



October 15, 2021

Candace Sykora
Hydrogeologist
Remediation and Redevelopment
Wisconsin Department of Natural Resources
890 Spruce St
Baldwin, WI 54002

RE: Site Investigation Work Plan
WM Waste, Inc. Facility
21211 Durand Avenue, Union Grove, Racine County, WI 53182
BRRTS Activity # 02-52-586974
DNR FID # 252195350

Dear Ms. Sykora:

On behalf of WM Waste, Inc. (WM Waste), Cornerstone Environmental Group, LLC, a Tetra Tech Company (Tetra Tech) has prepared this Site Investigation Work Plan (SIWP) for the facility located at 21211 Durand Avenue, Union Grove, WI. The SIWP has been prepared in response to a Wisconsin Department of Natural Resources (WDNR) letter dated July 14, 2021 (Attachment 1).

The purpose of this SIWP is to complete a Wisconsin Administrative Code (WAC) NR 716 compliant site investigation to define the extent and magnitude of residual contamination associated with the release of impacted carbon during carbon change-out activities that is the subject of BRRTS # 02-52-586974, following the completion of interim response actions. To obtain closure of this BRRTS case number, the WDNR has indicated that the impacted areas of the facility associated with that release must be remediated to the standard residual contaminant limits (RCLs). The RCL for mercury for direct contact is 3.3 mg/kg and the RCL for groundwater is 0.208 mg/kg. This investigation will determine the degree and extent of residual mercury contamination from the subject release using the RCLs and the need for additional remedial actions, if any, to meet the RCL standards. A brief project background, proposed scope of services, and tentative schedule are provided in the following sections. We are requesting that the WDNR review this SIWP. The review fee will be submitted by WM Waste.

Site Information

Site name: WM Waste, Inc. Facility

Address: 21211 Durand Avenue, Union Grove, Racine County, WI 53182

Parcel IDs: 006-03-20-36-031-018; 006-03-20-36-031-017; 006-03-20-36-029-000; 006-03-20-36-031-022; 006-03-20-36-031-021

Site location: Northeast ¼ of the Northeast ¼ of section 36 of Township 3 North and Range 20 East, Racine County, Wisconsin

Responsible Party's name and address: WM Waste, Inc., 21211 Durand Avenue, Union Grove, Racine County, WI 53182

Consultant name and address: Tetra Tech, 8413 Excelsior Drive suite 160, Madison, WI , 53717

Background and Scoping of Investigation

The facility was historically used as a mercury recycling and licensed hazardous waste storage and treatment facility. Mercury recycling activities were conducted utilizing retort ovens. Emissions from the mercury retort ovens were directed to a granular activated carbon (GAC) system. The facility no longer operates the ovens nor processes mercury for recycling. Nonetheless, the GAC system remains operational at the facility.

The GAC's carbon media is replaced approximately every five years. The site is located in a small industrial park and is bordered to the north by Durand Avenue followed by agricultural land. The remainder of the surrounding area consists of industrial properties to the south and residences to the east and west. The site location is shown on Figure 1.

The WDNR was notified in August 2001 that soils at the facility were impacted with mercury. In 2008, a Site Investigation was performed and the WDNR issued case closure on June 18, 2009 with continuing obligations related to residual soil contamination left in place at the site. Requirements included sampling and analysis of any excavated soil from the site, as well as a determination as to whether the material is considered a solid or hazardous waste. A soil sampling event occurred in September 2010 where samples were collected from the facility and select surrounding properties. All results were below the site-specific standard for mercury of 10 mg/kg.

According to Condition 59.f of the facility's Feasibility and Plan of Operation Report (FPOR) approval from the WDNR dated August 18, 2011, biennial collection of a minimum of 70 soil samples are to be analyzed for total mercury commencing in 2012. The Sample Locations and Summary of Historical Soil Analytical Results are provided in (Attachment 2). Results at or above the site-specific standard of 10 mg/kg must be reported to the WDNR. Biennial sampling occurred at the site from 2012 through 2018 with no exceedances of the site-specific standard.

On August 28, 2020, the biennial soil sampling event was conducted by Environmental Monitoring & Technologies, Inc. (EMT) in accordance with the approved FPOR. EMT collected grab soil samples from the facility and submitted them to their certified lab for mercury analysis. Lab results were received on September 11, 2020 identifying that seven of the 89 samples collected exceeded the site-specific standard of 10 mg/kg. The suspected source of the elevated concentrations is spillage of approximately one gallon of carbon media that occurred during the last GAC changeout event in September 26, 2018. WM Waste was not aware of the release prior to the 2020 sampling event. The changeout was reportedly performed by new employees, and although plastic tarping was used, carbon media was spilled on the ground surface near the carbon vessels on the west side of the facility while being transferred to totes.

Immediate non-emergency remedial action was taken to address the site-specific exceedances. Over-excavation of contaminated soil was conducted from December 10, 2020 through December 16, 2020. WM Waste personnel over-excavated soils to a depth of approximately 1-foot below ground surface (bgs) based on analytical results and visual observations. The approximate extent of the excavation is shown of Figure 2. Post-excavation confirmation sample results were well below the site-specific standard of 10 mg/kg as well as the direct contact RCL of 3.3 mg/kg as reported in the February 2021 Request for No Further Action Letter (Attachment 10).

If precipitation were to have come in contact with the spilled GAC prior to the remediation it would have flowed to the stormwater drain located on the western side of the facility within the excavation area. The stormwater drains discharge to a stormwater retention pond. The stormwater retention pond was constructed circa 2008 (based on an aerial photo review) to manage stormwater from the site in accordance with Conditions 60 and 61 of the facility's FPOR. The pond is designed with a 2-foot-thick clay liner to protect the groundwater from infiltration. The as-built elevations for the pond, pond design specifications and plans and the stormwater flow pattern for the site are provided in Attachment 3. The pond sediment was initially sampled in 2012, is sampled annually, and the analytical reports are maintained in on-site records. Mercury results from pond sediment samples have fluctuated over time. The Sample Locations and Summary of Historical Pond Sediment Analytical Results are presented in Attachment 4.

A review of the subsurface conditions in the vicinity of the site indicates a contaminant would have to traverse a thick stratum or deposit of clay prior to reaching the groundwater which appears to be more than 50 feet below the ground surface. Historic water supply well analytical results from samples collected at the two on-site wells and the neighboring properties wells indicate no detections of mercury. The analytical results are provided in Attachment 5.

No other potential sources of mercury contamination are known in the vicinity of the site.

There is no known potential for impacts to sensitive species, habitats or ecosystems, based on a Preliminary WDNR Endanger Resource Review completed on August 13, 2021 (Attachment 6). A review of nearby surface waters and wetlands in the vicinity of the site showed a small wetland mapped approximately 130 feet west of the stormwater pond discharge area. No waterways are present in the vicinity of the site that the site would discharge to. Additionally, no potential impacts to sites of historical/archaeological significance are known.

Based on the area where the spill occurred, the SIWP will focus the investigation on the soil surrounding the previously remediated area of the GAC spill, the sediment and water quality of the stormwater pond. Additionally, the two water supply wells onsite will be tested for total mercury to characterize the groundwater at the site.

Physiographical and Geological Setting

The following information is provided as a background of the natural physical features on-site, in the vicinity of the site and beneath the site.

Topography

The current USGS – 7.5 Minute Topographic Map (see Figure 1) showing the site and surrounding area was reviewed. Based on the local topography and surface water features, surface water is presumed to flow to the west toward a stormwater retention pond. When the pond discharges, it flows to the southwest toward a mapped wetland offsite.

Surficial Soils

The ground surface at the site is either paved, covered in gravel or manicured lawn. The area where the GAC spill occurred was overlain by gravel before it was removed and replaced during remediation. The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) maps indicate the surficial soils on site as silty clay loam and silt loam (Attachment 7).

Geology

Nearby water supply well logs (Attachment 8) show a clay deposit extending from the ground surface to a depth of 40 feet to 120 feet below grade. The clay deposit overlies sand and gravel deposits of varying thickness. The unconsolidated deposits overlie limestone/dolomite bedrock at approximately 130 to 160 feet bgs.

Hydrogeology

Well construction logs within the surrounding area also indicate that the groundwater is greater than 50 feet bgs. A well log found in site records indicates the water table is at 98 feet below the ground surface. Locally, groundwater is presumed to flow to the east toward an unnamed tributary of the Des Plaines River. Deeper groundwater conditions or the piezometric surface, as shown on the United State Geological Survey 1963 water table contour map (Attachment 9), also flows to the east where it likely discharges into Lake Michigan.

Potential Migration Pathways

Contamination from the GAC spill was likely limited to the surficial soils above the clay near the original spill location and the storm water retention pond sediments. The impacted soil in the area where the GAC was spilled has since been remediated by excavating and removing the soil down to one foot below the surface and replacing it with clean fill and gravel. The residual mercury remaining in the soil after the remediation may be a migration pathway.

Samples have been collected from the stormwater retention pond sediments since 2012. The historical laboratory results have shown elevated mercury concentrations in the pond sediments, likely resulting from historic mercury handling/recycling activities. The last pond sediment samples were collected in December 2020, after the GAC spill and remediation activities. Therefore, sediment conditions can be discerned from this prior sampling. The stormwater retention pond is designed with a clay bottom as noted/observed by Tetra Tech personnel during the December 2020 sediment sampling event and based on the retention basin plan set (Attachment 3). Consequently, the clay liner is designed to limit the vertical migration of mercury within the pond sediment. The pond is further designed to settle out suspended solids (including mercury) before evaporating or discharging through a discharge structure to the pond outlet.

Water has a specific gravity value of 1.0 while inorganic mercury compounds have a specific gravity value of 13.6. Along with this, National Institute Occupational Safety and Health (NIOSH) reports that inorganic mercury is insoluble, because inorganic mercury has a higher specific gravity than water and is insoluble meaning that it has the tendency to settle out in water. Based on the depth to groundwater, the specific gravity of inorganic mercury particles and their likelihood to settle out rather than discharge, the engineered nature of the stormwater pond liner and the thick layer of clay below the surficial soil seen on nearby well logs as well as past water supply well sampling results, impacts to groundwater from the GAC release are not likely.

