



April 16, 2021

Mr. Greg Prom
Superior Water Light and Power Company
2915 Hill Avenue
Superior, WI 54880

SUBJECT: 60% Remedial Action Design Report – Upland Area,
Superior Water Light and Power Manufactured Gas Plant
Winter Street and USH 53, Superior, WI
BRRTS ID: 02-16-275446

Dear Mr. Prom,

The Wisconsin Department of Natural Resources (DNR) has completed a review of the March 2021 60% Remedial Action Design Report, Upland Area, Former Manufactured Gas Plant (RAD), submitted to the DNR on your behalf by Foth Infrastructure and Environment, LLC (Foth). The RAD is for the remedial action option conditionally approved by the DNR on January 28, 2021 for the upland portion of the former Superior Water Light and Power (SWL&P) Manufactured Gas Plant (Site) only. A Field Sampling Plan (FSP), Air Management Plan (AMP), Remedial Action Quality Assurance Plan (QAPP) and an Erosion Control and Storm Water Management Plan (ECSWMP) were submitted to the DNR along with the RAD. The DNR received a \$1050 fee for review of the RAD.

The term “Site” is used in this letter as defined in §NR700.03 (56) and includes the area of contamination near the former manufactured gas plant (MGP) gas holder and Hortonsphere as well as the MGP discharge area north and east of the former manufactured gas plant including the BNSF Railway ROW, City of Superior property, wastewater treatment plant (WWTP) property and retention pond, Cutler Laliberte McDougal Corporation properties, Lakehead Concrete Works and the area of contaminated sediment in the slip west of the WWTP where manufactured gas plant contamination was detected.

DNR reviewed the RAD, FSP, AMP, QAPP, and ECSWMP for compliance with Wis. Stats. ch. 292 and Wis. Admin. Code chs. NR700 – NR754. DNR’s review is not an engineering review nor does it constitute approval of the engineering design or approval for other permits or permissions that SWL&P must obtain for construction and/or operations of the remedial action. Foth is certifying through their PE stamp(s) that the design is adequate for the proposed work. The DNR did not complete a detailed review of all the supporting documentation contained in the appendices.

DNR’s comments on the RAD, FSP, AMP, QAPP, and ECSWMP are presented below:

Remedial Action Design Report

RAD Section 1.3:

Applicable or Relevant and Appropriate Requirements (ARARs) is terminology used by the United States Environmental Protection Agency (USEPA) during investigation and cleanup of Superfund sites. The Site is not a Superfund site. Therefore, specific ARARs have not been established as they would be under Superfund. The term ARAR should not be used. The remedial action conducted at the site will be evaluated against the requirements contained in Wis. Stats. ch. 292 and Wis. Admin. Code chs. NR700 – NR754 and other applicable chapters of Wis. Stats. and Wis. Admin. Code.

RAD Section 1.3.1:

The soil excavation performance standards selected for the Hortonsphere, gas holder, and PAH discharge areas are not based on remediating soil contamination to a concentration the DNR considers protective of groundwater quality. Supplemental remedial action, air sparge and soil vapor extraction (SVE), will be performed in the MGP discharge area which should reduce concentrations of some of the more volatile contaminants in this area of the site but may leave in place high concentrations of polycyclic aromatic hydrocarbons (PAHs). The Hortonsphere and the gas holder areas currently have no active supplemental remedial action planned and as a result will leave very high concentrations of contaminants left in place following the excavation activities. SWL&P is relying on natural attenuation as the final remedial action for the remaining contamination. The DNR believes a final natural attenuation remedial action may not be adequate for the high concentrations of contamination expected to remain following the active remedial action of excavation, air sparging and SVE operation. When the active remedial action is completed, SWL&P will need to complete an evaluation of site conditions and make a determination if natural attenuation is appropriate as a performance standard for the remaining contamination. If, following remedial action activities, the closure requirements contained in Wis. Admin. Code ch. NR726 cannot be met, the DNR may conclude under Wis. Admin. Code §726.13 (2) (b) that additional response actions are necessary.

RAD Section 1.3.3:

Monitoring groundwater to demonstrate natural attenuation is necessary until a stable or receding groundwater contaminant plume can be demonstrated. It also needs to be demonstrated that natural attenuation will remediate the remaining contamination in a reasonable period of time as required in Wis. Admin. Code § NR726.05 (6) (b). Given the nature of this site and slow groundwater movement through the Miller Creek Formation clay and the high concentrations of contamination proposed to be left in place and not actively remediated, 8 quarters of quarterly groundwater monitoring may not be adequate to demonstrate the performance criteria of a stable or receding contaminant trends and support a natural attenuation final remedial action.

