The Reese Group
Environment, Compliance, Construction

February 21, 2023

To: Jeff Ackerman
Hydrogeologist
Fitchburg Service Station
3911 Fish Hatchery Road
Fitchburg, WI 53711

RE: Millennium Forms
550 E. Centralia Street
Elkhorn, Wisconsin, 53121
BRRTS No. 02 65-587693

Jeff,

The Reese Group, LLC has prepared responses to your concerns regarding our previously submitted Site Investigation Report for Millennium Forms. The response has been organized to address each concern with a response.

If you have questions regarding the attached document, please contact me at treese@the-reese-group.com or by telephone at 414-719-1477. Thank you for your assistance.

Sincerely,

THE REESE GROUP, LLC

Christine A. Reese, P.G
President

Subject: Review of Site Investigation Report and Remedial Actions Options Evaluation
Millennium Forms, 550 E. Centralia St., Elkhorn, WI BRRTS # 02-65-587693

Dear Mr. Hauk:

The Department of Natural Resources (Department) reviewed the "Site Investigation Report and Remedial Actions Options Evaluation" (Report) for the Millennium Forms site in Elkhorn, Wisconsin (Site). The Report was prepared on your behalf by The Reese Group (TRG) and submitted to the Department on Millennium Forms LLC's behalf on June 22, 2022. A Wis. Admin Code ch. NR 749 review fee was included with the submittal.

The Department has reviewed the Report for compliance with Wis. Admin. Code ch. NR 716 and determined a corrected report is needed. The Report contains errors and internal inconsistencies, shows the work did not comply with the workplan and administrative code requirements, and is missing supporting documentation and analysis. Additional site investigation may also be necessary.

The Department recommends a teleconference with Millennium Forms and the Department to discuss the project prior to preparation and submittal of a corrected Site Investigation Report. Please contact the DNR project manager, Jeff Ackerman, at 608-219-2302 or jeffrey.ackerman@wisconsin.gov to schedule a teleconference or to discuss this letter.

The remainder of this letter includes a discussion about:

- the source area of the contamination,
- missing or incomplete elements of the site conditions,
- the remedial options evaluation, and
- a general discussion of errors and inconsistencies in the Report, including areas where the current evaluation of the data warrants clarification and/or does not meet administrative code requirements.

Site investigation goals are part of the cleanup rules. Several of goals were not met by the investigation and current site investigation report, such as:

- Wis. Admin Code § NR 716.07(2) requires the evaluation of the type and amount of contamination
- Wis. Admin Code § NR 716.07(3) requires the evaluation of the history of hazardous substance discharges and environmental pollution
- is. Admin. Code§ NR 716.11(3)(a) requires the field investigation to determine the nature, degree, and extent of the hazardous substance or environmental pollution in all affected media

Source Area

The information in the Report identifies chromium and hexavalent chromium as the contaminants of concern at the site. However, the Report is unclear about the source(s) of the known chromium contamination. Several possible sources for the chromium contamination are implicated, including the current operations.

RESPONSE: *Section 6.1 - The Conceptual Site Model has been updated to clarify "Potential Source Areas".*

The DNR provides the following comments on the potential contaminant sources discussed in the Report:

- Pages 2, 3, 22, 23, and 25 reference "impacted concrete" within a historical trench system, and it is unclear whether this contributes to contamination at the Site. No data is provided about the concentrations, locations, or mass of contaminants within the concrete. Provide a discussion and/or

data about the referenced impacted concrete.

RESPONSE: *Section 6.1 - The Conceptual Site Model has been updated to clarify "Potential Source Areas" which includes the former trench system. A discussion about the physical observations made during the SI was expounded upon and two photographs were added to Appendix E to demonstrate the color of the concrete that infilled the trench system.*

- Page 2 states there are groundwater enforcement standard exceedances in the area surrounding the former trench and the chromium plating process tank. Discuss whether the chromium plating process tank is still being used and whether it is a potential source of contamination

RESPONSE: *Section 6.1 - The Conceptual Site Model has been updated to clarify "Potential Source Areas". The process tank(s) are currently being used, but based on the results of the SI activities, they do not appear to be a source. The process tanks are installed in a lined containment area that drains by gravity to the concrete containment pit.*

- Page 2 states there are soil exceedances adjacent to the former trench and existing process tank. Discuss whether the existing process tank is the tank referenced as "chromium plating process tank" in the Report and whether it is a potential source of contamination.

RESPONSE: *This statement has been revised. Soil Industrial Direct Contact Residual Contaminant Level exceedances for hexavalent chromium include boring locations adjacent to a former trench and the existing process tank containment pit". The process tank(s) are currently being used, but based on the results of the SI activities, they do not appear to be a source.*

- Page 10 states, "The total chromium/hexavalent PAL and ES exceedances are likely related to current industrial operations."

RESPONSE: *I believe this statement is found on Page 7 in the Section "Groundwater" (not page 10) and is a conclusion made from the investigative activities completed as part of the Phase II ESA and was a statement believed to be true at that time.*

- Page 15 states the area of hexavalent chromium soil impacts is in the vicinity of the former trench system and an existing containment pit that collects spillage. Discuss whether the existing containment pit is a potential source of contamination.

RESPONSE: *This statement has been revised. The area of hexavalent chromium soil impacts is primarily in the 1 to 2' bgs intervals in the vicinity of a former trench system and the existing containment pit (near TRG SB-5), located west of the current process tank(s). The containment pit is used to collect spillage as the tiles move from process tank to process tank. The process tanks are installed in a lined containment area. Any spillage that occurs as the tiles move from one tank to another is transported on top of the liner to the concrete containment pit.*

We do believe the existing containment pit is a potential source of contamination and will be addressed as part of the implementation of the remedial alternative. However, a 72-hour integrity test of the containment pit was completed in July 2022 by Millennium Forms personnel to evaluate the liquid tightness of the concrete pit. This was completed by filling the pit with water and marking the level. After every 24 hours for 72 hours the level in the pit was checked to determine if any leakage had occurred. It appeared that the level was stable and had not dropped in the past 72 hours.

- Page 17 states "The source of the soil contamination appears to be the former trench system and the existing industrial manufacturing process that includes the use of chromium for plating tiles."

  RESPONSE: *Based on the results of the Site investigation activities conducted to date, it appears that the primary source of the soil contamination is the former trench system; a suspected source is the existing containment pit.*

- Figure 3 shows two areas of soil contamination. The narrative of the report sometimes refers to a "source area" or "source areas". Discuss and clarify the conceptual site model and identify known or potential sources at the Site.

  RESPONSE: *Section 6.1 - The Conceptual Site Model has been updated to clarify "Potential Source Areas" which includes the former trench system (known) and the existing containment pit (suspected).*

- Page 20 identifies an "on-site wastewater treatment system". Discuss the design of the on-site wastewater treatment system and include its location on all applicable figures.

  RESPONSE: *The wastewater treatment facility consists of holding tanks, chrome reduction reactors, treated wastewater storage tanks, sludge storage tanks and a plate and frame filter press, piping, pumps, controls, etc. This is a zero-discharge wastewater treatment facility. Treated wastewater is transferred from a final holding tank to tanker trucks for offsite treatment and disposal. Precipitated sludge is pumped to a plate and frame filter press. Filtrate is transferred through the filters to the treated water tank sequence. The filter cake is hauled off-site for proper treatment and disposal.*

  All figures have been updated to show the location of the wastewater treatment facility.

- Known or suspected source areas should be included on all applicable figures.

  RESPONSE: *Noted.*

  - With respect to several of the statements, the nature of any on-going discharge(s) should be described in more detail and discussed with your DNR Hazardous Waste Inspector, Randy Malek.

  RESPONSE: *The known source area is the former trench system. The containment pit is a suspected source due to the concentrations of constitutes of concern in both soil and groundwater in this area. A 72-hour integrity test of the containment pit was completed in July 2022 to evaluate the liquid tightness of the concrete pit. This was completed by filling the pit with water and marking the level. After every 24 hours for 72 hours the level in the pit was checked to determine if any leakage had occurred. It appeared that the level was stable and had not dropped in the past 72 hours. However, based on the results of the SI and a visual inspection of the pit, the containment pit is a suspected source of contamination and will be replaced as part of the remedial alternative described in Section 7.0 of the SI Report.*

  Also, if the existing industrial process and operations are a source of soil and groundwater contamination, those on-going issues must be addressed before performing additional investigation and remedial actions.