By design the surface water is collected in a retention pond to prevent suspended solids from leaving or discharging from the pond. Soil samples have been collected in a grid pattern across the site and analyzed for total mercury since 2009. The grid location and a summary of the results is provided in Attachment 2. Grid sample locations H7 and H8 are located closest to the storm water pond outlet. Mercury concentrations at H7 and H8 have fluctuated over the years with only one instance of reaching a concentration over the direct contact RCL which occurred at location H7 in 2010, well before the GAC spill. The results since 2010 have remained well below the direct contact RCL including since the GAC spill. When these concentrations are compared to the fluctuating nature of past results across the site, similar concentrations reported across the site, and the concentrations that occurred at the samples in the immediate vicinity of the GAC spill, it can be inferred that the GAC spill had little to no impact on the soils near the retention pond outfall.

Based on historical sampling data and the results from the confirmation samples taken during the GAC spill remediation, the identified potential migration pathways at the site are the near surface soils surrounding the previous remediation area, the retention pond sediments and the retention pond surface water. The groundwater is not expected to be impacted from the GAC spill.

Sampling and Analysis

As noted above, the proposed sampling program focuses on the media that require further investigation. Specifically, the location and methodology for the collection of soil, surface water and groundwater are further described below.

Soil

The extent of the soil contamination in the vicinity of the GAC spill will be defined by collecting soil samples from six locations (S1-S6 – see Figure 2) to the north, west and south of the area of the spill and outside of the previously remediated location. The excavated or remediated area already has confirmation samples taken at a depth of one foot below the surface that are below the direct contact RCL for mercury. The proposed sample locations are approximately 12 feet beyond the boundary of the previously excavated area. The proposed sample locations would laterally confirm the extent of potentially contaminated soil. Soil samples will be collected from each of the proposed six locations both at the ground surface (below grass or gravel surfaces) and from one foot below ground surface. If lab results indicate the mercury levels within the soil samples are above the direct contact RCL of 3.3 mg/L, additional soil samples will be collected either laterally from any one specific proposed sample location and/or further vertically at S1-S6 to define the extent of the impacts. A similar lateral offset distance or “step out” would be performed as is currently proposed for sample locations S1-S6. This process would be performed until results below the RCL are achieved. As part of this investigation, up to 12 total initial discrete soil samples will be collected below grass or gravel surfaces. Each of the soil sample locations will be surveyed with a GPS.

The soil sampling will be conducted by using a shovel to remove the overburden of grass turf or gravel. In areas with deep compacted gravel or hard ground a mini excavator may be used to remove the compacted gravel. After removal of the overburden the soil samples will be collected by using clean nitrile gloves or a stainless steel trowel that will be decontaminated with Alconox soap and rinsed with distilled water between samples from the portion of soil that has not come in contact with the shovel or mini-excavator. New, clean gloves will be used for each sample. A site map showing the proposed locations of the samples is attached (Figure 2).

The soil samples will be laboratory analyzed for Total Mercury using United States Environmental Protection Agency (USEPA) Method 7471..

Surface Water

Precipitation that fell in the area around the GAC spill prior to remediation would have flowed to a drain that subsequently flows into the sedimentation pond as seen on the storm water flow pattern on Attachment 3. WM Waste proposes that one sample be collected from the surface water of the pond near the discharge structure. Water from the pond will be collected using a clean laboratory provided container and poured into a second laboratory supplied sampling container while wearing a clean pair of nitrile gloves. The surface water sample will be unfiltered. A site map showing the proposed location of the surface water sample is attached as Figure 2.

The surface water sample will be laboratory analyzed for Total Mercury using United States Environmental Protection Agency (USEPA) Method 7470.

Groundwater

There are two private water supply wells located on the site. Each well was sampled in 2009 and neither had detections for total mercury (Attachment 5). A well log found in the site's records shows the clay thickness as 41 feet ranging from the ground surface to 41 bgs. The well log is provided in Attachment 8. The well log from the site records shows the depth to groundwater as 98 feet below the ground surface which is reasonable when compared to the regional ground surface elevation of approximately 828 feet above mean sea level from the topographic map in Figure 1 and the regional water table depth of approximately 750 ft above mean sea level shown on the USGS Water Table Contour Map in Attachment 9. The water supply wells are located on the WM

Waste property and are shown on Figure 2. The PW-1 well head (Well Head 1) is located down/sidegradient of the GAC spill while the PW-2 well head (Well Head 2) is located upgradient of the spill based on regional flow information provided in Attachment 9. The 41 feet of clay soil beneath the site likely inhibits the movement of potential residual mercury to the groundwater surface in the area of the remediated GAC spill, rendering the risk to groundwater from the GAC spill to be low. Further evidence from confirmation samples collected during the remediation of the GAC spill in December 2020 demonstrated that the mercury concentration is reduced below the direct contact RCL at one foot below the spill. Before and after remediation concentrations can be seen in the February 2021 Request for No Further Action Letter (Attachment 10). The groundwater RCL is not used as the standard because there is no direct pathway to the groundwater from the impacted soil or sediment.

To investigate the groundwater, samples will be collected from each of the two onsite water supply wells and sent to the laboratory to be analyzed for total mercury. The well samples will be collected from outdoor taps located on the outside of two separate buildings in the same locations as 2009 (see Figure 2; points PW-1 and PW-2). The taps will be run for an adequate amount of time before filling laboratory provided sample containers while wearing a new clean pair of nitrile gloves for each sample. Both water supply well samples will be unfiltered.

The private water supply well samples will be laboratory analyzed for Total Mercury using United States Environmental Protection Agency (USEPA) Method 7470.

Quality Control and Quality Assurance

Samples collected during the investigation will be placed into plastic bags and into a clean laboratory provided cooler with ice immediately after collection. One duplicate water sample will be collected and analyzed to confirm results. The samples will be documented on a laboratory provided chain of custody and laboratory provided temperature blanks will be utilized during shipping.

Investigative Wastes

Sampling waste materials (i.e. used gloves and cups) will be disposed of in an on-site trash receptacle that is bound for landfill disposal. Disturbed soils will be returned to the exhumed area until laboratory results confirm the need for any further remediation.

Interpretation of Sampling Results

Soils

Laboratory results from the soil samples will be compared to the total mercury RCL for direct contact of 3.3 mg/kg. If the total mercury concentration in the sample is below the RCL, no further soil sampling investigation or remedial action will be considered or performed. If the value is above the direct contact RCL, remedial actions will be evaluated. If the results indicate the extent of the contamination requires further definition, the proposed “step out” soil sampling investigation plan as defined in this document will be implemented. The December 2020 excavation confirmation samples were taken from the base of the excavation and at a depth of one foot below the spill, all resulting in concentrations that were below the direct contact RCL limit. Based on these results, sampling to a depth of one foot below the ground surface is adequate to define the vertical extent of contamination if additional sampling is warranted.

Surface Water

The results from the surface water inside the pond will be used to determine whether further investigation of surface water is warranted.

Sediment

Based on the annual pond sediment sample results, including the December 2020 sediment samples collected after the GAC spill remediation, the stormwater sedimentation pond is functioning as designed. No further sediment characterization is warranted at this time.

Groundwater

Groundwater sampled from private water supply wells will be analyzed for total mercury. The results will be compared to NR 812 and NR140 groundwater standards. Based on the limited nature of the GAC release, the post-excavation sampling results from the interim response action completed, the depth to groundwater and underlying fine-grained soil, impacts to groundwater from the GAC release are not likely.

Site Management During Sampling

All sample holes should be filled in after sample collection with the removed soil, the soil will be recompact and any grass turf or gravel will be replaced and stabilized to avoid erosion.

Schedule

The field investigation is tentatively scheduled for the beginning of 2022, following Department review and approval of this work plan.

Report Preparation

A Site Investigation Report and Remedial Action Plan (if necessary) will be prepared which documents the investigation methods and activities, evaluates the results of the analytical data and collected field data, and presents the findings, conclusions and recommendations.

If you have any questions or comments regarding this SIWP or require additional information, please contact Lee Daigle by phone at (951) 236-2526 or by email at lee.daigle@tetrattech.com, or John Oswald by phone at (630) 410-7224 or by email at john.oswald@tetrattech.com.

Sincerely,

Tetra Tech



Lee Daigle, P.E.
Client Manager



John C. Oswald, P.G.
Central Region Area Manager

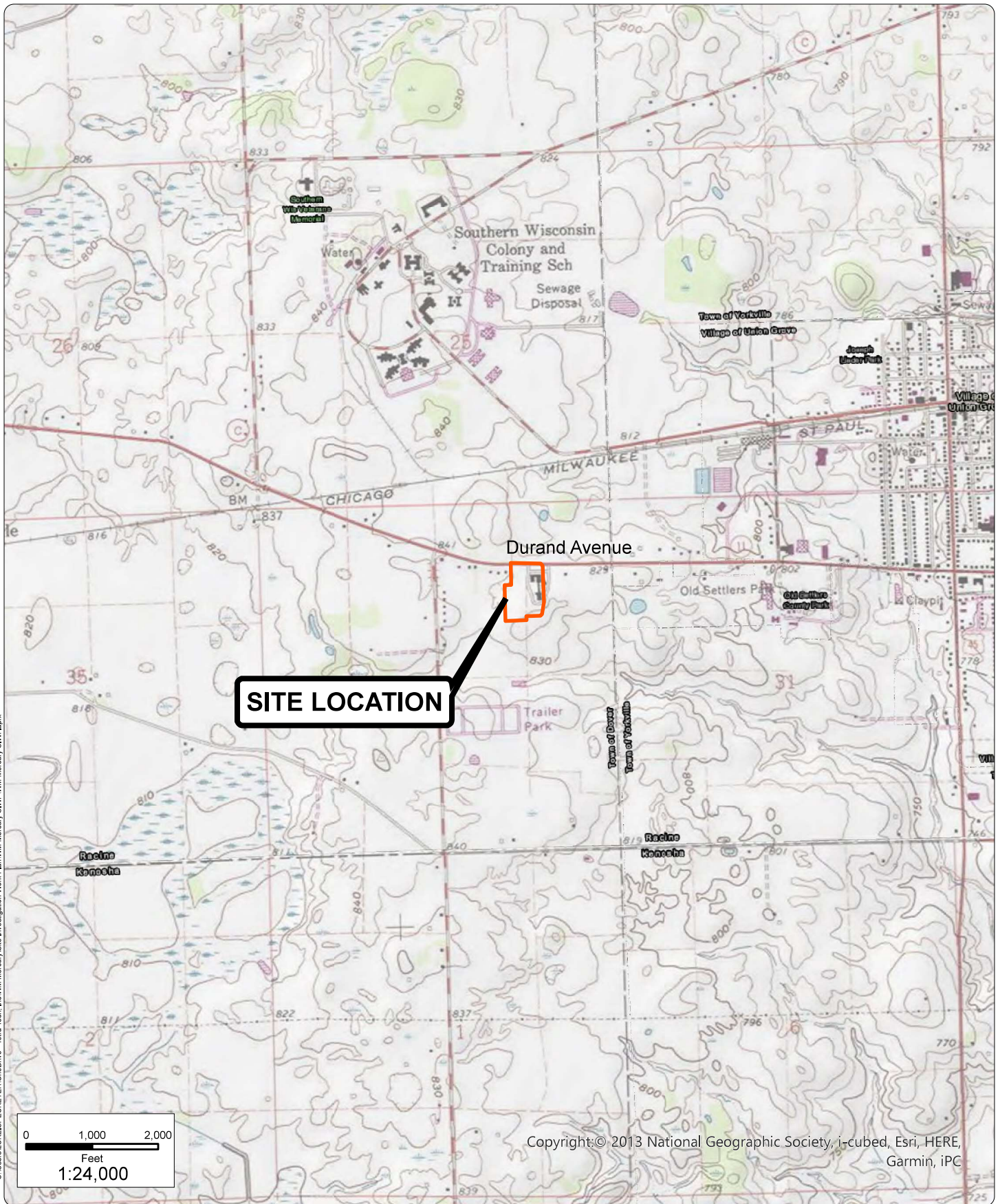
Enclosures: Figure 1 – Site Location Map
Figure 2 – Site Layout with Proposed Sample Locations
Attachment 1 – WDNR Correspondence
Attachment 2 – Sample Locations & Summary of Historical Soil Analytical Results
Attachment 3 – Retention Basin Plan Set
Attachment 4 – Sample Locations & Summary of Historical Sediment Analytical Results
Attachment 5 – Private Well Sampling Results
Attachment 6 – Endangered Resources Preliminary Assessment
Attachment 7 – NRCS Soils Map
Attachment 8 – Water Supply Well Logs
Attachment 9 – USGS Water Table Contour Map
Attachment 10 – Post Excavation Sampling Results -December 2020

