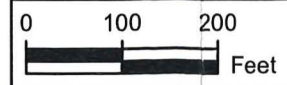


SUPERIOR WATER, LIGHT & POWER

FIGURE 2-1

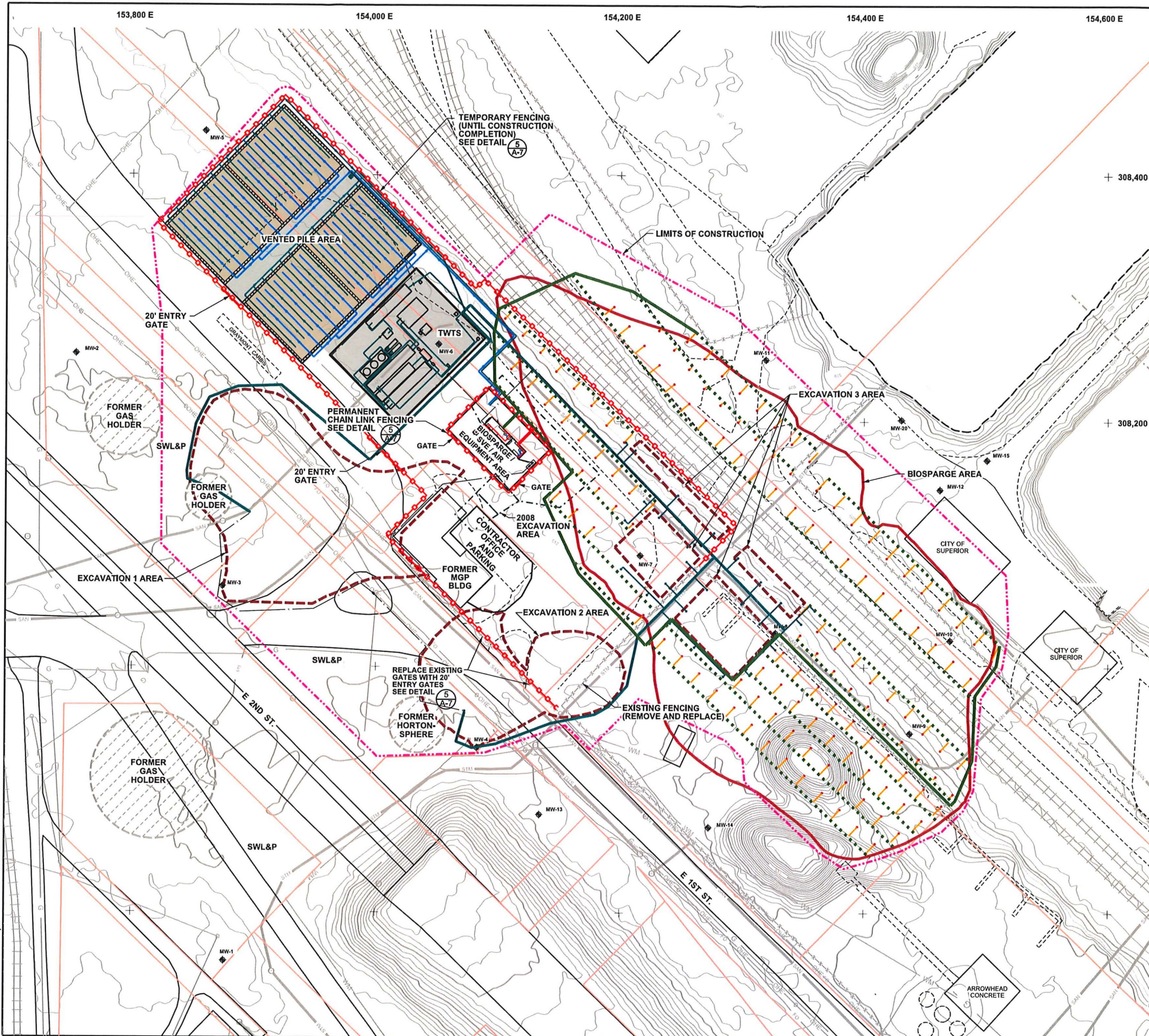
PROPERTY OWNERSHIP
REMEDIAL ACTION OPTIONS REPORT
SUPERIOR, WISCONSIN

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LEGEND

- BOAT SLIP BOUNDARY
- ▭ EXISTING BUILDING
- - - - - FENCE
- 605 GROUND SURFACE ELEVATION
- PROPERTY BOUNDARY
- STORM SEWER PIPE
- SANITARY SEWER PIPE
- FD FIBER OPTIC
- RAILROAD
- EXISTING ROADWAYS
- - - - - IMPERVIOUS AREA LIMIT
- - - - - LIMITS OF CONSTRUCTION
- - - - - TEMPORARY FENCING
- 2008 EXCAVATION AREA
- EXCAVATION AREA
- MW-11 MONITORING WELL
- BIOSPARGE AREA
- WASTEWATER TREATMENT PLANT (WWTP) PIPE
- DEWATERING WELL
- HORIZONTAL SVE PIPE
- BIOSPARGE LATERAL PIPE AND WELL
- SVE AND BIOSPARGE MAIN HEADER PIPE
- ASPHALT AREA

NOTES:

1. HORIZONTAL COORDINATE SYSTEM: NAD 1983 DOUGLAS COUNTY, UNITS IN FEET.
2. 2016 - 3" RESOLUTION AIR PHOTO FROM DOUGLAS COUNTY.
3. STORM AND SANITARY DATE SUPPLIED BY DOUGLAS COUNTY GIS.
4. ELECTRIC, GAS AND WATER DATASETS SUPPLIED BY SUPERIOR WATER, LIGHT & POWER.
5. SEE DRAWING B-1 FOR PLACEMENT OF TEMPORARY CONSTRUCTION FENCING DURING EXCAVATION