RAD Section 2:

The fourth paragraph in this section references Activity and Use Limitations (AULs). AUL is not a term used in Wis. Admin. Code chs. NR700 - NR754. Continuing obligations can be imposed by the DNR at the time of closure or at the time of remedial action plan approval under Wis. Admin. Code § NR722.15 and ch. NR726. As a condition of ROAR approval, the DNR imposed continuing obligations and requested SWL&P to develop and submit a database package for posting on the BRRTS database as part of the remedial action design including notification to affected property owners. Continuing obligations do not expire at the time of monitoring well abandonment as stated by Foth but are imposed until it can be shown that they are no longer needed through additional investigation or remedial action.

RAD Section 2.1.2:

The DNR does not issue a notice to proceed for remediation projects. This is the responsibility of SWL&P.

RAD Section 2.14

The DNR interprets the plan for groundwater monitoring following active remedial action to mean that following the establishment of a stable or receding groundwater contaminant trends, that a minimum of 8 quarterly rounds

of sampling will be conducted to confirm the groundwater contaminant plume remains stable or receding. The DNR does not foresee granting case closure under Wis. Admin. Code ch. NR726 with only 8 rounds of monitoring following shut down of the air sparge and SVE systems at this site due to the high concentrations of contamination planned to remain in place at the Site.

RAD Section 2.1.5:

The remedial action goals for the soil removal including the 5mg/kg for soil excavated greater than four feet below grade for benzene and 100mg/kg for total PAHs is not based on Wis. Admin Code ch. NR720 residual contaminant levels (RCLs) for protection of groundwater. Therefore, it is expected contamination will remain on Site following the remedial action with concentrations of contaminants far greater than the Wis. Admin. Code ch. NR720 RCLs for the protection of groundwater. Placing additional monitoring wells downgradient of the Hortonsphere, gas holder, the MGP discharge area excavations, an additional well downgradient of the air sparge/SVE area near the city garage, and piezometers nested with replacement monitoring wells MW-3R and MW-4R to monitor groundwater contaminant characteristics 5-10 feet below the final excavation depth will allow better monitoring of groundwater contaminant plume characteristics during and following remedial action activities. The DNR may reconsider the installation of the piezometers if confirmation soil samples from the Hortonsphere and gas holder excavations do not indicate contamination remains greater than the Wis. Admin. Code NR720 RCLs for the protection of groundwater.

RAD Section 2.2.1, 2.2.1.1, and 2.2.1.2:

Wis. Admin. Code § NR718.03(5) defines the term “contaminated soil”. Soil with any detections of contaminants is considered by the DNR to be contaminated. Contaminated soil managed during the remedial action activities must be done following the requirements of Wis. Admin. Code ch. NR718. The DNR suggests modifying Section 2.2.1, 2.2.1.1, and 2.2.1.2 to specifically address the requirements of Wis. Admin. Code ch. NR718. Wis. Admin. Code §NR718.12 (1) (c) 7 states responsible parties may not replace excavated contaminated soil where this would pose a threat to human health or the environment. Contaminated soil with concentrations of contaminants below the industrial direct contact RCLs are typically above the RCLs for the protection of groundwater and are therefore considered by the DNR to be a threat to the environment. The DNR may consider the reuse of soil on site if contaminant concentrations in the soil are below the Wis. Admin. Code NR720 soil to groundwater RCLs.

RAD Section 2.6.1:

Excavating soil in the MGP gas holder and Hortonsphere area only to the industrial RCLs will leave a large mass of contamination in place that poses a threat to groundwater quality. The DNR was under the impression from the language in Section 3.3.2 of the January 2021 Remedial Action Options Report – Upland Area that a greater volume of soil was to be excavated from these areas.

In addition to comparison of confirmation soil samples to standards in the FSP, comparison of the results to the Wis. Admin. Code ch. NR720 RCLs for the protection of groundwater is also necessary. The Wis. Admin. Code NR720 RCLs for the protection of groundwater are not referenced in the FSP. Clarification is needed on the expected contamination that will remain following excavation in the area of the MGP gas holder and the Hortonsphere.

RAD Section 2.6.2;

See comment for Section 2.2.1, 2.2.1.1, and 2.2.1.2.

Visual observation alone is not adequate to determine if excavated soil is contaminated or uncontaminated. Excavated soil should be managed as if it were contaminated until it can be proven through analysis that is not. Soil sampling requirements for management of contaminated soil is contained in Wis. Admin. Code NR718.12 (1)(e). These sampling requirements should be followed for all excavated soil.

RAD Section 2.8.2:

See comment for Section 2.2.1, 2.2.1.1, and 2.2.1.2.

RAD Section 2.10:

The DNR believes backfilling should be completed with similar material that was excavated and properly compacted for the various areas of the site so as to not create areas of artificial hydraulic head in the area of the Hortonsphere and MGP gas holder or areas of substantially different porosity and permeability in the MGP discharge area excavations that could affect performance of the air sparge and soil vapor extraction (SVE) systems.