  RESPONSE: *The containment pit is a suspected source for soil and groundwater contamination. However, a 72-hour liquid tightness test was completed by Millennium Forms in July 2022. The water level in the pit did not decrease over the 72-hour time frame. However, it is our intention to implement the recommended remedial action as soon as possible and at that time rehabilitate and/or replace the containment pit to*

eliminate future concerns regarding potential releases to the environment.

Missing or Incomplete Evaluation of Site Conditions

The evaluation of soil contamination needs further evaluation. Revisions to figures are also needed.

- Figure 3 shows two source areas in an approximate 1 by 1 inch space, which is too small of a scale. The map showing the distribution of soil contaminants must be at a scale that provides reasonable clarity.

RESPONSE: *An insert was added that pulls out the area for greater clarity.*

- Page 3, section 6.5, states the average depth of contamination is 3 feet deep, over an area of 9,950 square feet. The next sentence states this equates to 9,950 cubic feet of contaminated soil, which is likely an error. Recalculate the mass of soil contamination and provide supporting calculations. Provide a map or maps supporting these calculations.

RESPONSE: *Completed.*

- Application of an average soil concentration to millions of pounds of contaminated soil is an imprecise way to determine contaminant mass. The same average concentration of contaminants is applied to two identified source areas. Calculate the concentration mass of contamination individually for all applicable source areas based on the best understanding of the spatial distribution of contaminants. Provide supporting calculations to determine contaminant mass.

RESPONSE: *Noted.*

- The mass of chromium on the impacted concrete and in groundwater are not included in the contaminant mass calculations. Provide additional information and/or clarification.

RESPONSE: *Concrete that was used to infill the trench was removed at four locations along its length and observed for staining that would be indicative of the presence of hexavalent chromium. Observations included bright yellow gold staining on the underside of the concrete that was in contact with the base of the trench. Based on these physical observations of the likely presence of hexavalent chromium (bright yellow gold staining), the concrete itself was not sampled but assumed to be a source area. This is verified through the analysis of soil and groundwater. Since the concrete was not sampled, it is not possible to estimate the mass of chromium.*

- Discuss the significance of chromium detected in the laboratory's method blank.

RESPONSE: *According to Eurofins, chromium detected in the laboratory's method blank does not impact the results of Millennium Forms sample analysis.*

- The cross sections need to be expanded and updated to include the analytical results.

RESPONSE: *Noted.*

The evaluation of groundwater chemistry and flow direction need additional evaluation.

- The Report states that only 3.5 to 14 gallons of groundwater was removed from each well during well development. For most water table wells that can't be purged dry, about 7 gallons per foot of standing water, or about 50 gallons of water per well, should be removed during well development. This issue of inadequate water removal may have been the result of an incorrect calculation of the amount of water in the

filter pack and well casing, as recorded on the well development forms.

Response: *The wells were adequately developed based on ch. NR141.21(2). This is discussed further in Section 3.2.1 Groundwater Sample Collection. The well development forms were updated.*

- The groundwater maps do not show contours of the water table surface and the data are not referenced to mean sea level (MSL). Provide updated groundwater flow maps that include the above-referenced standards.

  RESPONSE: *The groundwater flow figures have been updated. As was stated in the WDNR-approved workplan, a local benchmark was used as a reference and not MSL. The benchmark location is included on Figure 2 Detailed Site Map, Figures 4A and 4B and Figures 5A and 5B.*

- The hydraulic gradients calculated on Table 4 likely represent apparent gradients and not the slope of the water table. Provide the basis for this evaluation and correct the calculations, as needed.

  Response: *Hydraulic conductivity testing was completed at three locations, as the wells were installed in clay, silt and silty sands and groundwater recovery was slow. The hydraulic conductivity testing completed at these three wells is presented in their entirety in Appendix F. Table 4 was eliminated from the report. A detailed discussion on hydraulic conductivity is contained in section 6.4 Hydraulic conductivity. The worksheets for the calculations are included in Appendix F.*

- The workplan called for hydraulic conductivity testing at six wells, yet only three were reported. The analysis of the data is not presented in its entirety and the evaluation appears unreliable based on the information provided. Supporting information should be provided, including the assumptions used in the analysis and the formulas and/or model output and field notes.

  RESPONSE: *The other two wells did not recover in a timely manner and were eliminated from the program.*

- TRG states that preferential groundwater pathways, such as utility corridors, are not a concern. Provide the basis for TRG suggesting the utility backfill has the same hydraulic conductivity as the native glacial deposits. Discuss what the backfill material consists of and show the utilities on the map.

  RESPONSE: *TRG mapped the utility locations based on two methods, 1) Diggers Hotline – project planning (desktop maps), and 2) Diggers Hotline in-field utility locate. The figures have been updated with the utility locations. Our statement in the report regarding preferential pathways not being a concern stands.*

- The groundwater chemistry results should be discussed in more detail. For instance:
  Discuss why the four groundwater monitoring wells that were sampled twice (once in October 2021 and once in March 2022) show vastly different results from round to round. One round shows no detectable concentration of chromium or hexavalent chromium, and the other round shows elevated levels.

  RESPONSE: *The groundwater monitoring well analytical samples collected and analyzed by Pace Analytical Services in October 2021 were unfiltered, lab preserved and were presented as total Cr^{+6} in the laboratory report. Hexavalent chromium was analyzed using the SM 3500-Cr B, a colormetric method.*

  The groundwater monitoring well analytical samples collected and analyzed by Eurofins in March 2022 were field filtered and field preserved. The "Analysis Requested" was inadvertently noted as total

chromium and the results are noted as Total Recoverable Chromium in the laboratory report; however, the results reflect dissolved hexavalent chromium. Hexavalent chromium was analyzed using EPA Method 218.6, an ion chromatography method, which determines dissolved hexavalent chromium.

SM3500 Cr B and 218.6 both end up as colorimetric methods because they both use diphenylcarbazide to react with chromium to create a red-purple colored complex. 218.6 has the potential for much greater sensitivity because it is analyzed with an IC. All IC samples (218.6) get filtered through a 0.45 um filter prior to analysis. SM3500 would be filtered if there was obvious turbidity.

The discrepancies between the results may be due to several different factors, including, but not limited to: 1) different laboratory methodology, 2) different laboratories, 3) turbidity, and 4) time of year.

- Discuss the reliability of the data.

  RESPONSE: *The reliability of the laboratory analytical results appears to be of usable quality. The data are vastly different, likely due to the same reasons discussed in the previous bullet point.*

- Discuss whether this issue could be the result of improper well development.

  Response: *The wells were properly developed generally in accordance with NR141.21(2) – "Wells that can be purged dry shall be developed in a manner which limits agitation by slowing purging the wells dry".*

- Results from TRG TW-3 and TRG TW-9 indicate the hexavalent chromium concentration is substantially higher than the total chromium concentration in the same sample. These anomalous findings should be discussed, and the data quality may need to be reevaluated.

  Response: *According to Eurofins, the one thing that would cause a high bias in the colorimetric methods is turbidity. If the samples became cloudy or had precipitates form in solution, that would scatter the light and result in a high bias. A greater dilution might have helped to mitigate if this was the issue.*

- Discuss the data quality and reliability of samples that had missed holding times, as discussed on page 13 of the Report.

  RESPONSE: Pace Laboratories – October 2021:

  The P4 qualifier, "Sample field preservation does not meet EPA or method recommendations for this analysis", was added to the RCRA metals plus mercury as the samples were sent to the laboratory without preservation or field filtration. Based on conversations with Pace Analytical Services (Brian Basten), the method requirements for reporting dissolved metals are to filter the samples in the field and immediately preserve. If lab filtration of metals samples is performed, the lab is required to list the P4 flag by method. Pace does not believe that the results are negatively impacted, only that they needed to follow the reporting criteria for the method.