Cc: Sixto Ortiz – Waste Management
Michelle Gale – Waste Management
Mark Noel – Waste Management
Steven Smolko – Waste Management
Todd Washburn – Waste Management
David Crass – Michael Best & Friedrich, LLP

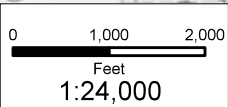
References:

“CDC - NIOSH Pocket Guide to Chemical Hazards - Mercury Compounds [except (Organo) Alkyls] (as Hg).”
Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, 30 Oct. 2019,
<https://www.cdc.gov/niosh/npg/npgd0383.html>.

FIGURES



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PREPARED BY:
LRS

APPROVED BY:
JO

DATE CREATED:
9/7/2021



TETRA TECH

PREPARED BY:
CORNERSTONE ENVIRONMENTAL GROUP, LLC

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WM WASTE, INC.

SITE INVESTIGATION WORK PLAN

21211 DURAND AVENUE

UNION GROVE , WI

SITE LOCATION MAP

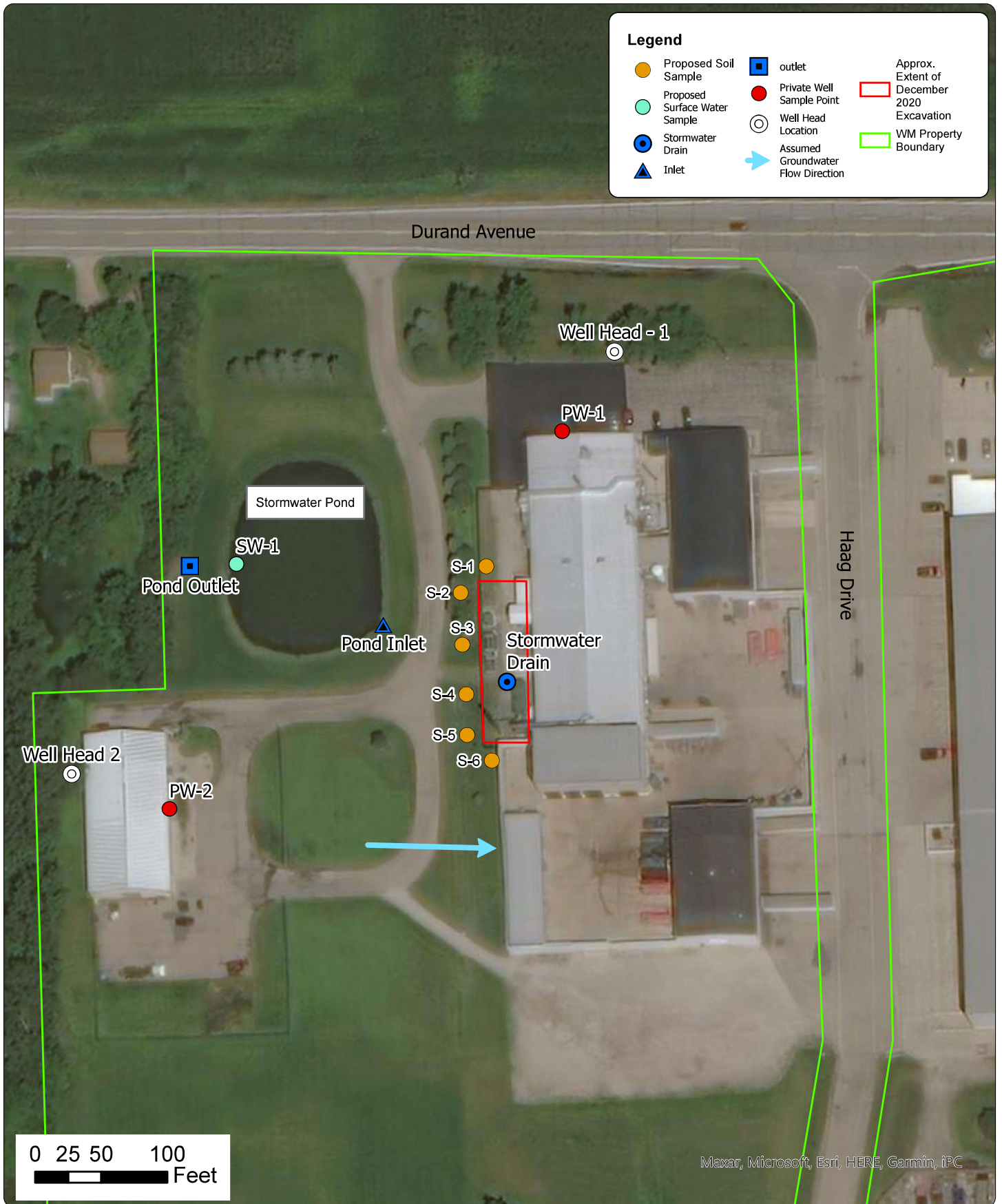
FIGURE NO.

1

PROJECT NO.
4211680

Legend

- Proposed Soil Sample
- Proposed Surface Water Sample
- Stormwater Drain
- ▲ Inlet
- outlet
- Private Well Sample Point
- Well Head Location
- Assumed Groundwater Flow Direction
- Approx. Extent of December 2020 Excavation
- WM Property Boundary



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Maxar, Microsoft, Esri, HERE, Garmin, iPC



PREPARED BY:
LRS
APPROVED BY:
JO
DATE CREATED:
10/14/2021



PREPARED BY:
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WM WASTE, INC.
SITE INVESTIGATION WORK PLAN
21211 DURAND AVENUE
UNION GROVE, WI
SITE LAYOUT
PROPOSED SAMPLE LOCATIONS

FIGURE NO.
2
PROJECT NO.
4211680

ATTACHMENT 1

WDNR Correspondence



July 14, 2021

Sixto Ortiz
WM Waste, Inc.
800 Capitol Street
28th floor
Houston, TX 77002

Subject: No Further Action Not Recommended
WM Waste, Inc Facility, 21211 Durand Avenue, Union Grove, Racine County, Wisconsin
DNR BRRTS Activity # 02-52-586974
FID #: 252195350

Dear Mr. Ortiz:

On June 3rd, the Wisconsin Department of Natural Resources (DNR) reviewed the No Further Action request for the case identified above. As you are aware, the DNR reviews environmental remediation cases for compliance with applicable laws, including Wis. Stat. ch. 292 and Wis. Admin. Code chs. NR 700 – 754 and whether any further threat to public health, safety or welfare or the environment exists at the site or facility, per Wis. Admin. Code § NR 726.13 (2) (b). As discussed with your consultant on 6/15/21, case closure is not recommended because additional legal requirements must be met. The purpose of this letter is to inform you of the remaining requirements for obtaining closure.

Need to Define the Degree and Extent of Contamination

Additional soil, groundwater, surface water, sediment, sampling is needed to define the degree and extent of contamination per Wis. Admin. Code § NR 716.11. Based on the identified soil impacts additional investigation is needed to establish the extent and magnitude of the release to the environment. This includes but is not limited to the soil previously identified as having impacts but also, the adjacent pond and pertaining sediments, and on-site groundwater.

Need to Conduct Additional Remedial Action

Additional remedial action is needed to comply with the closure criteria of Wis. Admin. Code ch. NR 726. Excavations of impacted soils were completed using the hazardous waste site-specific standard of 10ppb. The site-specific standard for mercury is a permitted number but not a standard used nor allowed for a release to the environment. Remedial actions addressing impacts to the environment are required to meet residual contaminant limits (RCLs). The direct contact RCL for mercury is 3.13 mg/kg and the groundwater (leachability to groundwater) RCL is 0.208 mg/kg.

Schedule

Within 60 days of the date of this letter, respond in writing with a schedule of your plans to meet these requirements.

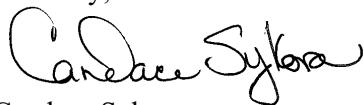
Until requirements are met, your site will remain “open” and you are required to submit semi-annual progress reports, per Wis. Admin. Code § NR 700.11. You are also responsible for any operation and maintenance activities required under Wis. Admin. Code § NR 724.13. Once the additional work has been completed, documentation should be submitted to the DNR to demonstrate that the applicable requirements have been met.