RAD Section 2.10.1:

See comments for Section 2.10.

There is not a definition or explanation of the term “excavation criteria”. Provide reference or specify where in the RAD the “excavation criteria” are listed.

RAD Section 2.13

See comment for RAD Section 2.10.

RAD Section 2.14

See Comment for RAD Section 2.1.5

RAD Section 3.1.1:

See comments for Sections 2.2.1, 2.2.1.1, and 2.2.1.2

RAD Section 3.2:

Permit equivalency and ARARs are USEPA Superfund terminology and process. Since the Site is not a federal Superfund site the use of these terms should be avoided. See comment for RAD Section 1.3. SWL&P will need to obtain and comply with any permit necessary for implementation and completion of the remedial action.

RAD Table 3-1:

See comment for section 3.2. Do not use the term “Permit Equivalency”. The term “Permit Equivalency” is a USEPA Superfund term and is not applicable at this Site. This appears to be a table of required permits and approvals.

RAD Section 4.1.1:

The performance standards proposed by Foth and listed in Table 2-1 of the FSP do not include the Wis. Admin. Code ch. NR720 RCLs for protection of groundwater. The DNR will evaluate soil contaminant concentrations remaining following the remedial action using both the Wis. Admin. Code ch. NR720 RCLs for direct contact as well as for groundwater protection.

Wis. Admin. Code ch. NR724 does not contain specific performance standards for soil as stated in the first of three criteria listed in this section. A more specific reference will be needed to indicate what section of Wis. Admin. Code ch. NR724 this refers to.

The second of the three criteria in this section mentions the Miller Creek Formation. The DNR understands the excavation in the MGP discharge area will extend to the top of the Miller Creek Formation. However, the DNR was under the impression the excavations associated with the Hortonsphere and the MGP gas holder area would extend into the Miller Creek Formation to remove additional contaminant mass.

RAD Section 4.1.2.2:

This section references a performance criteria of 100mg/kg benzene for use in developing the excavation prisms for the Hortonsphere and gas holder area. Section 1.3.1 references excavations below 4 feet have a target benzene concentration of 5 mg/kg. It is not clear in the RAD what concentration of contaminants are being targeted for removal in the Hortonsphere or the MGP gas holder area. Neither of the above referenced concentrations represents a RCL developed under Wis. Admin. Code ch. NR720 for the protection from direct contact or for the protection of groundwater. Either performance criteria concentration will leave very high concentrations of contamination in place that may make a natural attenuation remedy for the remaining contamination unfeasible without additional remedial action. Response action goals for closure of a site under Wis. Admin Code ch. NR726 are contained in Wis. Admin. Code §NR726.05(4). Criteria for closure of sites with groundwater contamination must meet the requirements of Wis. Admin. Code §NR 726.05(6).

RAD Section 4.1.3:

Section 4.1.3 does not mention soil sampling following active remedial action. Soil sampling following active remedial action is necessary for demonstration of remedial action effectiveness. See also the comments for Section 1.3.3 and 2.1.5 above.

RAD Section 4.3.2:

Limiting the air sparging and SVE system to areas of the Site with concentrations of benzene greater than 10mg/kg will leave very high concentrations of contamination in place that are not covered by the active remedial action. Completing a partial active remedial action may make it difficult for the Site to meet the response action goals for closure of a site contained in Wis. Admin. Code §NR726.05(4). Criteria for closure of sites with groundwater contamination must meet the requirements of Wis. Admin. Code §NR 726.05(6).

RAD Section 4.3.3:

It is the DNR's understanding that the air sparge/SVE system will not be installed beneath the gravel pile in the Area D quadrant. It is also the DNR's understanding that soil samples will be collected from every air sparge well installed. Upon receipt of sample results for the air sparge wells that can be installed surrounding the gravel pile, SWL&P should assess the results and review historical site investigation results and determine the need for active remedial action beneath the gravel pile. If active remedial action is deemed necessary the air sparge system could potentially be expanded with the use of horizontal air sparge and SVE wells or some other remediation technology utilized. If this is not feasible then the gravel pile will need to be listed as a structural impediment to investigation and remedial action and listed on the DNRs database and notification given to the property owner.

RAD Section 4.4.1:

See Comment for Section 1.3.

RAD Figure A-8:

Add the locations for the additional monitoring wells and piezometers discussed in this letter.

RAD Figures B-4, B-5, B-6 and B-7:

It would be helpful on these figures to show the replacement monitoring well proposed construction including screen, filter pack, fine sand, and bentonite seal intervals.

RAD Figure C-2 Detail 2/C2:

This detail contains a notation "area flushed by water flow" that requires additional explanation.

RAD Figure E-7 Detail 1/E7:

It appears the soil venting pipe is mislabeled in this detail.