  The H1 qualifier "Analysis conducted outside the recognized method holding time" was added for hexavalent chromium. The sample was collected on Friday October 15, 2021, and received by the laboratory on Saturday October 16, 2021. It appears that the lab was unaware of the short hold time samples being delivered on a Saturday. Hexavalent chromium has a holding time of 24 hours, and the analyses were not initiated until Monday October 18, 2021. The method used by Pace was a colormetric methodology that analyzed for total Cr^{+6}. It is possible that the Cr^{+6} may have false low results due to biological degradation or breakdown that may occur.

The H6 qualifier "Analysis initiated outside of the 15 minute EPA required holding time" was added for pH. Generally, pH is a field parameter, but the field pH probe was not functioning properly, and the lab was requested to complete the test for pH. Holding time for pH is 15 minutes; and the pH readings were not initiated until Tuesday October 19, 2021.

Eurofins – March 2022:

The HF qualifier "Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request" was added for pH. Although, pH is a field parameter, the field pH probe was not functioning properly, and the lab was requested to complete the test for pH; holding time for pH is 15 minutes. Samples were collected on March 29, 2022, and the pH readings were completed at the lab on April 8, 2022.

According to Ray Shock, Technical Director at Eurofins "pH is defined as a field test that should be taken immediately upon collection of the sample (within 15 minutes). It can change after collection. The change really depends on the type of sample and buffering capacity. A surface water that is already in contact with the air probably won't change much, but a sample taken from a well may have been in very different conditions prior to collection and explosion to the atmosphere. Method 3500 states that the pH needs to be above 8 and 218.6 has to be buffered in the range of 9-9.5. Method 3500 states that total chromium can be analyzed in the same manner by acidifying the solution to a pH <2. While 7.5-8.5 isn't optimal, I wouldn't expect it to cause a great shift in the cr3/cr6 ratio".

- The duplicate sample results should be included in the data table.

Response: *The duplicate sample result has been added to the data table.*

- Where the quality control methods did not match that of the approved workplan, this discrepancy should be called out.

RESPONSE: *A section was added to the report called: DEVIATIONS FROM THE WORKPLAN.*

Soil vapor intrusion concerns need consideration and clarification.

- TRG's June 28, 2021, Site Investigation Workplan, which was approved by the Department, included three and a half pages of text explaining their plan and methods for performing high-volume purge sampling to assess vapor intrusion at three locations due to the finding of vinyl chloride at the site. Vinyl chloride is a volatile organic chemical (VOC). Page 11 states "Based on the results of the investigation activities conducted, no VOCs were detected in soil or groundwater. As such, a vapor intrusion assessment was not conducted." Similar statements are made on pages 5 and 19. However, Pages 7 and 16 discuss vinyl chloride groundwater standard exceedances at the Site. The groundwater standard exceedances are documented on Table 2.

RESPONSE: *Soil boring logs included soil type, general color (as opposed to Munsell), and other physical characteristics, where appropriate. The soil samples were also examined for obvious signs of contamination (odor, occurrence of free product, or unusual color/texture). A photoionization detector (PID), calibrated to an isobutylene equivalent gas standard, was used initially(October 2021) though following the absence of volatile organic compounds (VOCs) through laboratory analysis, PID readings were no longer included as part of the soil logging process. As the soils did not exhibit obvious signs of contamination, samples were chosen at an interval above the water table.*

Initially, one round of high purge volume (HPV) sub-slab vapor samples was suggested to evaluate the risk of vapor intrusion into the facility. However, as VOCs were not verified in the groundwater samples collected from NR141-compliant monitoring wells at the site, sub-slab vapor samples were not collected.

Note that Wis. Admin. Code NR § 716.15(2)(e) requires a discussion of any deviations from the approved site investigation workplan. Address and correct the inconsistencies in the Report and discuss any deviations from the workplan. This requirement was not met for the planned vapor intrusion sampling.

RESPONSE: *TRG did not perform the soil vapor intrusion scope of work because 1) the results of the groundwater monitoring event conducted on October 15, 2021, indicated that VOCs were not detected in any of the groundwater samples collected and analyzed, 2) Millennium Forms had not used any chlorinated solvents in their processing and or cleaning procedures, and 3) when approached, Eurofins/TestAmerica suspected carryover for cis-1,2 Dichloroethene and vinyl chloride. However, reanalysis confirmation was not completed due to the disposal of all samples.*

Remedial Actions Options Evaluation

The site investigation report does not meet regulatory standards and contains internal contradictions, factual inaccuracies, and the evaluation of soil and groundwater conditions is incomplete. Therefore, it is too soon to evaluate remedial options. The DNR provides the following comments:

- Identify the source area or areas of the chromium contamination.
- Determine the extent that the impacted concrete is contributing to contamination.
- Discuss to what extent the existing operations continuing to cause a problem.
- Discuss where the soil and groundwater contamination is located in relation to the current and former operations. Include this information on all applicable figures.
- Evaluate the contaminant mass and provide a better presentation, as discussed above.
- Assess groundwater conditions according to code and standard practice, with code-compliant well development, re-sampling of wells, proper water table maps, and a more reliable assessment of groundwater flow and preferential pathways.
- Evaluate and discuss the extent of the groundwater contamination. Determine whether the hexavalent chromium attenuates before becoming a risk to potential receptors or moving off-site.
- Address vapor intrusion concerns at the site.

Also, for your future reference, chemical treatment options for remediation usually necessitate additional groundwater and soil monitoring. Accounting for this need may change the outcome of the TRG's recent remedial option analysis to favor option #2.

Report Reliability and Completeness

It is the responsibility of the professionals overseeing the work and certifying the report to assure the information contained in the report is correct and that both the work that was performed and the document submitted are done in compliance with all applicable requirements.

The Department's review of the Report showed information that appears incorrect and/or work that was out of compliance with applicable requirements. The following section includes issues that were noted during review and need correction and/or clarification. Some of the issues may have been discussed in the preceding pages. The list is not intended to be all inclusive and it is possible there are other issues that should also be corrected.

TRG did not adequately describe deviations from the approved work plan. Wis. Admin. Code § NR

716.15(2)(e) states, "Where procedures differed from methods described in the work plan, the site investigation report shall include a description of the procedures used." The Department's review of the Report revealed no reference to variances from the workplan, although several instances were noted, including:

- No vapor sampling was conducted.
- Hydraulic conductivity testing of only three wells, compared to the six in the work plan.
- pH measurements were made by the laboratory rather than in the field.
- Not all specified quality control samples were collected.

RESPONSE: *Deviations from the work plan are contained in Section 6.7.*

Page 1 states the scope of work included "…eleven hollow stem auger soil borings (TRG SB-5 through TRG SB- 15) to depths of 15 to 16 feet below ground surface." The four boring logs provided in the appendix state the borings were advanced with a geoprobe (direct push) rig. Not all boring logs were included in the appendix.
Borehole abandonment forms were not provided.

RESPONSE: *All boring logs are included in Appendix A. Borehole abandonment form are presented in Appendix B.*

Pages 2, 16, and 18, state "the (groundwater) concentrations reported for total chromium are mostly comprised of hexavalent chromium", a statement which is not well supported by the data. A best-fit curve to the 18 data samples presented in the reported show 40 % of the groundwater chromium is in the hexavalent state. Three of the samples in the data set showed hexavalent chromium results that were higher than total chromium, and these anomalies are not addressed in the report. Finally, the results were highly variable at four wells sampled that were sampled twice, and the quality of the samples is questionable due to the improper well development.

RESPONSE: *Noted. This statement has been deleted from the report.*

Page 2 states, "As there were no detections of volatile organic compounds in soil or groundwater samples collected during Site Investigation activities, the soil vapor pathway was not assessed." Page 11 states "Based on the results of the investigation activities conducted, no VOCs were detected in soil or groundwater." These statements are inaccurate. Vinyl Chloride was detected in groundwater.