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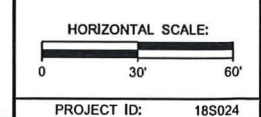
UPLAND AREA REMEDIAL ACTION DESIGN DRAWINGS FOR THE FORMER MGP SITE
SUPERIOR WATER, LIGHT & POWER
DOUGLAS COUNTY WISCONSIN

NO.	BY	DATE	DESCRIPTION

RECORD DRAWING OF COMPLETED CONSTRUCTION BY: _____
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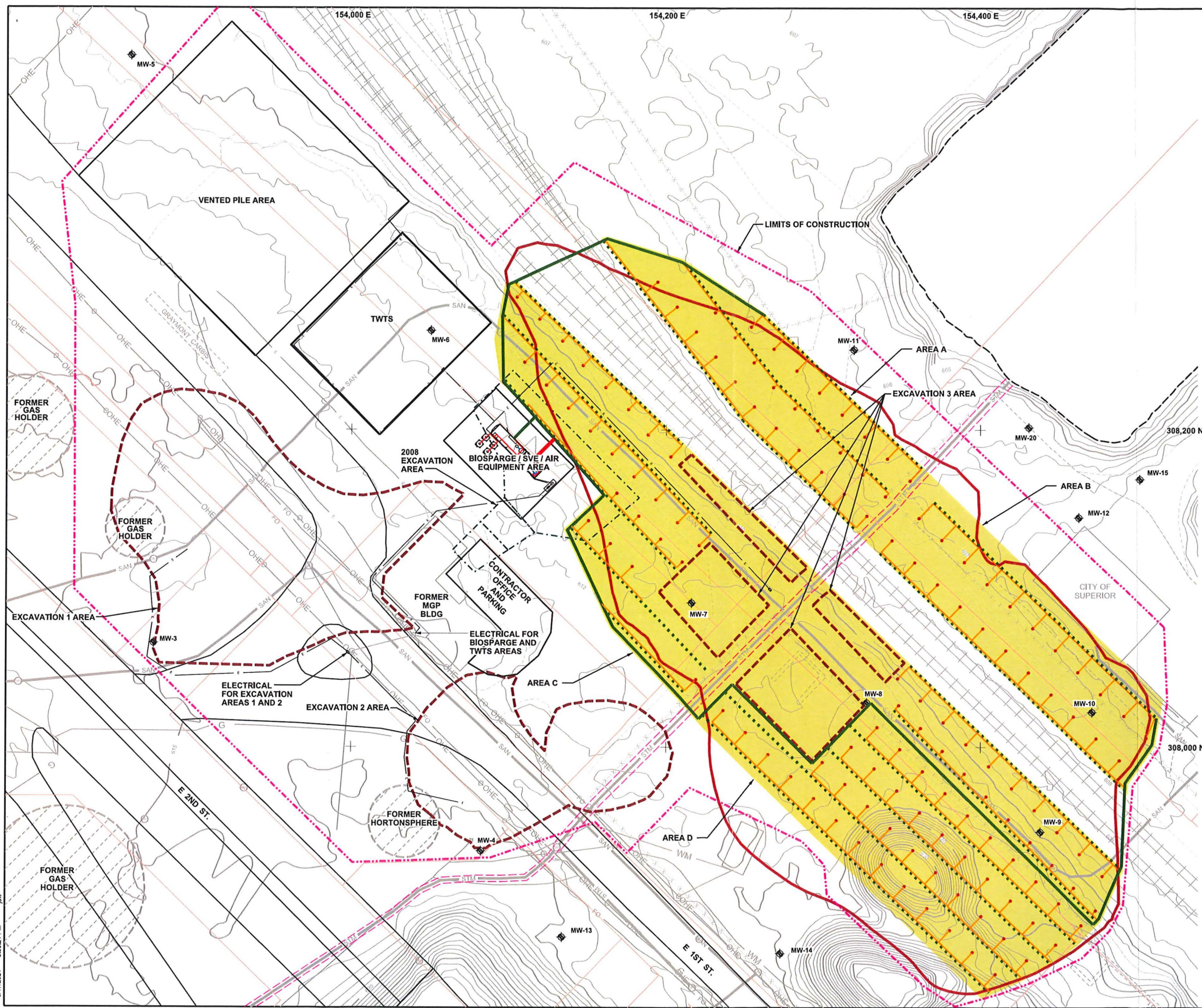
DATE OF PREPARATION		
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SURVEYED		
DRAWN	JOW	JUNE 2021
DESIGNED		
CHECKED	BDS1	JUNE 2021

SITE LAYOUT PLAN



DRAFT

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LEGEND

- BOAT SLIP BOUNDARY
- G05 — GROUND SURFACE ELEVATION
- - - - - EXISTING FENCE
- STM — STORM SEWER PIPE
- SAN — SANITARY SEWER PIPE
- RAILROAD
- LIMITS OF CONSTRUCTION
- 2008 EXCAVATION AREA
- EXCAVATION AREA
- BIOSPARGE AREA
- HORIZONTAL SVE PIPE
- BIOSPARGE WELL AND PIPE
- HORIZONTAL SVE/BIOSPARGE MAIN HEADER PIPE
- BIOSPARGE/SVE DISTURBED AREA SEE NOTE 5
- ◆ MW-9 MONITORING WELLS

NOTES:

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4. ELECTRIC, GAS AND WATER DATASETS SUPPLIED BY SUPERIOR WATER, LIGHT & POWER.
5. REMOVE AND STOCKPILE SURFACE COVER TO 6 INCHES AND GRADE EVENLY TO FACILITATE WELL AND PIPING INSTALLATION. FOLLOWING WELL AND PIPING INSTALLATION, PLACE TOPSOIL OR GRAVEL AS NEEDED AS SHOWN ON DRAWING A-12.