Field Sampling Plan

FSP Section 2.4:

The DNR cannot provide waivers on requirements of NR700 – NR754. If, following the remedial action, the closure requirements contained in Wis. Admin. Code NR726 cannot be met, additional site investigation, remedial action, or monitoring may be necessary.

FSP Section 4.4:

See comment from Section 2.2.1, 2.2.1.1, and 2.2.1.2 of the RAD above.

FSP Section 4.4.1:

Visual observation alone is not adequate to determine if excavated soil is contaminated or uncontaminated. Excavated soil should be managed as if it were contaminated until it can be proven through analysis that is not. Soil sampling requirements for management of contaminated soil is contained in Wis. Admin. Code NR718.12 (1)(e). These sampling requirements should be followed for all excavated soil. See the comments associated with Section 2.2.1, 2.2.1.1, and 2.2.1.2 of the RAD above.

FSP Section 4.5.1 and 4.5.2:

If the soil being treated in the vented soil stockpile is being reused at the Site, then sampling requirements contained in Wis. Admin. Code § NR718.12 (1) (e) apply. If soil from the vented soil stockpile is being disposed of in a landfill than the sampling and analysis required by the landfill apply.

FSP Section 4.8.1:

See comments to Section 2.1.5 of the RAD.

FSP Section 6.2.1:

See comments for QAPP Section 4.4.2.

FSP Section 6.5:

Laboratories used must be accredited for the analysis conducted under Wis. Admin. Code ch. NR 149.

FSP Section 7:

The DNR will evaluate soil analytical results against the Wis. Admin. Code ch. NR720 RCLs for protection of direct contact and groundwater protection as well as the Wis. Admin. Code ch. NR140 groundwater standards for groundwater analytical results. The Wis. Admin. Code ch. NR720 RCLs as well as the Wis. Admin. Code ch. NR140 groundwater standards should be referenced in any depiction sampling results in tables and figures.

FSP Section 8:

If, following the remedial action, the closure requirements contained in Wis. Admin. Code NR726 cannot be met, additional site investigation, remedial action, groundwater monitoring may be necessary.

FSP Section 8.2 and 8.3:

The remedial action objectives for contaminated soil developed by Foth for this Site are not based on Wis. Admin. Code ch. NR720 RCLs for the protection of groundwater. If confirmation samples indicate an exceedance of a Wis. Admin. Code NR720 direct contact RCL at the limits of the excavation within the top four feet of soil, further remedial action may be necessary. Also, if the remaining soil contamination and groundwater contamination following remedial action do not allow for the closure of the site under Wis. Admin. Code ch. NR726 additional investigation, remedial action, or monitoring will be necessary.

FSP Table 2-1:

Table 2-1 does not list the Wis. Admin. Code ch. NR720 RCLs for the soil to groundwater pathway which remaining soil contamination at the Site will be evaluated against by the DNR. Wis. Admin. Code ch. NR720 RCLs for the soil to groundwater pathway should be included in Table 2-1.

Air Management Plan:

The DNR currently has no comments on the Air Management Plan submitted by Foth. However, the DNR intends to share the document with the Wisconsin Department of Health Services (DHS) for comment. The DNR and DHS may have comments on this document following review by DHS.

Remedial Action Quality Assurance Project Plan

QAPP Section 1.2.2:

See comment for FSP Section 6.5.

QAPP Section 2.5:

The number of groundwater samples in the QAPP should be modified based on the new total number of wells to be sampled.

QAPP Section 4.4.2:

This section references field duplicates are to be conducted at a rate of 1 to 20 normal samples. Section 2.5 of the QAPP references duplicates being collected at a rate of 1 to 10 samples. The DNR typically requests one duplicate sample per 10 samples collected. Wis. Admin. Code § NR716.13 (6) (c) 1 requires one duplicate sample for every 10 or less water samples collected.

QAPP SOPs:

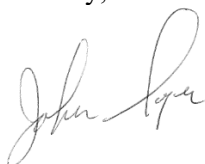
The DNR has not conducted a detailed review of the Foth SOPs contained in the QAPP.

Erosion Control and Stormwater Management Plan:

The DNR Remediation and Redevelopment Program has not conducted a detailed review of the ECSMP. As stated in the ECSMP, SWL&P will need to obtain a Construction Site Water Permit from the DNR Wastewater Section and a Stormwater Management Permit obtained from the City of Superior. SWL&P should work with the DNR Wastewater Section and the City of Superior for review and approval of this Plan.

The DNR appreciates the opportunity to comment on the RAD. Please contact me at john.sager@wisconsin.gov or call me at 715-919-7239 if you have questions or if you would like to discuss the contents of this letter.

Sincerely,



John Sager
Hydrogeologist
Remediation and Redevelopment Program

C: File

Erin Hughes, Foth