RESPONSE: *The Page 2 statement was made based on the results of Phase I of the Site Investigation. VOCs were not detected in soil or groundwater samples collected during the SI. Vinyl Chloride was detected in groundwater samples collected from temporary wells installed during the Phase II ESA. As these detections were not verified in samples collected from NR141-compliant monitoring wells installed during the first phase of the SI investigations,, VOCs were eliminated from the program. Additionally, TRG requested that Eurofins look at the possibility that cross contamination (carryover) occurred during the Phase II ESA GW sample analysis. Eurofins determined that carryover was a possibility due to the high concentrations of VOCs in the environmental samples run on the same machine as Millennium Forms samples. A revised laboratory report was issued and is included in Appendix D. Please refer to laboratory report revisions, which included the following statement "Suspected carryover for cis-1,2-Dichlororethen & Vinyl Chloride for samples 1 &2". Based on this statement TRG believes VOC were not present. This was confirmed with a second round of sampling that did not present VOC detections.*

Page 4 omits the phone number for you (as the responsible party representative.) This should be included.

RESPONSE: *The report is updated.*

Page 7 states, "Groundwater (GW) RCL exceedances for Vinyl Chloride were likely a result of a historical release(s) to the environment from past operations and/or historical use of solvents by former industries at the Site." Groundwater RCLs apply to contaminant leaching potential from soil. The Report includes no soil data showing RCL exceedances for vinyl chloride. Provide the missing data or correct the above statement.

RESPONSE: *The statement was deleted.*

This statement was made based on information obtained during the Phase II ESA investigation. The Phase II ESA groundwater samples were collected from temporary monitoring wells. However, during the SI NR141-compliant monitoring wells were installed, sampled, and analyzed for VOCs in groundwater. There were no detections of VOCs in groundwater from the samples analyzed during the SI. And as no VOCs were detected in soil samples collected during the site investigation activities, VOCs were not considered a contaminant of concern for the Site.

Pages 7 and 8 include background information in the recommendations section. This appears out of place within the Report and should be addressed.

RESPONSE: *Background information was deleted from this section.*

Page 9 states soils were described using the Munsell Color Classification System. This statement appears inaccurate because none of the submitted boring logs include Munsell colors within the soil descriptions.

RESPONSE: *This statement was edited to eliminate the reference to the Munsell Color Classification System:*

Page 9 states, "Portions of the soil from approximately every 2-foot interval of the subsurface were field screened." Based on the field screening results reported on the boring logs, this is not an accurate description. Most boring logs do not show a regular 2-foot interval for the field screening results and some of boring logs indicate no screening results at all.

RESPONSE: *TRG uses the WDNR Well Forms Program 4.4. This program does not allow putting in PID readings at every 2-foot interval, only per soil stratigraphy description. Pid screening was not performed once VOCs were eliminated from the program.*

Page 9 states, "Soil samples were collected at approximately two-foot intervals from each borehole using standard split-barrel sampling techniques in accordance with the American Society for Testing and Materials (ASTM) Standard Method for Penetration Test and Split-Barrel Sampling of Soil (ASTM Method D1586-11; ASTM, 2011)." The information on the boring logs do not corroborate this statement; the borings were done with a geoprobe rig and not a split-barrel sampling typically associated with hollow-stem auger drilling.

RESPONSE: *This statement was edited to say: "Soil samples were collected at approximately two-foot intervals from each borehole using a 7822 DT Track Mounted Geoprobe equipped with a macro-core sampler.*

Page 10 states, "The filter pack between the PVC screen and outer wall of the borehole was backfilled with a commercially packaged medium size grade sand from the bottom of the borehole to approximately six

inches above the screened portion of the well." The well construction documentation forms do not corroborate this statement. According to the forms, the **medium** size sand stops at the top of the well screen (i.e. zero inches above the screened portion).

RESPONSE: *Upon consultation with the driller (On-Site Environmental Services) the well construction documentation was revised for each of the boring logs.*

Page 10 states, "The wells were developed by surging and bailing with disposable plastic bailers and in general accordance with chapter NR 141 of the WAC. Well development consisted of emptying each well of water a minimum of 10 times, the well and filter pack volume." The well and the filter pack volumes calculations on the well development forms appear about 4.5 to 6.5 times lower than the correct volume. The well development volume appears to have been about 4.5 to 6.5 times too low, meaning the wells were not developed in general accordance with code.

RESPONSE: *This was due to the wells either going dry or having a slow recharge rate during the development process. As such the wells were developed in accordance with NR141.21(2). The well development logs and investigation methods have been updated to reflect this information.*

Page 11 states, "The elevation and horizontal location of each groundwater monitoring well were surveyed with respect to a known or designated benchmark on the Property. Elevations of the ground surface and top of the PVC well casing were surveyed." Survey data must be relative to mean sea level to meet code requirements. No survey data were provided in the report.

RESPONSE: *As was stated in the WDNR approved workplan the elevations of the ground surface and top of PVC well casing were surveyed to a known or designated benchmark on the Property. The benchmark is noted on Figure 2 – Detailed Site Map.*

The discussion of quality control on page 13 should be more thorough. TRG quotes a partial list of the data qualifier language from the laboratory reports. The discussion should include an evaluation of how the data qualifiers affect the reliability of the data. Some significant findings that could affect the site evaluation:

- Chromium was detected in the method blank that is applicable to most soil samples. Note, page 13 states, "All analytes were below the report limit in the method blank."
- One sample, TW-13 had to be re-analyzed, and that was done beyond the hold time.
- TRG did not collect all the duplicate and field blank samples prescribed in their workplan.
- The duplicate sample results discussed near the top of page 13 are not included in the table.

RESPONSE: *The SI Report was edited to address your concerns above. The duplicate sample results have been added to the table. The sample TW-13 was analyzed within the laboratory method required hold time and had a result of 3.3. However, TW-13 was also used as a lab control sample with a result of <3.2 and that sample was analyzed outside the hold time and included a qualifier of H.*

Page 14 states, "Seven soil samples were analyzed for RCRA Metals during the Phase II ESA and SI Investigation activities. There were no RCRA metals detected at concentrations greater than the Background Threshold Value, GW RCL, Non-Industrial DC RCL, or Industrial DC RCL." These statements are inaccurate for the following reasons:

- There were 24 samples collected in total.
- TRG SB-8 (0-2') and TRG SB-13 (0-2') exceed the Background Threshold Value for chromium.
- Nearly all arsenic results exceed the GW RCL.

RESPONSE: *Noted. The SI report has been revised to reflect corrected numbers.*

Page 15 states, "Table 3 contains groundwater elevation and water quality/natural attenuation parameter data that were measured in the field during groundwater monitoring in October 2021 and March 2022." This statement is not accurate. There are no groundwater elevation data or survey data on the table. There is no data from March 2022 on the table.

RESPONSE: *Table 3 has been updated in the report. A local benchmark was used to determine document soil/boring and well placement and depth to groundwater measurement, there was no survey completed at the existing facility. Page 15 was edited to reflect this change.*

Page 15 incorrectly states, "…all laboratory analytical data for groundwater samples collected at the Site during Phase II ESA and Site Investigation activities conducted in January 2021, October 2021, and March 2022." The data for the duplicate sample from MW-6 is not included on the table.

RESPONSE: *The data has been added to Table 2 Groundwater Analytical Data*

The presentation of the RCRA metals results on pages 15 and 16 is difficult to follow, is not concisely summarized in the data table, and misses a major finding.

- Most importantly, the finding that chromium results vary considerably from round-to-round is not discussed.
- The statement that "concentrations reported for total chromium are comprised mostly of hexavalent chromium." is not well supported by the data, as discussed above.
- The statement, "Arsenic was the only other RCRA metal [besides chromium] detected at concentrations that exceeded its PAL" is not accurate. Lead was detected above the PAL in TW-1 during January 2021.

RESPONSE: *The SI Report has been edited to reflect your concerns above.*

The discussion of supply wells found on pages 17, 18 and 19 appears inconsistent.

- Page 16, states "The nearest water supply well is located 0.16 miles to the west of the Property."
- Pages 17 and 18 state, "There are also no potable water supply wells within 1,000 feet of the Property. Therefore, potential contaminant migration to water wells is not considered a significant risk."