Conclusion

If you have any questions regarding the information in this letter or would like to schedule a meeting to discuss this case, please contact the DNR project manager, Candace Sykora at 715-928-0452. For more information on the closure reconsideration process, please see DNR publication, RR-102, "Wis. Admin. Code ch. NR 726 Case Closure Reconsideration Process" by visiting dnr.wi.gov, search: RR-102, for more information.

The DNR appreciates your efforts to restore the environment at this site.

Sincerely,

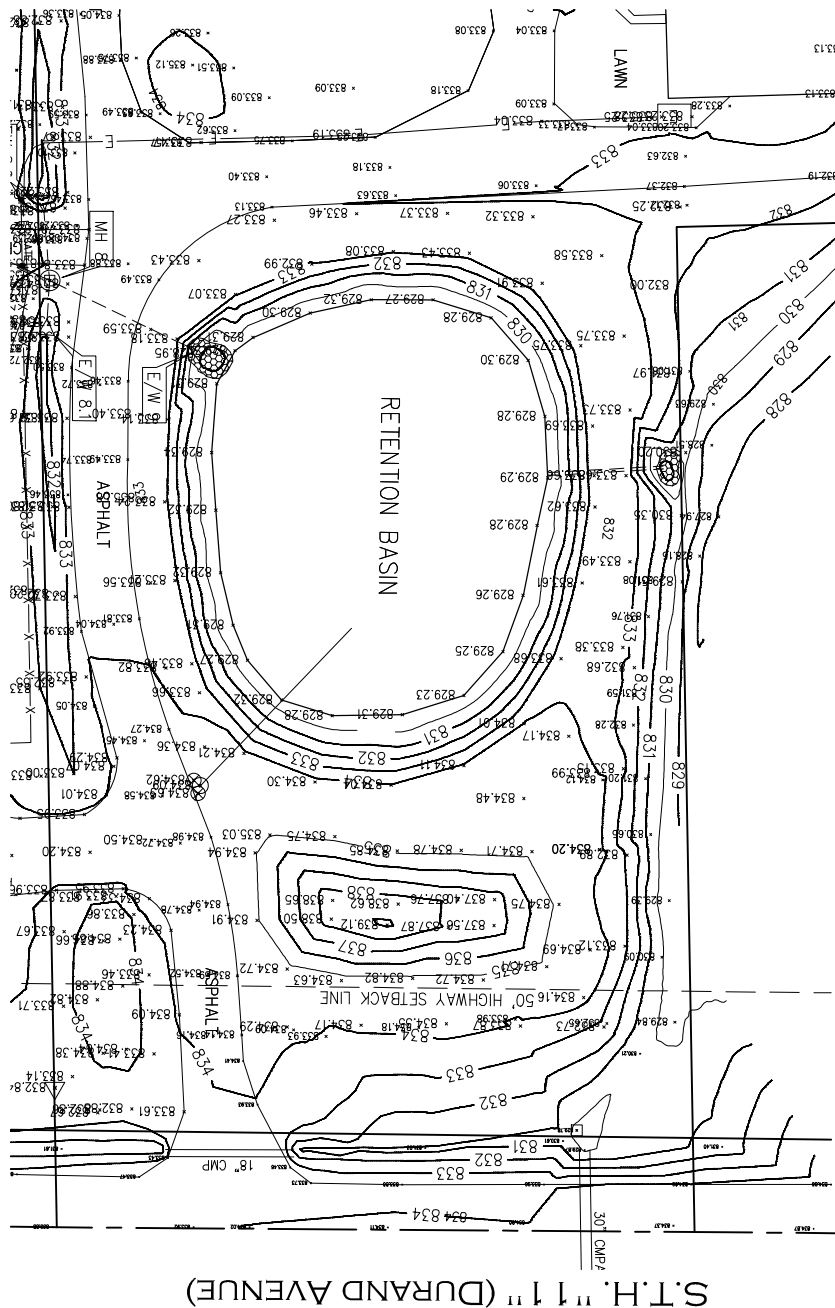


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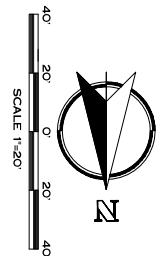
cc: Lee Daigle, Tetra Tech

ATTACHMENT 2

Retention Basin Plan Set



S.T.H. "11" (DURAND AVENUE)



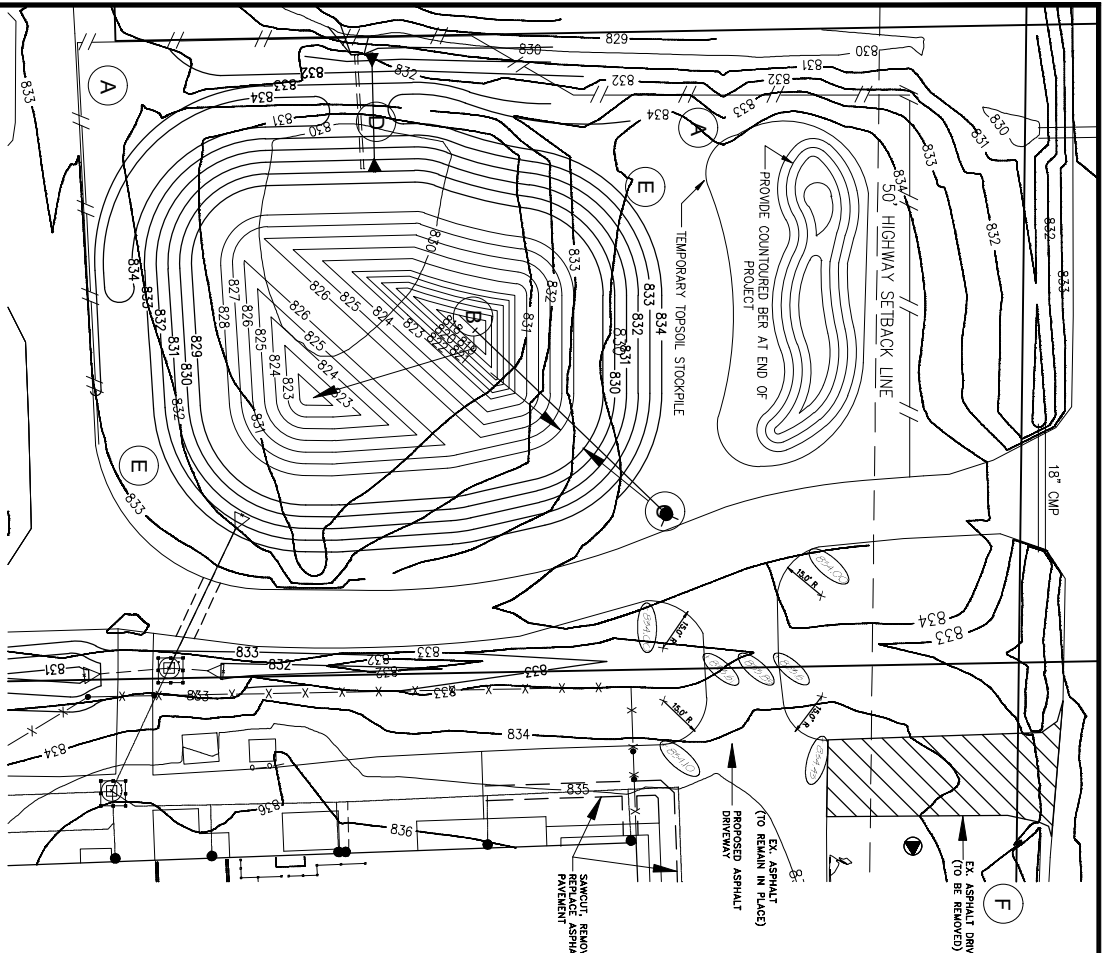
PROJECT NO. 1000000000
 DATE 2011.0006.01
 SHEET S-1



POND AS-BUILT ELEVATIONS
 FOR
WM MERCURY WASTE, INC.
 2121 DURAND AVENUE
 UNION GROVE, WISCONSIN

Nielsen Madsen & Barber S.C.
 Civil Engineers and Land Surveyors
 1339 Washington Ave. Racine, WI. 53403
 Tele: (262)634-5588 Fax: (262)634-5024
 Website www.nmbssc.net





- ### GRADING LEGEND
- 692 — EXISTING CONTOURS
 - 702 — PROPOSED CONTOURS
 - 708 — SPOT GRADES (PROPOSED)
 - 718 — SPOT GRADES (EXISTING)
 - 728 — STORM INLET PROTECTION
 - 738 — SILT FENCE

RECONSTRUCTION NOTES:

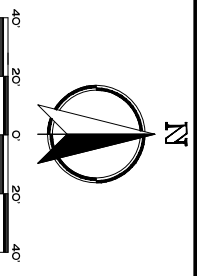
- A. SILT FENCE
 - INSTALL SILT FENCE ALONG NORTH, WEST AND SOUTH BOUNDARIES OF THE RETENTION BASIN EXCAVATION. SEE SHEET CE-10 FOR TYPICAL INSTALLATION DETAIL.
- B. SEDIMENT FOREBAY
 - EXCAVATE SEDIMENT FOREBAY TO THE LINES AND GRADES SHOWN. LOWER INVERT OF FOREBAY SHALL BE AT ELEVATION 821 WITH THE SEPARATION BERM RAISED TO 826.
- C. SAFETY SHELF
 - A 10' WIDE SAFETY SHELF SHALL BE INSTALLED AROUND THE ENTIRE PERIMETER OF THE BASIN. THE SHELF SHALL START AT THE NORMAL WATER LEVEL OF 829 AND EXTEND DOWN AT A 10:1 SLOPE FOR 10'.
- D. OUTLET CONTROL STRUCTURE
 - EXISTING 12" CMP TO BE REMOVED. CULVERT SHALL BECOME PROPERTY OF THE OWNER AND HALLED OFF-SITE.
- E. RESTORATION
 - ALL DISTURBED AREAS TO BE FINAL GRADED TO DRAIN, SEED, FERTILIZED AND MULCHED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- F. EX. ASPHALT DRIVEWAY (TO REMAIN IN PLACE)
 - EX. ASPHALT DRIVEWAY (TO REMAIN IN PLACE)

RETENTION BASIN

- EMBANKMENT**
- CONSTRUCTION OF A CLAY LINER IS REQUIRED TO REDUCE LATERAL AND/OR VERTICAL MOVEMENT OF STORM WATER THROUGH THE BASK WALLS AND BOTTOM. SCOUR EROSION AND RECONSTRUCTION OF NARROW SAND LENSES IS EXPECTED WITHIN THESE SOILS. BASIN CONSTRUCTION WHERE MORE PENETRABLE SOIL LAYERS COMPRESSED CLAY LAYERS IS REQUIRED.
- CLAY LINER**
- CONSTRUCTION OF A CLAY LINER IS REQUIRED TO REDUCE LATERAL AND/OR VERTICAL MOVEMENT OF STORM WATER THROUGH THE BASK WALLS AND BOTTOM. SCOUR EROSION AND RECONSTRUCTION OF NARROW SAND LENSES IS EXPECTED WITHIN THESE SOILS. BASIN CONSTRUCTION WHERE MORE PENETRABLE SOIL LAYERS COMPRESSED CLAY LAYERS IS REQUIRED.