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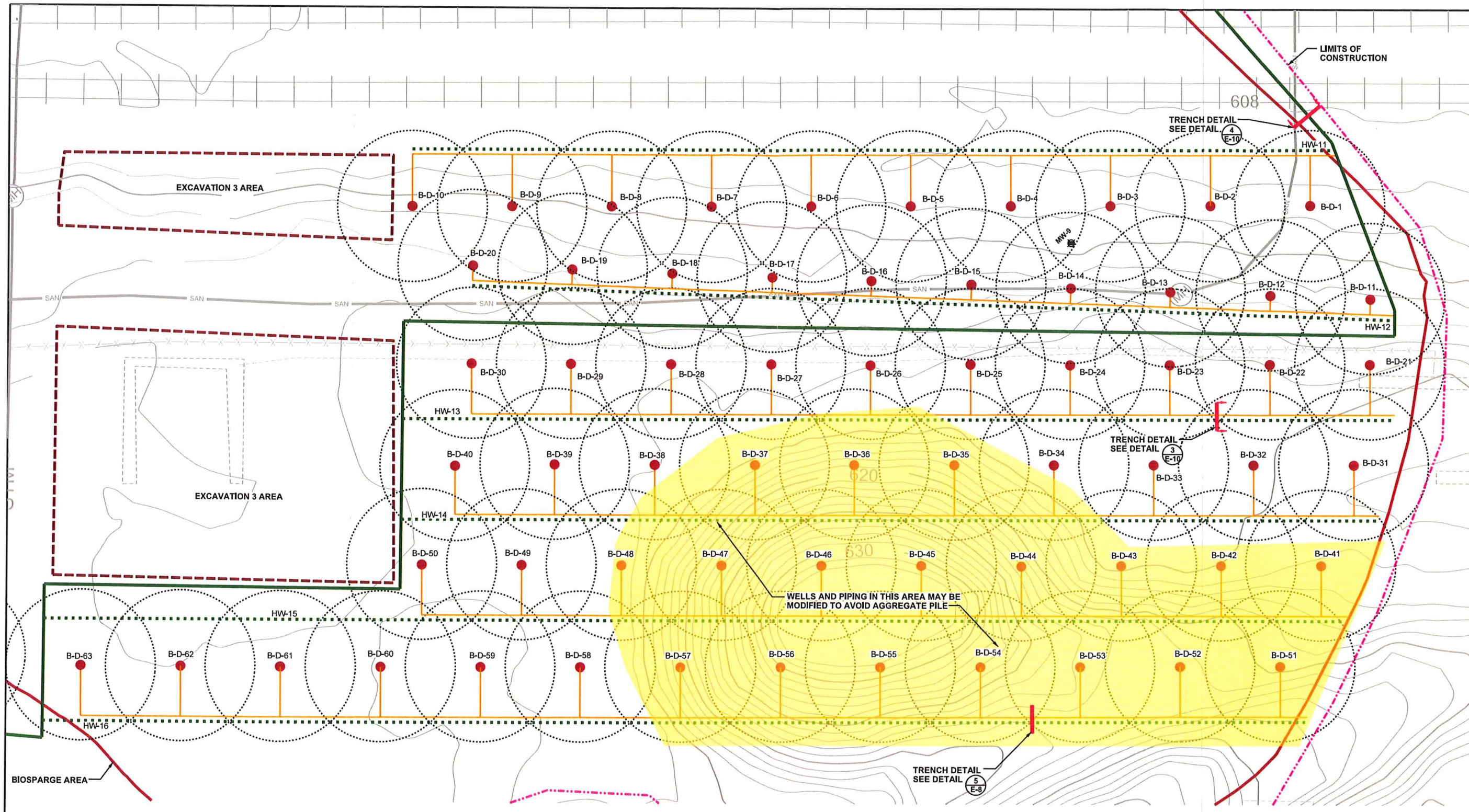
BIOSPARGE/SVE DETAIL PLAN

HORIZONTAL SCALE:
0 30' 60'

PROJECT ID: 18S024

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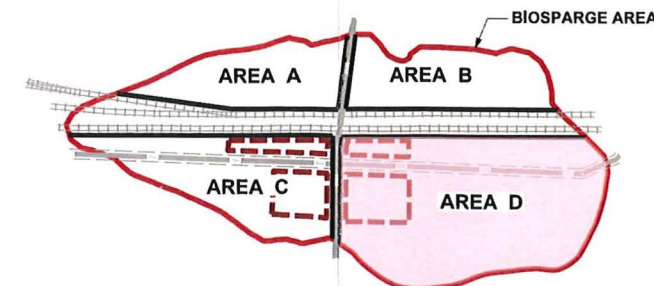


LEGEND

- 605 — GROUND SURFACE ELEVATION
- SIM — STORM SEWER PIPE
- SAN — SANITARY SEWER PIPE
- RAILROAD
- LIMITS OF CONSTRUCTION
- MW-9 MONITORING WELL
- EXCAVATION AREA
- BIOSPARGE AREA
- HORIZONTAL SVE/BIOSPARGE MAIN HEADER PIPE
- HW-12 — HORIZONTAL SVE PIPE
- B-D-1 BIOSPARGE LATERAL PIPE AND WELL
- ZONE OF INFLUENCE

NOTES:

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3. STORM AND SANITARY DATE SUPPLIED BY DOUGLAS COUNTY GIS.
4. ELECTRIC, GAS AND WATER DATASETS SUPPLIED BY SUPERIOR WATER, LIGHT & POWER.
5. ZONE OF INFLUENCE ESTIMATED, TO BE FIELD-VERIFIED DURING PILOT TESTING.