TRG's evaluation does not appear to meet the code requirement. Wis. Admin. Code §NR 716.07 requires "Potential or known impacts to receptors, including public and private water supplies; buildings and other cultural features; and utilities or other subsurface improvements. This evaluation shall include mapping the location of all water supply wells within a 1,200− foot radius of the outermost edge of contamination. More information should be provided about the water supply well that is 0.16 miles (845 feet) away from the property.

RESPONSE: *Figure 7 was added to the report which depicts the location of the nearest water supply wells within 1200 feet of the Property. These wells are located upgradient of the Site.*

Page 20 includes a confusing discussion of the status of investigation related wastes and states "The drums **were** stored on site in a secure location. Millennium Forms **will** coordinate waste transportation directly with the disposal facility and/or treated using the on-site wastewater treatment system." (emphasis added) Discuss whether the disposal was completed or is planned.

RESPONSE: *At the time of this submittal, Millennium Forms has profiled the waste and is awaiting their*

monthly waste pick up to complete the disposal process.

Page 22 references four "Laws and regulations that are applicable to this cleanup…" The Department recognizes this is not likely intended to be an exhaustive list, but it is worth noting that most of the 27 chapters of the Wis. Admin Code NR 700 series applies to this case, as other regulations incorporated by reference in those chapters, (e.g. Wis. Admin. Code ch. NR 141).

RESPONSE: *Noted. The following was added under the "Laws and Regulations Applicable to the Cleanup": The above is not an exhaustive list, as other chapters of the NR 700 series may also apply.*

Page 22 states, "No Action is not an effective measure in controlling or preventing the exposure of receptors to contamination at the Site." This sentence implies there are on-going exposures to receptors. However, the analysis provided in Section 6.2 of the report appears to conclude no on-going exposures, specifically:

- "…the potential for direct contact exposure is not considered a significant risk."
- "…potential contaminant migration to water wells is not considered a significant risk."
- "…the vapor pathway is not complete, and does not pose a risk to human health." This issue is highlighted here as an inconsistency that needs correction.

RESPONSE: *Whenever TRG conducts an evaluation of cleanup alternatives, a minimum of two different alternatives is considered plus No Action. This is a requirement for the USEPA Analysis of Brownfields Cleanup Alternatives. As that does not seem to be the case here, we have removed the No Action alternative from the evaluation criteria.*

Wis. Admin Code Ch. NR 720, and Wis. Stats. Ch. 292 require restoration of the environment and not a solely risk-based approach to cleanup.

Remedial alternative #3, TRG's recommended approach, would need to be supported with a design report, per Wis. Admin Code ch. NR 724. Apart from the code requirements for that report, some questions that should be answered include:

- What is the significance of the impacted concrete? Is it the primary source of contamination?
- Does alternative #3 include removal of impacted soil or just impacted concrete?
- The alternative appears to include removal of impacted concrete *and* treatment. This appears to be a combination of alternatives, and not an alternative by itself. Could treatment supplement alternative #2?
- How is this emulsion 'self-distributing'?
- How much emulsion is needed and how is it applied?
- Discuss the need for on-going monitoring and measurement of the effectiveness of the emulsion. Is post- treatment soil sampling recommended? Is the groundwater baseline chemistry adequate to gauge success of treatment?
- Discuss how the potential discharge(s) from the on-going operations will be addressed.

RESPONSE: *The concrete infill located in the historical trench is considered the primary source of contamination at the Site. The recommended alternative would include the removal of the impacted concrete to eliminate the primary source of contamination. The impacted soil and groundwater would be remediated with the proposed in-situ treatment. A discussion on the self-distributing emulsion is included below and in Section 7.0 of the SI report. Once the recommended alternative is selected a design report will be prepared to the WDNR for approval.*

The following information was provided by Regensis regarding the proprietary 3DME is comprised of a patented molecular structure containing oleic acids (i.e., a naturally occurring fatty acid that occurs in

animal and vegetable fats and oils) and lactates/polylactates (lactate component) which are molecularly bound to one another. As such the 3DME molecule contains both a soluble (hydrophilic) and in-soluble (lipophilic) region. These two regions of the molecule are designed to be in balance in size and relative strength. The balanced hydrophilic/lipophilic regions of 3DME result in an electron donor with physical properties that allow it to initially adsorb to the aquifer material in the area of application then slowly redistribute via very small 3DME "bundles" called micelles. These 3DME micelles spontaneously form within sections of the aquifer where concentrations of 3DME reach several hundred parts per million.

The micelles small size and mobility allow it to move with groundwater flow through the aquifer matrix passing easily through the pore throats in between soil grains resulting in the further redistribution of 3DME within the aquifer. This allows for advective distribution of the oleic acids which are otherwise insoluble and not able to distribute in this manner. This also allows for increased persistence of the lactate/polylactates component due to their initial attachment to the oleic acids. Due to 3DME's patented molecular structure, it has been observed that there is far greater transport when compared to blended emulsified vegetable oil (EVO) products (which don't distribute beyond the limits of pumping) and with much greater persistence when compared to soluble substrates such as lactates or simple sugars. In essence, the 3DME molecular structures capitalizes on the best features of the two electron-donor types while at the same time, minimizing their limitations.

3-D Microemulsion is delivered to the site as a ready-to-apply emulsion that is simply diluted with water to generate a large volume of a 3DME colloidal suspension. The actual suspension of 3DMe generated by this mixing ranges in size from micelles on the order of .02 microns to .05 microns in diameter to "swollen" micelles, also termed "microemulsions", which are on the order of .05 to 5 microns in diameter.

Once injected into the subsurface in high volumes, the colloidal suspension mixes and dilutes in existing pore waters. The micelles/microemulsions on the injection front will then begin to sorb onto the surfaces of soils as a result of zeta potential attraction and organic matter within the soils themselves. As the sorption continues, the 3DMe will "coat" pore surfaces developing a layer of molecules. This sorption process continues as the micelles/microemulsion moves outward and disassociates into their hydrophilic/hydrophobic components.

Basically, the 3DME will form little bundles in the water and at about 300ppm, the bundles breakdown, sticking the donor in place until fully fermented. The 3DME doesn't move at the same speed as groundwater, but typically is retarded to a third of the speed of groundwater movement. At the end of the day, the self-distributing properties allows us to put in few direct push points and still achieve good distribution for treatment.

Figures, Tables, and Appendices

Figure 2, the site map does not meet Wis. Admin Code § NR 716.15 (2)(c) 6 requirements. For instance, the underground utilities are not shown on the map and the known and potential hazardous substance sources are not shown on the map.

RESPONSE: *Figure 2 has been updated with the underground utilities and the known and/or potential hazardous substance source areas.*

Figure 3, the soil contamination map, does not have sufficient clarity or detail. For example:

- The map does not include a scale, as required under Wis. Admin Code § NR 716.15 (2)(a) 2.
- The Department estimates the soil source areas make up only 2% of the page, and so the map is not of appropriate scale, as required by Wis. Admin Code § NR 716.15 (2)(a) 1.

- There are no isoconcentration lines included on the figure, just a line showing the non-industrial residual contaminant level, so the map does not meet the requirements of Wis. Admin Code § NR 716.15 (2)(b) c.
- The map should also be the primary reference for estimating contaminant mass and evaluating data gaps, and it cannot be used for either purpose.

RESPONSE: *The soil contamination map has been updated.*

Figure 4, the groundwater contamination map is not code compliant.

- Isoconcentration lines should be dashed or include a question mark where the extent is inferred (e.g. TW-3), per Wis. Admin Code § NR 716.15 (2)(a) 4.
- The scale of the map is too small for clarity, similar to the scale issue with figure 3.
- The map seems to be a composite of different sampling dates and does not address the issue of variable results.

RESPONSE: *The Groundwater contamination figure(s) have been updated.*

The two groundwater flow maps, both titled figure 5, are not to industry standard and do not comply with Wis. Admin Code § NR 716.15 (2)(b).

- Provide the datum used.
- The values should be groundwater elevation relative to mean sea level.
- The results seem to be depth to water and not water elevation.
- The data are not contoured.
- The basis of the flow direction arrows is unclear.
- The plotted depth data for October 2021 at MW-7 does not match the result in Table 4.
- Not all of the well data is shown for the October 2021 round.