GRADING & EROSION CONTROL SPECIFICATIONS

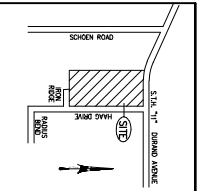
- EROSION CONTROL**
- ALL EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO ANY SITE DISTURBANCE. CONTRACTOR SHALL MAINTAIN EROSION CONTROL DEVICES UNTIL THE SITE HAS ESTABLISHED A VEGETATIVE COVER AND IS STABILIZED. ADDITIONAL EROSION CONTROL DEVICES MAY BE REQUIRED BY THE OWNER, ENGINEER OR MUNICIPALITY TO MEET FIELD CONDITIONS.
- INSTALL SILT FENCE PER SECTION 207 OF THE STATE SPECIFICATIONS**
- INSTALL SILT FENCE PER SECTION 207 OF THE STATE SPECIFICATIONS AROUND PERIMETER OF THE SITE AS SHOWN. SILT FENCE SHALL BE INSTALLED BETWEEN THE FRAME & GRATE TO PREVENT SILT FROM ENTERING THE SYSTEM. FABRIC SHALL BE A MINIMUM 18 X 59 GRADE, TRACKING PAD 0.6 INCH STITCHES SHALL BE INSTALLED AT THE ENTRANCE TO THE SITE TO PREVENT SOIL FROM BEING TRACKED ON AND ADJACENT PUBLIC OR PRIVATE ROADS. ALL TRACKED SOIL AT THE CONSTRUCTION SITE SHALL BE COLLECTED BY THE CONTRACTOR AT THE END OF EACH WORKING DAY.
- TOPSOIL STRIPPING**
- ANY AND ALL TOPSOIL WITHIN THE PROPOSED PAVEMENT AREAS SHALL BE STRIPPED AND STOCKPILED AT THE LOCATION ON THE SOUTH END OF THE PROPERTY (SEE DRAWING IN SPECIFICATION MANUAL). THIS AREA SHALL HAVE THE TOPSOIL STRIPPED STOCKPILED AND BE SPREAD AT THE COMPLETION OF THE PROJECT. THE AREA SHALL BE INCLUDED IN THE LUMP SUM ITEMS OF COMMON EXCAVATION/SITE GRADING.
- RESTORATION**
- STALVAGED TOPSOIL, SEED (MIN. 40% FERTILIZER AND MULCHING) SHALL BE COMPLETED IN ACCORDANCE WITH SECTIONS 626, 630, 632 AND 637 OF THE STATE SPECIFICATIONS.
- MEDIUM RAP RAP**
- MEDIUM RAP RAP SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 646 OF THE STATE SPECIFICATIONS. GEOTEXTILE FABRIC SHALL BE TYPE "R" IN ACCORDANCE WITH SECTION 645 OF THE STATE SPECIFICATIONS.



The contractor shall provide the proposed final construction plan for review and approval by the local authority having jurisdiction. It is the contractor's responsibility to verify the accuracy of the information, conditions and boundaries of any excavation, foundation and retaining wall construction. The contractor shall be responsible for all utility relocation and protection.

DIGESTER HOTLINE

24 HOURS A DAY
 1-800-441-1111
 920 W. Wisconsin Ave. #100
 Wausau, WI 54981-1111
 Fax: 715/848-2289
 Website: www.digester.com



UTILITY NOTE

- THE EXACT LOCATION OF UNDERGROUND UTILITIES OR FACILITIES SHOWN ON THE PLAN IS BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UTILITIES AND TO PROVIDE ADEQUATE PROTECTION DURING THE COURSE OF THE WORK.
- BEARING BASE: 0820 NORTH, WISCONSIN COORDINATE SYSTEM, SOUTH ZONE.
- ALL ELEVATIONS REFER TO NATIONAL MEAN SEA LEVEL OF 1929.
- LEGEND:**
- SANITARY MANHOLE
 - ⊙ ELEC MANHOLE
 - ⊗ STORM MANHOLE
 - ⊕ HYDRANT
 - ⊖ CATCH BASIN
 - ⊘ VALVE BOX
 - ⊙ SLURRY GATE VALVE
 - ⊖ GAS SHUT OFF
 - ⊙ LIGHT POLE
 - ⊖ T - FENCE
 - ⊙ TELL POLE
 - ⊖ G - GAS MAIN
 - ⊙ SET IRON PIPE
 - ⊖ T - TELEPHONE LINE
 - ⊙ FOUND IRON PIPE
 - ⊖ W - WATER MAIN
 - ⊙ CONCREDS TREE
 - ⊖ C - CABLE TV LINE
 - ⊙ SCOUROUS TREE
 - ⊖ C - CABLE TV LINE

WASTE MANAGEMENT

2011.0006.01

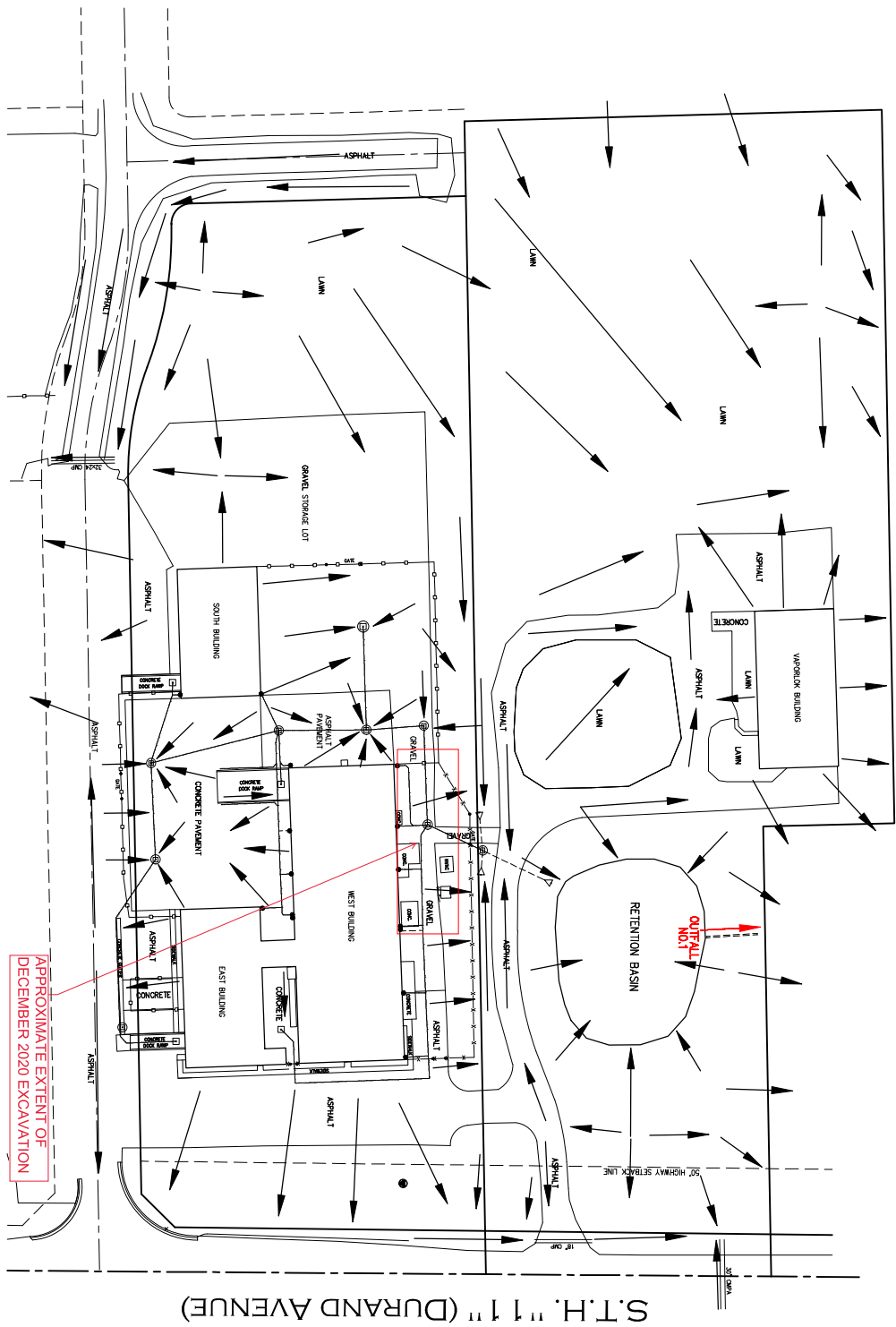
SHEET S-2

POND DESIGN ELEVATIONS
 FOR
WM MERCURY WASTE, INC.
 2121 DURAND AVENUE
 UNION GROVE, WISCONSIN

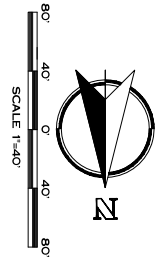
Nielsen Madsen & Barber S.C.
 Civil Engineers and Land Surveyors

1339 Washington Ave. Racine, WI. 53403
 Tele: (262)634-5588 Fax: (262)634-5024
 Website www.nmbssc.net





S.T.H. "1" (DURAND AVENUE)



BEARING BASE: GRID NORTH, WISCONSIN
 COORDINATE SYSTEM: STATE PLANE,
 NAD 83, UTM ZONE 16S
 ELEVATION REF: TO NATIONAL
 GEODETIC SURVEY OF 1983