LOCATION MAP
NOT TO SCALE

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S&P

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DESIGN DRAWINGS
FOR THE
FORMER MGP SITE**

SUPERIOR WATER, LIGHT & POWER

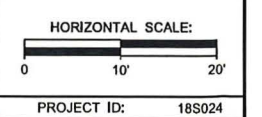
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WISCONSIN

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DRAWN	JUN 2021
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CHECKED	BDS1 JUN 2021

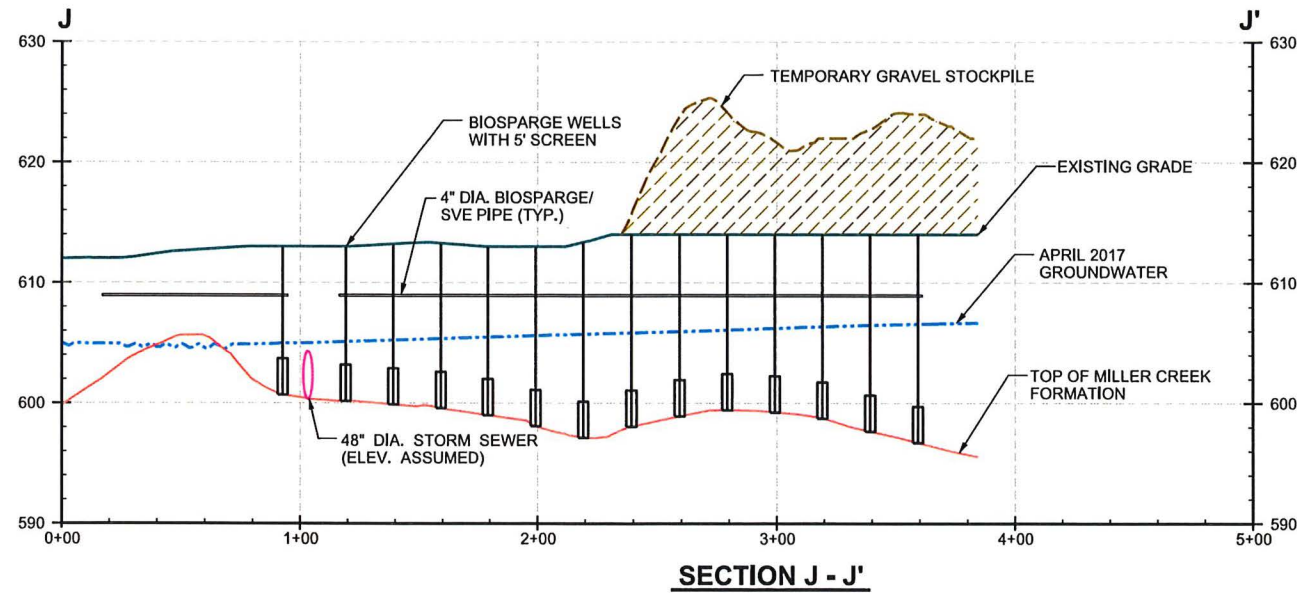
**BIOSPARGE/
SVE DETAIL D**



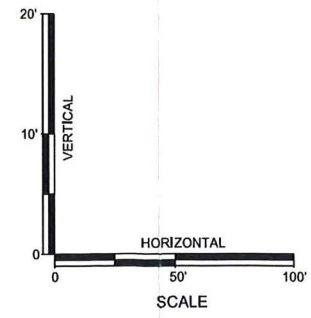
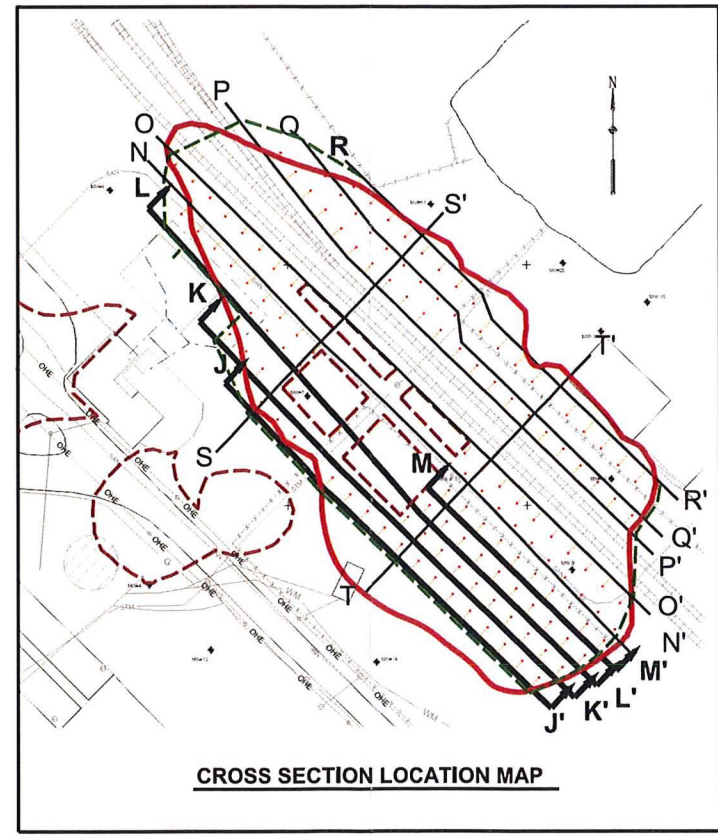
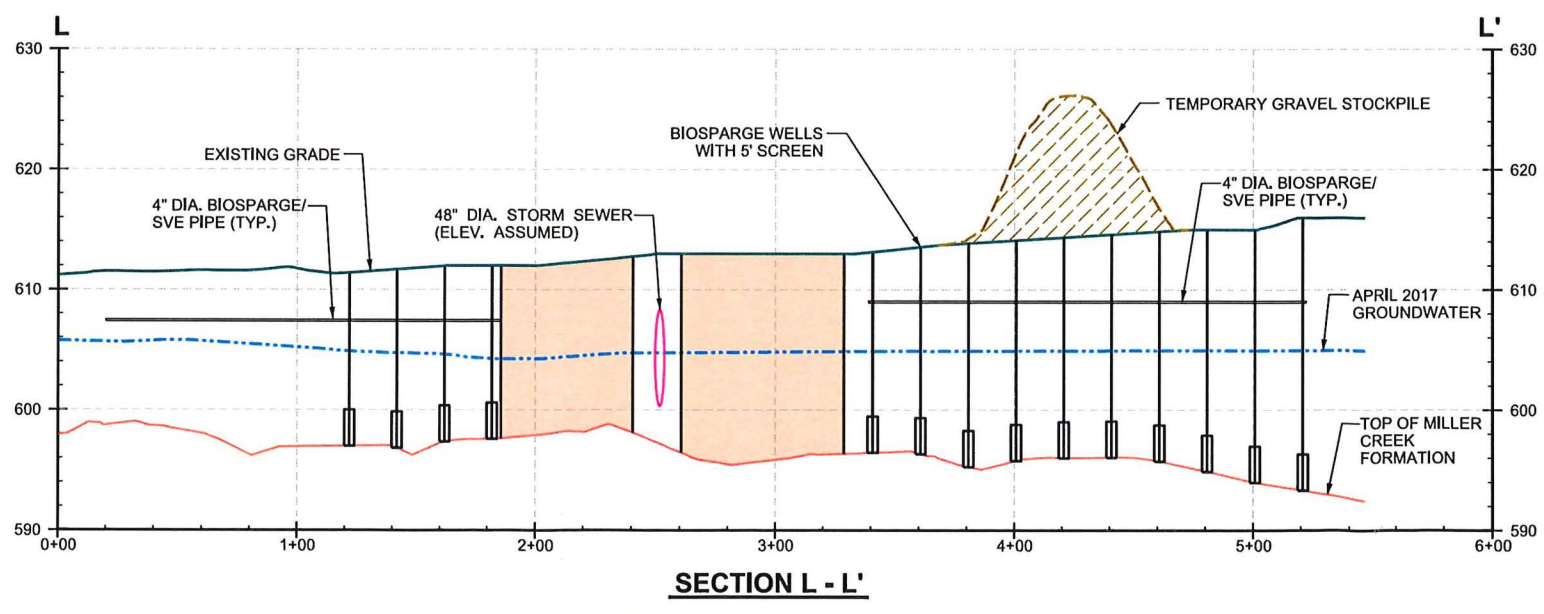
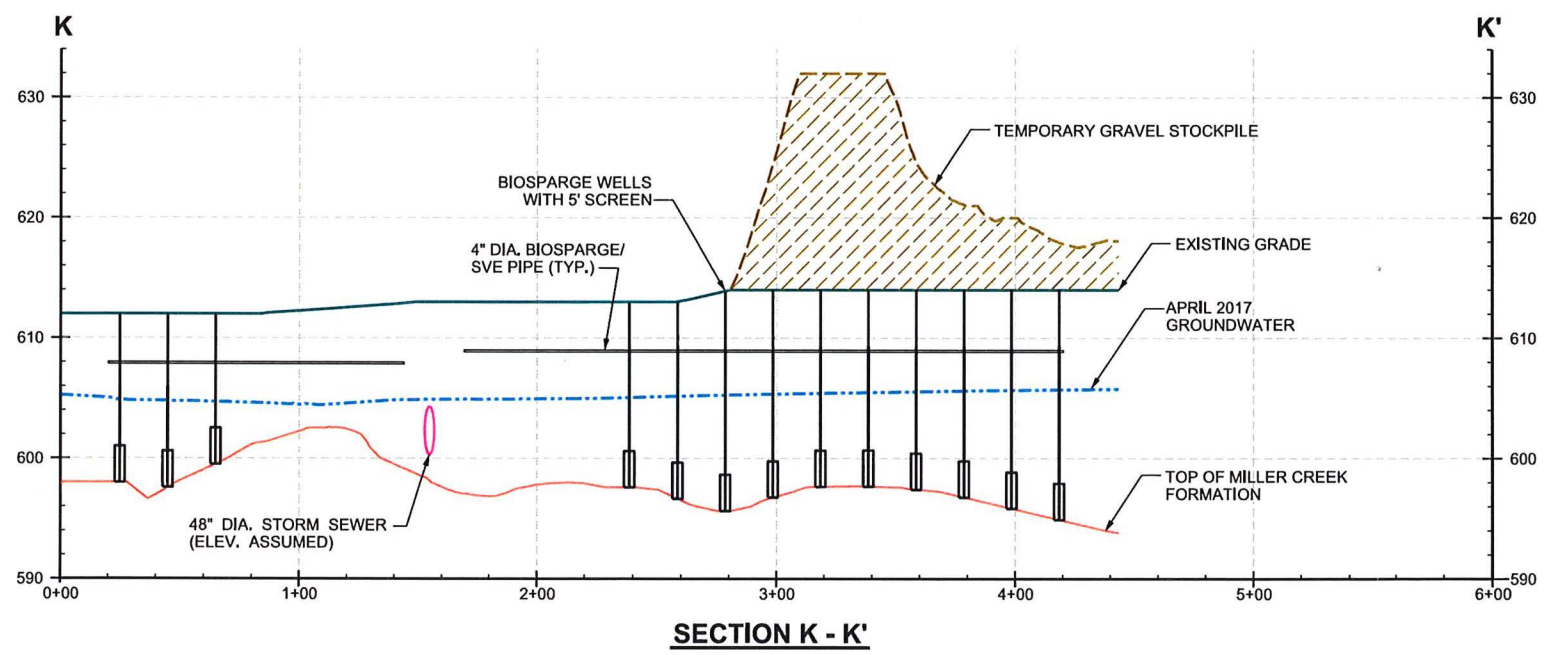
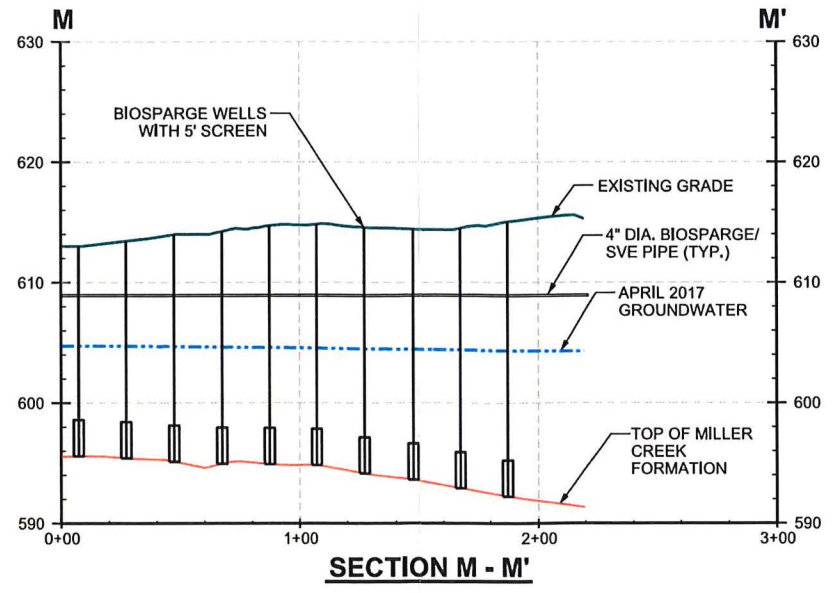
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E-5