RESPONSE: *As was stated in the WDNR-approved Work Plan, TRG utilized a local reference point for the groundwater elevation data. TRG did not use MSL. The reference point is included in the Groundwater figures (Figure 4A and 4B, and 5A and 5B).*

Figure 6 and 7, the geologic cross sections, contain errors and do not meet code requirements in Wis. Admin Code
§ NR 716.15 (2)(d).

- The chemistry data and sample depths need to be shown.
- The well screen intervals should be shown.
- The Report shows known RCL exceedances being present only under the building. The contaminant distribution does not match Figure 4.
- What is shown at TW-1 with the inferred RCL exceedance? Discuss why this is inferred.
- The sections should show all borings within the line of section, not just a select few.
- The depth to water should not be inferred. Use data to support this interpretation.
- The elevations need to be referenced to MSL.
- Soil descriptions must match the boring logs. For example, at TRG SB-5, the soil descriptions on the two cross sections are not the same and neither depiction agrees with the data on the soil boring log. Similarly, TRG MW-4 boring log does not match cross section.

RESPONSE: *Figures 6 and 7 have been updated to reflect the concerns noted above.*

Table 3, “Groundwater Field Water Quality Parameters” does not include any 2022 data.

RESPONSE: *Table 3 was updated with the 2022 data.*

Table 4, "Hydraulic Conductivity Measurements and Calculations":

- Discuss whether the time vs. drawdown analysis accurate. The groundwater depths used in drawdown tests should be relative to static and not total depths. Based on the data as presented, the curve fit seems arbitrary and the time to reach zero head is infinite.
- Drawdown results for only three wells are presented, whereas the workplan stated testing would be performed on six wells. Discuss the deviation from the work plan.
- Provide information on the software package or equations used to calculate the hydraulic conductivity values.
- Provide the assumptions, monitoring well, and aquifer dimensions used within the hydraulic conductivity calculations.
- Only one hydraulic conductivity value is presented. Provide the results for each of the individual tests.
- Provide the water elevations and data used in the gradient calculations.
- Discuss how the hydraulic gradient was calculated. Typically, the hydraulic gradient is the slope of the water table. In this instance, it appears TRG used distances between three wells compared to depth to water at those wells. This does not yield the same results as the true hydraulic gradient at the site, as demonstrated by the fact that the calculated gradients vary by over two orders of magnitude.

RESPONSE: *The SI report has been updated to include the requested information above.*

There is no table showing the water level elevation data or the survey results. There appears to be no reference to any MSL elevations in the report.

RESPONSE: *As was stated above, TRG used a local benchmark reference for the groundwater elevations.*

The appendices need to include all boring logs, well construction forms, well development forms and borehole abandonment forms. Much of the information is missing. Section 4.7 of TRG's site investigation workplan stated, "Copies of all soil borings logs, well construction, well development, and borehole abandonment forms, and laboratory analytical reports will be included in appendices."

RESPONSE: *Noted.*

The boring logs descriptions don't appear meet standards.

- Boring logs don't include origin and don't identify fill materials.
- The use of the unified soil classification system (USCS) designations is not consistent, for example:
- Silty sand is not ML. ML is silt.
- Silt with sand is ML, not SM.
- Silt with clay is ML, not CL.

The borings logs were not each individually reviewed by the DNR and the examples are not intended as an exhaustive list of misclassifications.

RESPONSE: *All boring logs have been reviewed and edited, where needed.*

The well development forms show the wells MW-4, MW-5, MW-6, and MW-7 were not properly developed, as discussed on earlier in this letter.

RESPONSE: *The wells were developed in accordance with NR 141.21(2).*

The groundwater laboratory report for the 10-15-2021 sampling is missing from the appendix.

RESPONSE: *The 10-15-2021 laboratory report is contained in Appendix D.*

Wis. Admin Code § NR 716.13 (7) (c) states, "Responsible parties shall ensure that the following items are documented during the field investigation and are made available to the department upon request:…
(c) Field notes describing in detail the sequence of activities that took place during the field investigation."
The Department is requesting TRG to supply a copy of these field notes.

RESPONSE: *Attached.*

Robert Evangelisti was the Professional Engineer that certified the Report as the professional engineer overseeing the work. Please provide Mr. Evangelisti's contact information, including job title, place of employment, email address, and telephone number.

RESPONSE: *Robert Evangelisti did not oversee the work. The signature block reads as follows:*

"I, Robert Evangelisti , hereby certify that I am a registered Professional Engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A–E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A–E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

That is what he did (and signed and certified) and NOT that he oversaw the work. Mr. Evangelisti's information is:

Robert Evangelisti, P.E., CEA, CHMM, CSP
Engineer
revangelisti@the-reese-group.com
262-909-4299

Millenium Tile 1/15/21
Phase 2 ESA

550 E Centralia St, Elkhorn, WI

Scope of work- 3 soil borings ~15-20' bgs
- install 3 Temp Wells
- collect soil and GW samples

0830 LKK, TAR on site

0845 Walking facility with MF personnel: Jim,

0850 On site ENV on site
0850 Diggers Hotline on site
- marked utilities outside

1020 Started drilling
TRC SB-1
- outside door of building

1 60/60 0-6" snow/ice

6-10" Brown/blk silt w gravel roots

10-13" DK brown pebbles/sand

13-42" LB/DB silty sand w/ gravel moist

42-60" LB sand w/ silt/gravel, wet ~5 ft

2 60/60

60-100" LB sand w/ silt, wet

100-120" LB/Light gray sand w/ silt wet

3 60/60 120"-160" LB sand w/ silt, very wet (11-13')

13.5 6" gravel seam

13.5-15' LB/gray clay w small gravel

- bagged sample @ 12-14'

Setting - temp well TW-1 @ 15' bgs w 10' screened interval

DTB: 14.87' TOC

DTW: 4.53' TOC

stick up height: 15" (TOC)

- collected samples

Soil:

GW:

Time: soil:
GW:

1140 Drilling at TRG SB-2
- near chemical storage area

Rite in the Rain.

TRG SB-2

0-6" concrete

1 50/60

6-12" gravel base

12-24" LB silt w sand

24-30" DB clay

30-60" LB silty sand w/ gravel

2 48/60"

@ 5'-7" same

7-9' LB silty sand, wet
+ gravel

9-10' LB/gray silty sand w/ gravel
wet

3/3 49/60 10-15' LB silty sand
w/ gravel, moist

4/4 /60 15-19' LB/tan silty gravel
wet

refusal @ 19'

- installing temp well TW-2
~ 19' bgs

DTB: 19.86'
DTW: 19.5'
TOC: 24"

samples!
soil:
GW:

1230 Drilling @ TRG SB-3
-by sump next to process tank

1 35/60 0-6" concrete
6-10" DB silt/clay w gravel
10-18" LB silt w gravel
18-30" DB granular sand w/ pebbles
30-60" LB silty sand w gravel
Moist ~ 4.5'

Rite in the Rain

TRU 553

5-10' LB silty sand w gravel

50/60 moist

10'-14' same

5/60 moist

14-15' LB/gray silty sand w/ gravel

Temp well set ~ 15'

DTB: 14.77' TOC

DTW: none

TOC height: 6.5"

- No water in TW-2 or TW-3
- cutting of TOC @ ground surface - need to return in a few days to sample

Sample	PID	
TRG SB-1		
0-2	1.0	X 1-3' sampled
2-4	0.9	12:30
4-6	0.1	
6-8	0.0	
10-12	0.0	TW-1 samples
13-15	0.0	14:00
TRGSB2		
0-2	0.2	2-4' sampled
2-4	0.8	13:00
4-6	0.6	
6-8	0.1	
10-12	0.0	
12-15	0.0	
TRG SB-3		
0-2	0.5	
2-4	0.7 *	2-4' sampled
6-8	0.1	1330
8-10	0.0	
	0.0	
10-12	0.0	
12-15	0.0	TB-01 1430