LEGEND:
 ○ STORM MANHOLE
 □ CATCH BASIN
 — STORM SEWER
 ● DOWNSPOUT RISER
 — DRAINAGE DIRECTION

APPROXIMATE EXTENT OF
 DECEMBER 2020 EXCAVATION

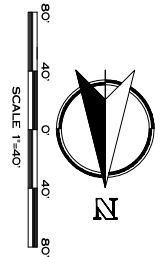
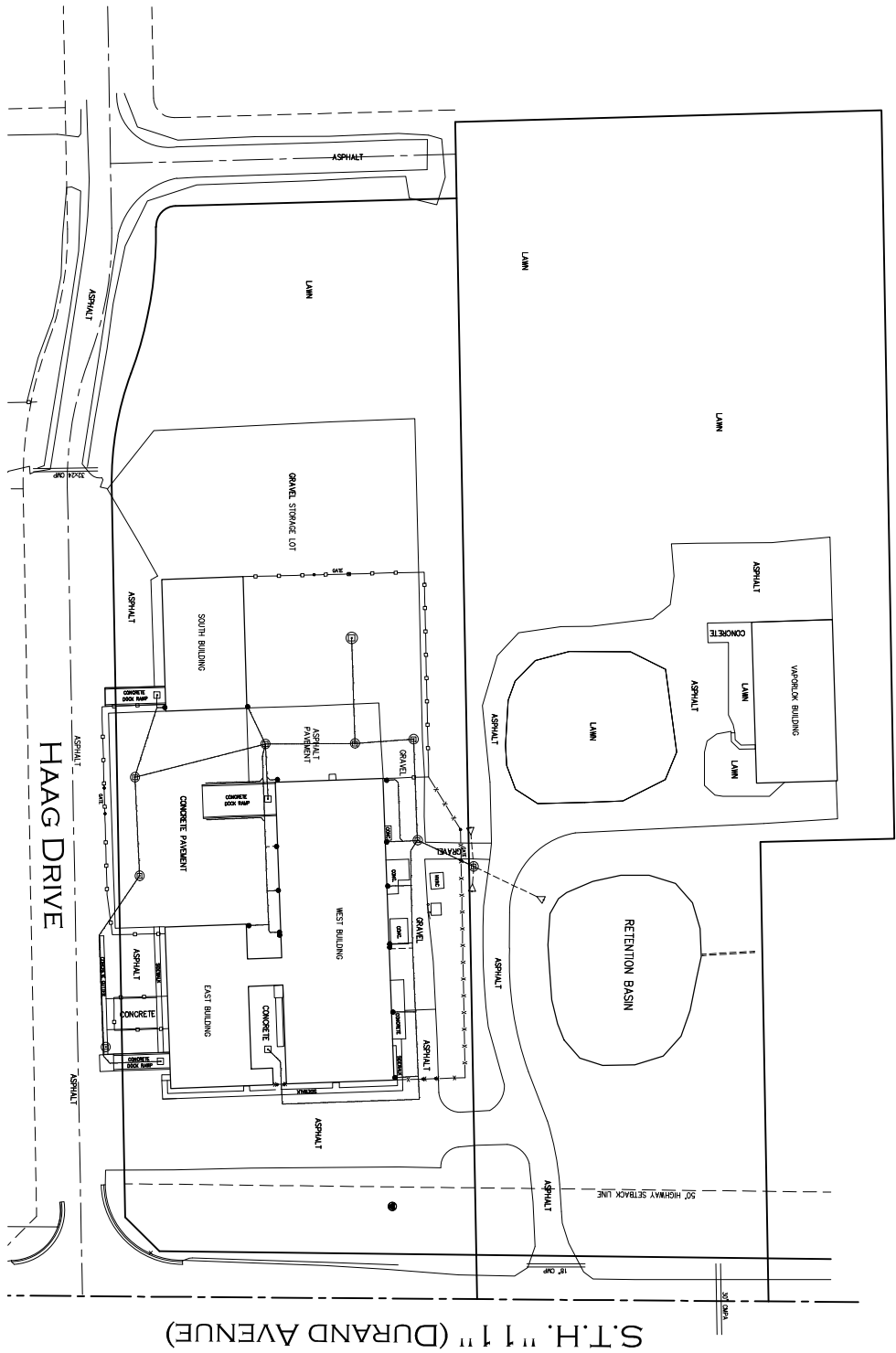


**SITE PLAN WITH STORM WATER
 FLOW PATTERN**
 FOR
WM MERCURY WASTE, INC.
 21211 DURAND AVENUE
 UNION GROVE, WISCONSIN

Nielsen Madsen & Barber S.C.
 Civil Engineers and Land Surveyors
 1339 Washington Ave. Racine, WI. 53403
 Tele: (262)634-5588 Fax: (262)634-5024
 Website www.nmbcs.net



PROJECT: 20060001
 DRAWING: 20060001
 DATE: 03/02/06
 SHEET: S-3



BEARING BASE GRID NORTH, WISCONSIN
 COORDINATE SYSTEM SOUTH ZONE
 ALL ELEVATIONS REFER TO NATIONAL
 GEODETIC DATUM OF 1983

LEGEND:
 ○ STORM MANHOLE
 □ CATCH BASIN
 - - - STORM SEWER
 ● DOWNSPOUT RISER
 — DRAINAGE DIRECTION

S.T.H. 111 (DURAND AVENUE)

PROJECT NO. 2011.0006.01
 SHEET S-4



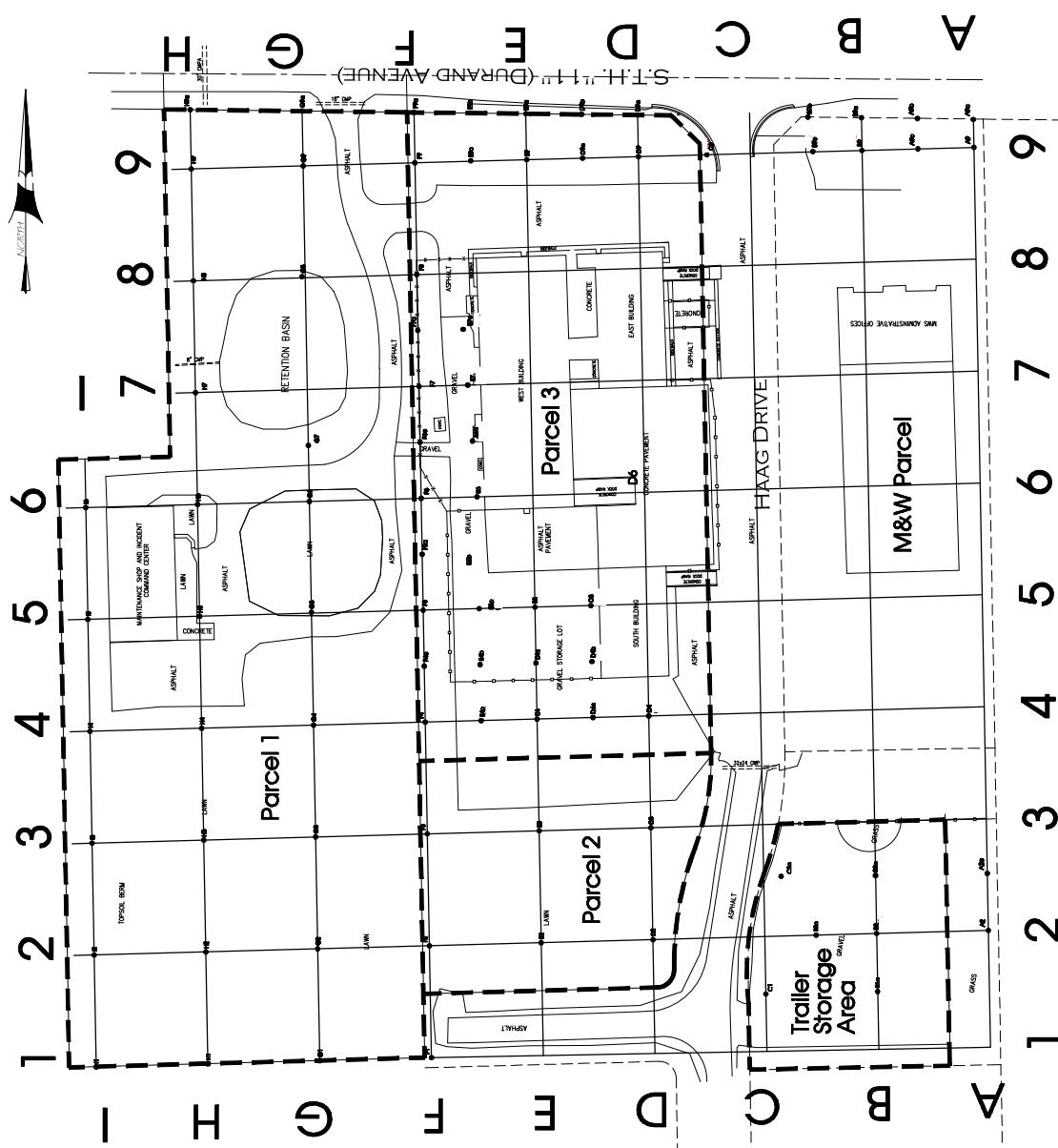
**SITE PLAN WITH STORM WATER
 MANAGEMENT FEATURES**
 FOR
WM MERCURY WASTE, INC.
 21211 DURAND AVENUE
 UNION GROVE, WISCONSIN

Nielsen Madsen & Barber S.C.
 Civil Engineers and Land Surveyors
 1339 Washington Ave. Racine, WI. 53403
 Tele: (262)634-5588 Fax: (262)634-5024
 Website www.nmbssc.net



ATTACHMENT 3

Sample Locations & Summary of Historical Soil Analytical Results



- LEGEND
- 000 MISC. CONC. STRUCT. (Imply/Imp)
 - AS SAMPLING LOCATION
 - ⊙ WELL SAMPLING LOCATION

SHEET NO.
SSL-2010
2006.0175.04

SITE PLAN
FOR
MERCURY WASTE SOLUTIONS, LLC
2121 DURAND AVENUE
UNION GROVE, WISCONSIN

NM **NIELSEN MADSEN & BARBER S.C.**
CONSULTING CIVIL ENGINEERS AND LAND SURVEYORS
1339 WASHINGTON AVE. RACINE, WI. 53403
TELEPHONE (262)634-5588 FAX (262)634-5024 E-MAIL NM@NMBSC.NET