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- NOTES:**
1. MINIMUM 3' RISER BETWEEN THE TOP OF SCREEN AND THE HIGH WATER TABLE.
 2. CAN INSTALL SCREEN INTO MILLER CREEK FORMATION UP TO 1.5 FT. (MINIMUM 1.5 FT. SCREEN ABOVE MILLER CREEK FORMATION)



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**UPLAND AREA REMEDIAL ACTION
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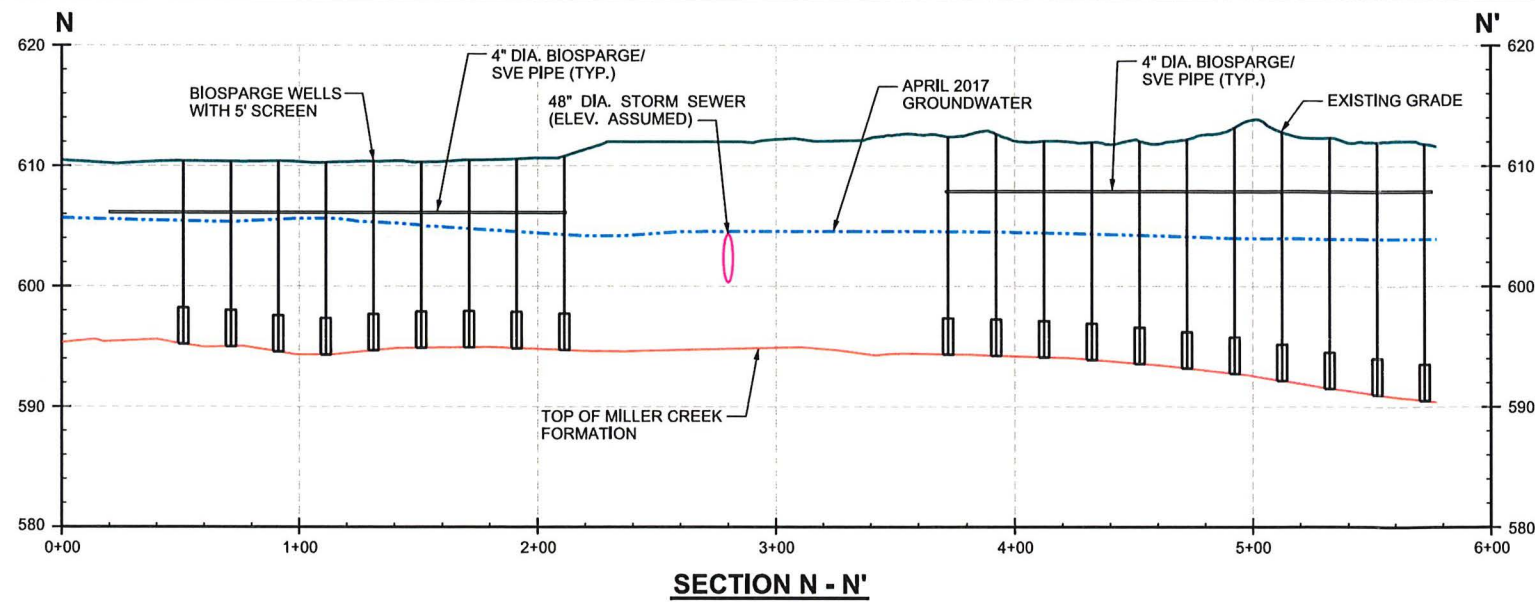
DATE OF PREPARATION	
BY	DATE
SURVEYED	
DRAWN	JOW JUNE 2021
DESIGNED	
CHECKED	BDS1 JUNE 2021