I

Temp. wells TW-2 and TW-3 cut off @ ground surface w/ saw

- on site filled in wellhole w/ sand and bentonite on top to seal the well

TW-1 was abandoned after sample collection

- not enough water for water quality field measurements

1400 LKK off site / On site off site

- soil / GW spoils placed in 55-gallon drum on site by ramp

- samples delivered to fedEx in Milwaukee, WI for overnight delivery to lab

- Hex chromium has 24 hr hold time

1/22/21

Millenium Forms/Tile

1300 LKK on site

- Collect GW samples from TW-2 and TW-3

1330 TW-2

DTW: 6.85' TOC

DTB: 17.93' TOC

TOC = 2" above concrete

- purged ~3 gal

collected samples @ 1430

Temp: 16.0°C ORP: 190.5 mV

~~1.046 mS/cm~~

868 µS/cm pH: 2 lab

3.69 DO mg/L

Rite in the Rain

1445 TW-3

DTW: 4.25'

DTB: 14.30'

Purged ~ 5 gal

Temp 15.68°C

804 us/cm

ORP -240.9 mV

pH:

lab

DO: 5.17 mg/L

Samples:

Time: 1530

10/12/2001

0730 LKK on site @ 550 E Centralia St in Elkhorn, WI (Millennium Forms)

TEMP: 60°F, rainy

- Site investigation work - install 4 soil borings / monitoring wells to 15-20' bgs

0800 TAR on site

0810 Walking site to determine boring locations
- TRG SB-4/MW-4 - outside by property line
- 3 others inside facility

0900 Tony Kapusi w/ On site Env. on site

0915 Mobilizing to outside boring TRG SB-4
- Waiting on Digger's Hotline to mark outside utilities

0930 moving to TRG SB-7/MW-7 inside to S of storage area

1050 Completed 15' boring @ SB-7

1055 Installing 2" monitoring well @ ~15' bgs (TRG MW-7)

1200 On site finished installing MW-7 to ~ 15.5' bgs

1215 Moving to TRG MW-6/SB-6

1230 Started drilling @ SB-6 - south of process tank

1300 Boring completed

Rite in the Rain

1305 Installing 2" monitoring well @ SB-6 (TRG MW-6) ~15'
- MW-6 install complete
1350 Moving to TRG MW-5/SB-5
- directly south of former SB-3/TW-3 by process tank
1415 SB-6 boring completed - installing 2" monitoring well (MW-6) ~13' bgs
- water @ ~4-5' bgs
1500 SB-5 completed
1530 Digger's (USIC) on site to locate utilities

1545 Cleaning up
1550 LKK / on site off site

10/13/21

WED Oct 13th
Sunny, 62°F
0800 on site Env. on site
0815 LKK on site
0820 Drilling @ TRG SB-4/MW-4
0900 Driller hit power cable underground ~4 ft bgs
- Diggers notified, City of Elkhorn, and Power Company

1000 Poured concrete around monitoring wells MW-5, MW-6, MW-7

1015 checking DTB / DTW

TRG SB-7/MW-7 : DTB: 14.84'
DTW: 12.98'

TRG SB-6/MW-6
DTB: 14.98'
DTW: 10.01'

TRG SB-5/MW-5
DTB: 13.00'
DTW: 4.40'

1040 Developing MW-5
10 well vol = 1.41 gal x 10 = 14.1 gal
DTW before: 4.40'
DTW after = 11.51'

~ 35 minutes for development
purged ~15 gal

1125 Developing MW-6
10 well vol = .84 x 10 = 8.4 gal
DTW before: 9.83'
DTW after: 14.96' ~30 min
purged ~8.5 gal

1200 Developing MW-7
10 well vol = .34 x 10 = 3.4 gal
~30 min DTW before: 10.75'
DTW after: 14.81' purged ~3.5 gal

1300 City of Elkhorn finished repairing power line behind building
1315 On site, installing TRG-SB-4/MW-4
1415 On site completed MW-4
DTW - 7.53'
DTB: 15.05'
10 well vol: 1.23 x 10 = 12.3 gal

1430 Developing MW-4
start 1430
End 1505
vol purged: ~13 gal

- water in drum (55 gal)
- 4 soil drums on site
- 1 soil drum from PA 2 ESA
1445 On site off site
1530 LKK off site

10/15/21
0920 LKK on site
0945 GW sampling @ MW-4
DTW: 7.13'
DTB: 15.05'
purging -
purging ~4 well vol and sampling

Calibrating WQ meter ✓
- samples collected @ 1045

Temp: 14.36 °C
DO: 2.80 mg/L
Cond: 1.513 ms/cm
ORP: 20.7 mV
Turbidity: Med
Odor: None

1055 MW-7
DTW: 9.71'
purged: ~
TOC to floor = ~4"

WQ: TEMP: 17.53°C
Cond: 1.360 ms/cm
sp cnd: 1166 µs/cm
ORP: 278.9
DO: 4.35
odor - none
Turbidity: Low/Med

sample collected 1130

1140 Moving to MW-5
DTW: 6.22
TOC floor = 4"

purged:
WQ - TEMP: 18.75°C
DO: 3.86
ORP: 243.7
sp cond: 854 µs/cm
Odor: None
Turbidity: Low/med
sample time: 1215

Rite in the Rain

1130 Moving to MW-6
DTW: 4.32'
purged:
WQ: Temp: 17.91°C ORP: 82.6 mV
DO: 3.03 sp Cond: 857
Turbidity: Med odor: None
sample time: 1300
Dup sample time: 1310

1350 LKK Cleaning up
-delivering samples to CS logistics

- filling out COC

1400 LKK off site

2:31
MW-7 - 9.65 - bailer 9.40' original

MW-6 - 4.60' DTW

MW-5 - 4.61' DTW

Millennium Forms

Address: 550 E Centralia St
Elkhorn, WI

0830 CM, LLK, TAR on site
0835 On site ENV on site
0900 Looking @ boring locations
0905 Digger's Hotline on site to mark utilities
0915 Setting up @ TRG SB-8 for soil boring ~4' south of trench
- Bored to 15' bgs
- sampled (0-2) and (2-4) for Hex chrom and total chromium
- see boring log for details
- no temp well installed
1000 TRG SB-9
- boring to 15' bgs
Temp well set at 13' bgs
- screened interval 3-13'
~3 ft' North of trench, ~1' S of north wall of building
1100 TRG SB-10
~4' south of trench
- boring to 15' bgs

3/25/22

Groundwater well development @ Millennium farms

- See field forms
- Uploaded to Onedrive

Rite in the Rain

TRG SB-10
- screened temp well 5-15' bgs

1145 TRG SB-11
- ~10' south of trench, ~5' south of TRG SB-10
- Also close to south run of trench towards process tank
- refusal @ 12' bgs
Temp well set @ 12', screened 2-12' bgs

1230 TRG SB-12
- 10' south of trench near middle of process tank (~10' North of tank)
- Drilled to 15' bgs
- Temp well installed 5-15' bgs
- foundry sand (black) ~8' bgs screened 5-15'

1315 TRG SB-13
~15' south of trench, ~8' south of SB-8
- Drilled to 15' bgs
- Temp well set @ 14' bgs screened 4-14' bgs

Rite in the Rain

1400 TRG SB-14

~ center of room, N of tank, S of trench
- drilled to 14' bgs
- Permanent 2" well installed, screened 4-14' bgs