& B

SCALE:	DATE:	BY:	FOR:
1" = 50'	08/20/10	DWG	SOIL SAMPLING
	08/20/10	CHK	
	08/20/10	APP	
	08/20/10	DES	
	08/20/10	REV	

2010 SITE - WIDE
SOIL SAMPLING RESULTS

**TABLE 2-1
SUMMARY OF HISTORICAL SOIL ANALYTICAL
RESULTS
21211 Durand Avenue, Union Grove, WI
BRRTS #02-52-586974**

Sample Identification	Sample Collection Year Mercury Results (mg/kg)						
	2009	2010	2012	2014	2016	2018	2020
A-2	0.1410	0.5670	0.0898	0.245	0.347	0.277	1.21
A-2a	0.2460	0.4750	0.3890	0.157	0.412	0.255	3.84
A-9	0.6420	0.6150	0.1480	0.201	1.25	0.452	0.981
A-9a	0.0628	0.0390	0.0280	0.203	0.661	0.212	0.958
A-9b	0.0861	0.1360	5.2700	0.144	1.38	0.772	1.95
A-9c	0.9810	0.1080	0.0385	0.056	0.46	0.334	1.89
B-1a	0.1250	0.0583	--	--	--	--	0.175
B-2	0.0614	0.0656	--	--	--	--	0.643 J
B-2a	0.0358	0.0907	--	--	--	--	0.306
B-2c	0.0874	0.0750	--	--	--	--	0.400 J
B-2c	0.0748	<0.0299	--	--	--	--	--
B-3	--	0.2320	--	--	--	--	0.213
B-9	7.7400	0.457	1.0800	0.264	0.274	0.152	3.02
B-9a	0.3500	0.2820	0.1960	2.97	0.108	2.51	2.45
B-9b	0.6440	0.0559	0.7840	1.01	3.17	5.49	6.9
B-9c	5.5400	0.5810	0.7480	0.591	2.67	2.58	3.17
C-1	0.0752	0.0492	--	--	--	--	0.359
C-2a	0.0353	0.0627	--	--	--	--	0.755 J
C-9	4.3600	1.4100	1.6700	1.29	1.61	0.79	10.9
D-2	0.2500	0.2760	0.2360	0.165	1.12	0.13	0.232
D-3	0.1500	0.1400	0.2970	0.206	0.877	0.479	0.039 J
D-4	0.2390	0.0384	0.0200	0.062	6.41	1.76	0.681
D-4b	0.0648	0.1790	--	--	--	--	--
D-4c	0.1110	0.1020	0.0200	0.264	0.818	0.216	1.07
D-4c	0.9710	0.3860	--	--	--	--	--
D-5	<0.0405	0.0994	--	--	--	--	--
D-9	2.6500	0.8890	1.1400	2.08	0.876	0.386	2.77
D-9a	0.2530	0.0536	0.0522	0.162	0.135	0.565	2.51
D-9b	0.3640	0.0585	0.1120	0.268	0.442	0.978	1.44
D-9c	0.3200	2.3600	0.1180	3.88	0.729	0.396	5.38
E-2	0.1770	0.1220	0.2400	0.263	0.147	0.259	0.16
E-3	0.4630	0.4890	0.2690	0.341	0.92	0.07	0.483
E-4	0.0410	0.0971	0.0210	0.031	2.46	0.047	11.9
E-4a	0.0486	0.0820	--	--	--	--	--
E-4b	0.0627	0.0828	--	--	--	--	--
E-4c	0.0760	0.0681	<0.0311	0.023	2.68	0.323	3.98
E-5	<0.0292	0.1160	--	--	--	--	--
E-5	0.0786	0.1340	--	--	--	--	--
E-5b	0.0531	0.0320	--	--	--	--	--
E-5c	0.0546	0.3720	--	--	--	--	--
E-6	0.0859	0.1960	0.0733	0.011	0.863	0.542	776
E-6a	0.0541	0.0220	0.1600	1.13	2.31	1.74	26.6
E-6a	0.3020	1.3100	--	--	--	--	--
E-7	0.7280	0.0293	<0.0330	9.47	0.842	3.19	0.513 J
E-7a	0.3420	0.0428	0.2410	1.63	0.876	1.95	0.612
E-9	1.9800	1.6500	1.0400	1.39	1.36	2.51	2.09
E-9a	0.7070	0.0230	0.1350	0.19	1.12	0.993	1.12
E-9b	0.1280	0.0798	0.1190	0.891	1.37	0.706	0.323 J
E-9c	0.1260	0.5160	0.0978	1.62	1.4	0.256	1.01
F-1	0.3500	0.1800	0.2250	0.129	0.115	0.149	0.261
F-2	0.1790	0.1780	0.1630	0.22	0.343	0.121	0.203
F-3	0.2110	0.0837	0.1640	0.304	0.101	0.406	0.219
F-4	0.3580	0.311	0.2580	0.033	0.997	0.076	0.278
F-4a	3.0800	0.3040	0.7630	1.04	2.53	--	1.06
F-5	2.3100	0.279	0.1050	<0.009	0.192	0.542	1.58
F-5a	2.0000	0.373	0.9780	0.12	0.131	0.11	0.589 J
F-6	3.1400	0.0845	0.1850	0.069	2.45	0.063	14.8
F-6a	0.1850	0.0619	0.0398	0.176	0.476	0.319	632
F-7	0.6990	1.12	0.3830	5.13	2.07	0.596	39.5
F-7a	3.2000	0.0918	3.2700	0.554	4.15	0.386	0.094

**TABLE 2-1
SUMMARY OF HISTORICAL SOIL ANALYTICAL
RESULTS
21211 Durand Avenue, Union Grove, WI
BRRTS #02-52-586974**

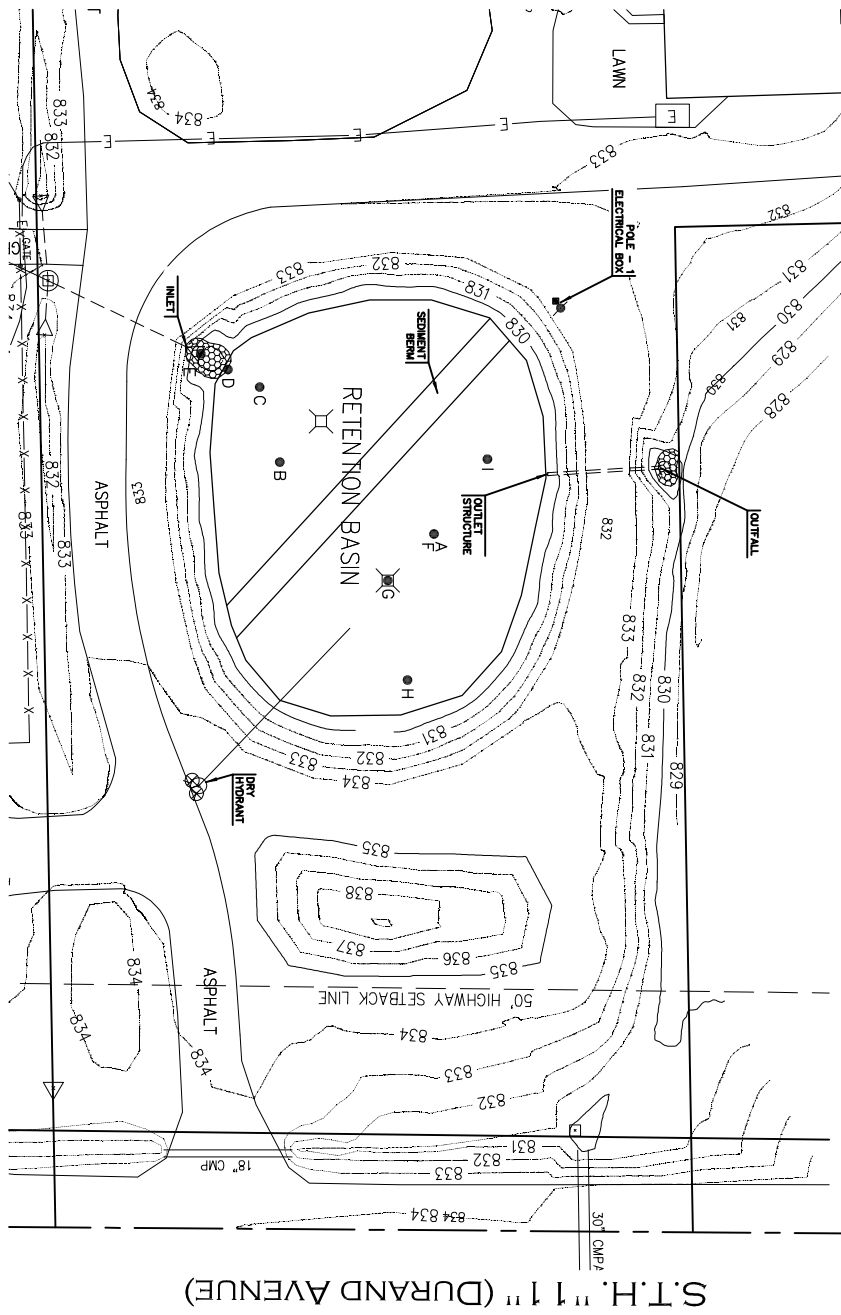
Sample Identification	Sample Collection Year Mercury Results (mg/kg)						
	2009	2010	2012	2014	2016	2018	2020
F-8	2.6100	0.843	1.9900	0.32	0.885	1.4	1.82
F-9	0.2440	1.3200	0.1330	0.793	0.812	0.121	1.77
F-9a	0.4840	0.0395	0.3660	0.759	0.768	0.666	0.059
G-1	0.4160	0.2480	0.3090	0.061	0.062	0.264	0.166
G-2	0.2110	0.0769	0.0785	0.044	0.074	0.231	0.364 J
G-3	0.1370	0.1400	0.0511	0.125	0.193	0.364	0.321
G-4	0.5410	0.5130	0.7210	0.06	0.152	0.338	0.358 J
G-5	0.5130	0.9400	0.3400	0.98	0.054	1.33	1.86
G-6	0.5590	0.0607	0.3000	0.184	0.086	0.125	1.59
G-7	0.1650	0.0250	<0.0335	0.792	0.233	0.336	2.47
G-8	0.3480	0.1330	0.0511	0.08	0.066	0.312	0.385
G-9	0.2900	0.4570	0.4490	0.214	0.419	0.249	0.479 J
G-9a	0.6160	1.4400	0.0577	0.177	0.401	0.231	0.292 J
H-1	0.4590	0.2540	0.4110	0.22	0.064	0.195	0.065 J
H-2	0.0723	0.0791	0.4480	0.103	0.08	0.196	0.133
H-3	0.2520	1.3200	0.1370	0.097	0.392	0.269	0.275
H-4	0.5000	1.1800	0.2350	0.502	2.09	0.751	0.122
H-5	0.4450	0.3620	0.3110	0.251	0.126	1.06	1.45
H-6	0.0814	0.0758	0.0592	0.415	0.989	0.232	1.18
H-7	0.3320	4.1300	0.1410	0.155	0.842	0.069	0.460 J
H-8	0.4850	0.1910	0.1250	0.405	0.221	0.086	0.36
H-9	0.3660	0.2020	0.2940	0.306	0.271	0.248	0.3
H-9a	2.2600	3.9200	0.3630	0.124	0.33	0.258	0.615 J
I-1	0.5320	0.162	0.2130	0.146	0.099	0.15	0.047 J
I-2	0.2380	0.0956	0.1640	0.202	0.066	0.057	0.049 J
I-3	0.2670	0.1470	0.1600	2.46	0.456	0.052	0.199
I-4	0.3550	0.1340	0.1110	0.19	0.032	0.252	0.321
I-5	0.1960	0.0841	0.1410	0.16	0.086	0.494	0.044 J
I-6	0.2340	0.4390	0.3780	0.202	0.607	0.256	0.367

Notes:

1. Data excerpted from WM's Release Notification Documentation submitted to the WDNR on 12/9/2020.
2. Highlighted cells exceed the site-specific standard of 10 mg/kg as established in the WDNR approved FPOR dated 8/18/2011.
3. Soil samples collected by Cardinal Environmental and EMT.
4. 2020 data was collected prior to remediation activities.