**BIOSPARGE / SVE
 WELL PROFILES
 J-J', K-K', L-L', M-M'**

SCALE: AS SHOWN

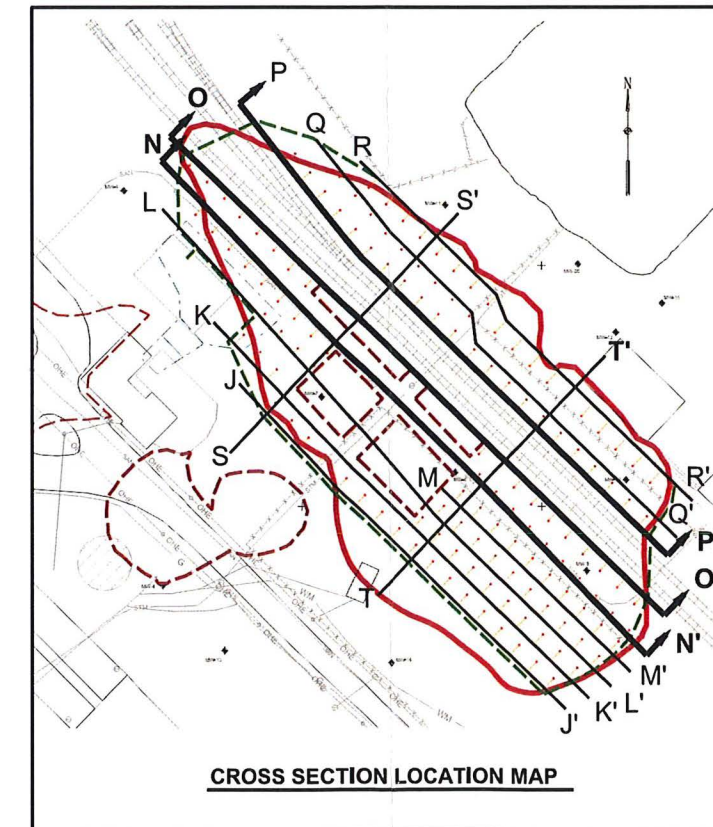
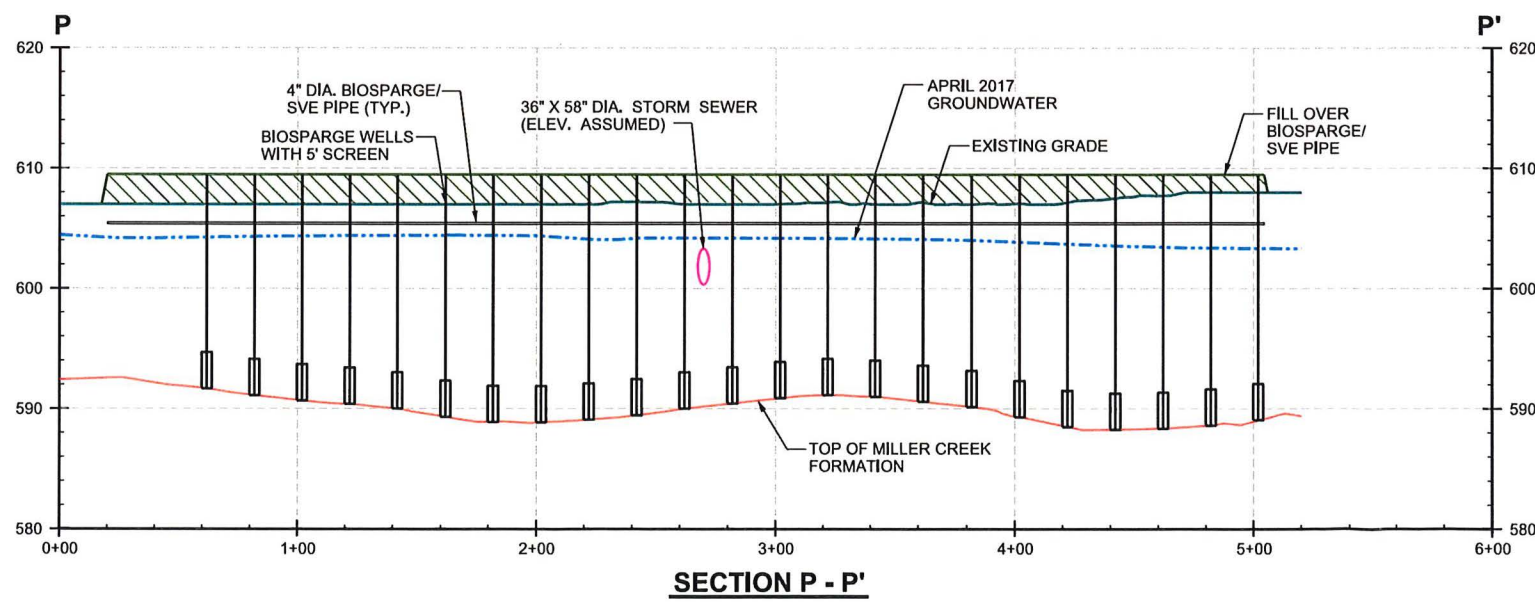
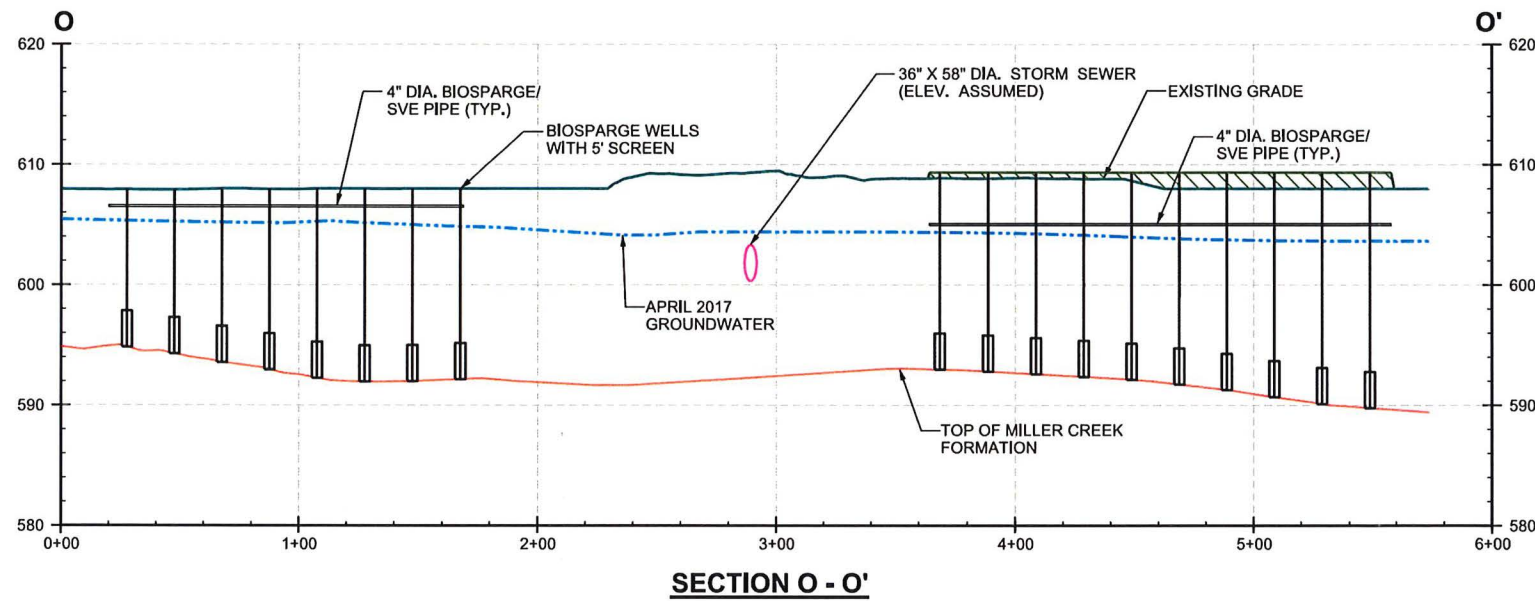
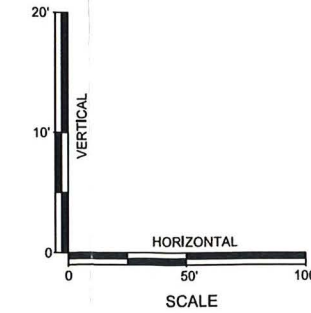
PROJECT ID: 18S024