1500 TRG SB-15
- outside of building to N
~ 5' North of building wall
Drilled to 13' bgs
screened 2-12' bgs

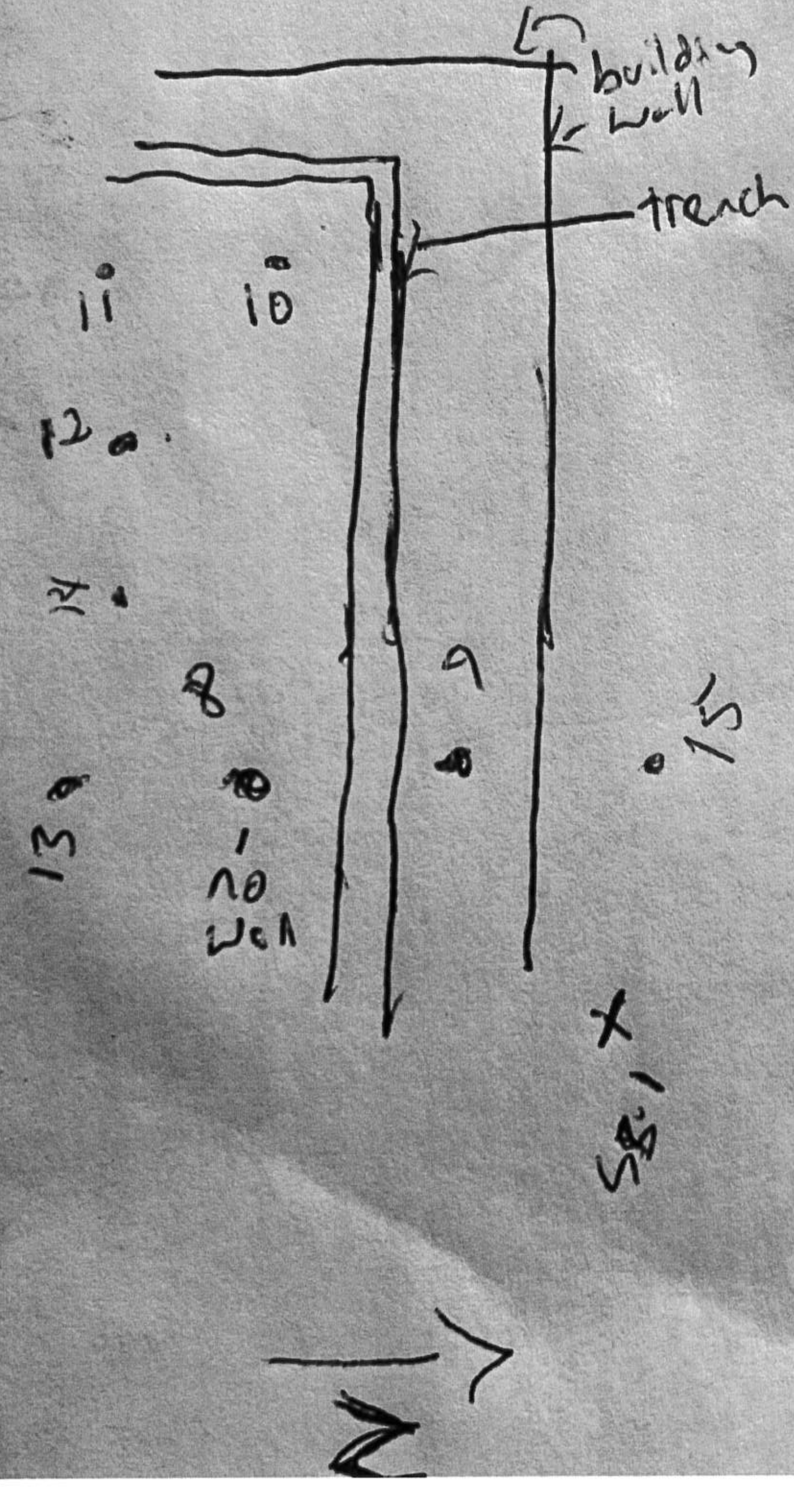
1600 Pouring concrete around MW-14
- cutting off stickups of each temp well

1630 Screening and locking @ soil intervals for each boring to decide intervals for laboratory analysis of Hex chrome and total Chromium

1730 Filling out COC

1800 LKL off site

Screened



GPS coordinates for borings

TRC SB-1/TW-1: 42°40'.75"N, 88°31'59.9"W
TRC SB-2/TW-2: 42°39'59"N, 88°32'0"W
TRC SB-3/TW-3: 42°39'58"N, 88°32'0"W
TRC SB-4/MW-4: 42°40'.89"N, 88°31'59"W
TRC SB-5/MW-5: 42°40'[illegible]"N, 88°32'0"W
TRC SB-6/MW-6: 42°40'1"N, 88°32'1"W
TRC SB-7/MW-7: 42°39'59"N, 88°32'0"W

Elevation inside ~ 1000 ft

Millennium forms

10/13/21

TRG SB-4/MW-4

Page 1 of ____

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			0	0-6" Topsoil, grass 6-2' DB silt w/ clay, gravel 2-4 LB silty sand w/ gravel 4-5' Orange/brown silty clay w/ gravel 5-10' LB silty clay w/ gravel 10-15' LB/gray silty clay w/ gravel EOB @ 15' bgs Sample time 0945		▽		~7'							PID / lm 0-2: 2.1 2-4: 1.5 4-6: 1.5 6-8: 1.9 8-10: 1.7 10-12: 1.3 12-15: 1.4 Sampled (1-3) interval

TRG SB-5 Millennium forms

10/12/21

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Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
				0-6" concrete 6-18" LB silty sand w/ gravel 18-4' DB/black/gray silt w/ clay and gravel 4-5' LB fine silt w/ sand 5-10' LB silty sand - wet, water ~5' bgs 10-12.5 LB silty sand w/ gravel - wet 12.5-15' gray silty sand w/ gravel - wet - EOB @ 15' bgs - setting 2" well ~13' bgs w/ 10' screen to 3' soil sample 14:15 (1') 1-3			4-5'							

SB-5 completed 1400

PID ppm

0-2: 0.7
2-4: 1.2
4-6: 0.9
6-8: 0.9
8-10: 1.0
10-12: 1.1
12-15: 1.0

Millennium Forms

TRG SB-6/MW-6

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Sample: Number and Type	Sample: Length Att. & Recovered (in)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			0	0-6" concrete 6-18" DB/black silt w/ clay and sand, gravel 18"-5' LB/gray silty sand w/ clay and gravel 5-9' LB silty clay - moist w/gravel 9-10' Gray silty clay w/ gravel, moist to wet 10-15 Brown/gray silty clay w/gravel EOB @ 15' bgs Installing 2" well ~ 15' bgs DTB: ~15.25 DTW:									*	Result PID ppm 0-2: 1.2 2-4: 1.6 4-6: 1.6 6-8: 1.1 8-10: 2.5 10-12: 1.4 12-15: 2.9 Sample TRG SB-6 (2-4) 13:05

- South of process tank

Millennium Forms SI

10/12/21

TRG SB-7/MW-7

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Sample: Number and Type	Sample: Length Att. & Recovered (in.)	Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties: Compressive Strength	Soil Properties: Moisture Content	Soil Properties: Liquid Limit	Soil Properties: Plasticity Index	Soil Properties: P 200	RQD/ Comments
			0	0-6" concrete 6"-4' LB silty sand w/ small gravel 4'-4.25 DB clay w/ silt 4.25-5' red brown clay w/ silt, gravel 5-7' LB silty sand w/ gravel 7-7.5' LB silt w/ clay - moist to wet 7.5-10 - same 10-14.5 LB silt w/ clay - wet 14.5-15 - Brown clay w/ rocks EOB @ 15' bgs Installing MW-7 @ ~15.5' bgs 10' screen (5-15') sample time 11:15 soil: Hex chrom + metals				~7.5'					*	PID / Rosulf ppm 0-2: 1.0 2-4: 1.1 4-6: 2.0 6-8: 1.2 8-10: 1.2 10-12: 2.0 12-15: 1.0 sampled 2-4' interval

AM 10:55 boring completed

- inside by storage area
- S of former boring TRG SB-2/TW-2

10/04/2022

10:00 am

TAK, GJK ON site

double check benchmark and TOC measurements

Benchmark - 1000
- bottom right of door slab concrete

✓ ed all NR140 monitoring well including

	TOC	GS
~~TA-MW-14~~	~~3' 11"~~	~~4'~~
MW-5	3' 11"	4' 3 3/4"
MW-6	4' 5" ~~4.012~~ TAK	4' 1 1/4"
MW-7	3' 11.5"	4' 4"
MW-4	2' 6 1/4"	3' 1 1/4"
MW-14	4' 4"	3' 9.5"

12:30 off-site

November 25, 2022
1600 hrs
TAR, GJR onsite

double check
if bored on west
side of process line
was impacted/covered
process water to
containment pit.

- Remove a pipe
& cap end. Not a
trench it appears
that a pipe was install
after the original slab
had been poured to
hold the pipe. No
bottom. Pipe was
installed in a
sand base. No yellow
impacts

TAR/GJR off site
12:30 pm