E-6



NOTES:

1. MINIMUM 3' RISER BETWEEN THE TOP OF SCREEN AND THE HIGH WATER TABLE.
2. CAN INSTALL SCREEN INTO MILLER CREEK FORMATION UP TO 1.5 FT. (MINIMUM 1.5 FT. SCREEN ABOVE MILLER CREEK FORMATION)



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DATE OF PREPARATION	
BY	DATE
JOW	JUNE 2021

BIOSPARGE / SVE WELL PROFILES N-N', O-O', P-P'

SCALE: AS SHOWN

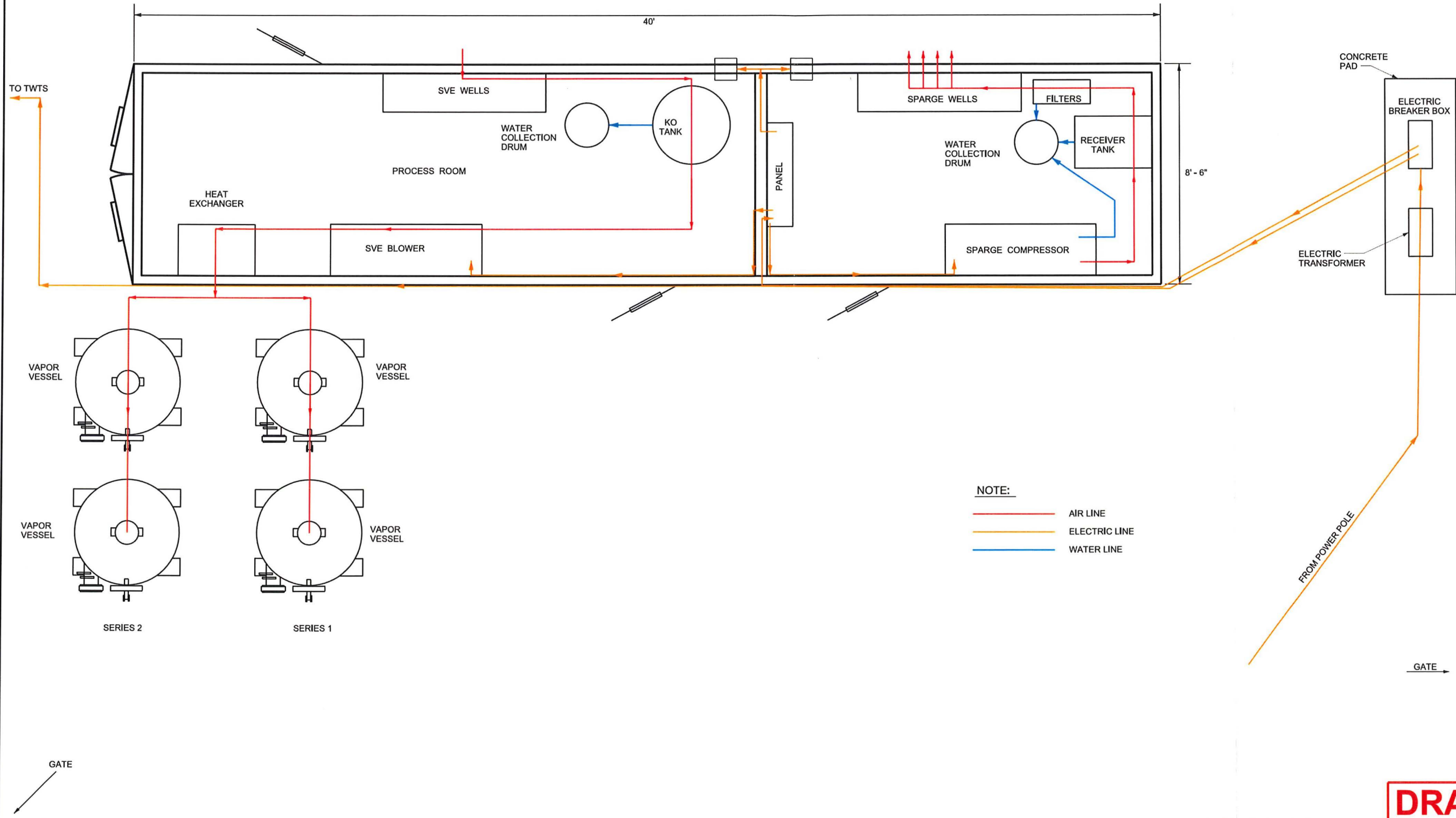
PROJECT ID: 18S024

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E-7

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NOTE:

- AIR LINE
- ELECTRIC LINE
- WATER LINE

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SUPERIOR WATER, LIGHT & POWER

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BY	DATE
SURVEYED	
DRAWN	JOW JUNE 2021
DESIGNED	
CHECKED	BDS1 JUNE 2021

**BIOSPARGE / SVE
EQUIPMENT
LAYOUT**

NOT TO SCALE

PROJECT ID: 18S024

F-1

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