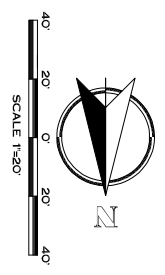
ATTACHMENT 4

Sample Locations & Summary of Historical Sediment Analytical Results



SAMPLING LEGEND

- SEDIMENT SAMPLING LOCATION
- ⊕ LOW SPOT IN BOTTOM OF POND BASIN



S.T.H. "11" (DURAND AVENUE)

PROJECT: 2011.0006.01
 SHEET: S-6



**STORMWATER POND
 SEDIMENT SAMPLES**
 FOR
WM MERCURY WASTE, INC.
 21211 DURAND AVENUE
 UNION GROVE, WISCONSIN

Nielsen Madsen & Barber S.C.
 Civil Engineers and Land Surveyors
 1339 Washington Ave. Racine, WI. 53403
 Tele: (262)634-5588 Fax: (262)634-5024
 Website www.nmbarsc.net



Sample Identification	Sample Collection Year							
	2012	2013	2014	2015	2016	2017	2018	2020
A	4.70	0.10	87.00	-	-	24.80	-	41.90
B	0.40	0.48	-	-	-	-	-	214.00
C	3.70	9.24	-	-	-	138.00	-	503.00
D	99.10	1290.00	-	-	-	-	-	277.00
E	214.00	359.00	-	-	-	-	-	-
F	16.20	-	-	-	-	-	-	184.00
G	3.03	-	-	-	-	-	-	26.00
H	0.48	-	-	-	-	-	-	18.60
I	8.27	-	-	-	-	-	-	35.20
Inlet Side	-	-	-	29.60	166.00	-	-	-
Outlet Side	-	-	-	8.40	-	-	-	-
#1	-	-	-	-	8.17	-	42.30	-
#2	-	-	-	-	30.40	-	178.00	-
#3	-	-	-	-	48.70	-	-	-
#4	-	-	-	-	49.90	-	-	-

Created by: LS
Checked By: SF

Notes:

1. Data excerpted from WM's lab reports.
2. The locations of points 1,2,3 and 4 are unknown and are not presented on the figure.

ATTACHMENT 5

Private Well Sampling Results



3303 Paine Avenue, Sheboygan, WI

October 19, 2009

Mr. Joseph P. Carruth, P.E.
Mercury Waste Solutions
21211 Durand Avenue
Union Grove, WI 53182-9711

Dear Mr. Carruth:

Attached is the laboratory report for the two (2) well water samples collected on September 25, 2009 for low-level mercury analysis. **The samples were below the detection limit of 3.3 ng/l (nanograms per liter), which is significantly lower than the current EPA drinking water standard of 2,000 ng/l.**

The samples were collected using the “Clean Hands/Dirty Hands” method. The samples were collected from water that had not been treated or softened. The samples were collected after running the water for approximately ten minutes. Field blanks were collected to verify that the equipment being used was clean, and that the samples were not contaminated either on site or during transportation. The following is a summary of the results:

Sample ID#	Date of Collection	Time of Collection	Sample Description/Location	Mercury Result (ng/l)
2009-01	09/25/09	01:20 p.m.	Well Water: Outdoor Tap - North Side 21211 Durand Avenue	ND
2009-02	09/25/09	02:10 p.m.	Well Water: Outdoor Tap - East Side 21255 Durand Avenue	ND

Comments

- ND = None Detected, Below the limit of detection of 3.3 ng/l.
- The “Field Blank” were not analyzed since mercury was not detected in the well water samples.

If you have any questions, concerns or need further clarification, please call. Thank you for the opportunity to be of service to you and Mercury Waste Solutions.

Sincerely
Cardinal Environmental Inc.

Bruce Ten Haken, CHMM
Project Manager

NORTHERN LAKE SERVICE, INC.
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue - Crandon, WI 54520
 Ph: (715)-478-2777 Fax: (715)-478-3060

Client: Cardinal Environmental Inc
 Attn: Bruce TenHaken
 3303 Paine Avenue
 Sheboygan, WI 53081 8456

Project: 01205.005

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
 WDATCP Laboratory Certification No. 105-330
 EPA Laboratory ID No. W100034

Printed: 10/13/09 Code: S Page 1 of 1

NLS Project: 137068
NLS Customer: 05016
 Fax: 920 459 2503 Phone: 800 413 7225

2009-01 NLS ID: 538434

COC: 102149:1 Matrix: DW

Collected: 09/25/09 13:20 Received: 09/29/09

Notes: Result may not be used for compliance reporting purposes.

Parameter

Mercury, Low Level as Hg

2009-02 NLS ID: 538436

COC: 102149:3 Matrix: DW

Collected: 09/25/09 14:10 Received: 09/29/09

Notes: Result may not be used for compliance reporting purposes.

Parameter

Mercury, Low Level as Hg

Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
ND	ng/L	1	3.3	10	10/13/09	245.7M/ 1631M	721026460
ND	ng/L	1	3.3	10	10/13/09	245.7M/ 1631M	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and/or LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQ:s adjusted to reflect dilution.

LOD = Limit of Detection LOQ = Limit of Quantitation ND = Not Detected (< LOD) 1000 ug/L = 1 mg/L
 DWB = Dry Weight Basis NA = Not Applicable %DWB = (mg/kg DWB) / 10000
 MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:



Authorized by:
 R. T. Krueger
 President

SAMPLE COLLECTION AND CHAIN OF CUSTODY RECORD **NORTHERN LAKE SERVICE, INC.**

Wisconsin Lab Cert. No. 721026460
WI DATCP 105-000330

Analytical Laboratory and Environmental Services
400 North Lake Avenue • Crandon, WI 54520-1298
Tel: (715) 478-2777 • Fax: (715) 478-3060



NO. 102149

CLIENT: Cardinal Environmental
 ADDRESS: 3303 Paine Ave. STATE: WI ZIP: 53081
 CITY: Sheboygan QUOTATION NO.:
 PROJECT DESCRIPTION / NO.: 01205.005
 DNR FID #: _____ DNR LICENSE #: _____
 CONTACT: Bruce Ten Hoken PHONE: 920-459-2500
 PURCHASE ORDER NO.: _____ FAX: 920-459-2503

FB = Field Blank

- MATRIX:
 SW = surface water
 WW = waste water
 GW = groundwater
 DW = drinking water
 TIS = tissue
 AIR = air
 SOIL = soil
 SED = sediment
 PROD = product
 SL = sludge
 OTHER _____

USE BOXES BELOW to indicate if GW Sample is field filtered.
 Indicate G if WW Sample is Grab or Composite.
 Indicate F if GW Sample is field filtered.

ANALYZE PER ORDER OF ANALYSIS

low level Hg
 low level Hg
 low level Hg
 (Only to be tested if corresponding sample result is LOD)

ITEM NO.	NLS LAB. NO.	SAMPLE ID	COLLECTION DATE	TIME	MATRIX (See above)	ANALYZE PER ORDER OF ANALYSIS	DATE/TIME	DATE/TIME	COLLECTION REMARKS (i.e. DNR Well ID #)
1.	538434	2009-01	09/25/09	1:20 p.m.	DW	X	7:48 p.m.	09/25/09	21211 Dursand
2.	435	2009-01-FB			FB	X			↓
3.	436	2009-02		2:10 p.m.	DW	X			21255 Dursand
4.	538437	2009-02-FB			FB	X			↓
5.									
6.									
7.									
8.									
9.									
10.									

COLLECTED BY (signature): [Signature] RECEIVED BY (signature): _____
 RECOGNISHED BY (signature): _____
 CUSTODY SEAL NO. (IF ANY): _____
 DATE/TIME: _____
 METHOD OF TRANSPORT: _____
 REPORT TO: Bruce Ten Hoken
btenhoken@cardinalenvironmental.com
 INVOICE TO: Cardinal Environmental

RECEIVED AT NLS BY (signature): [Signature]
 DATE/TIME: 09/25/09 CONDITION: OK
 REMARKS & OTHER INFORMATION: See "Report to"
 WDNR FACILITY NUMBER: _____ E-MAIL ADDRESS: _____

COOLER # _____
 PRESERVATIVE: N = nitric acid OH = sodium hydroxide
 NP = no preservative Z = zinc acetate HA = hydrochloric & ascorbic acid
 S = sulfuric acid M = methanol H = hydrochloric acid

1. TO MEET REGULATORY REQUIREMENTS, THIS FORM **MUST** BE COMPLETED IN DETAIL AND INCLUDED IN THE COOLER CONTAINING THE SAMPLES DESCRIBED.
 2. PLEASE USE ONE LINE PER SAMPLE, **NOT** PER BOTTLE.
 3. RETURN THIS FORM WITH SAMPLES - CLIENT MAY KEEP PINK COPY.
 4. PARTIES COLLECTING SAMPLE, LISTED AS **REPORT TO** AND LISTED AS **INVOICE TO** AGREE TO STANDARD TERMS & CONDITIONS ON REVERSE.

IMPORTANT: **DUPLICATE COPY**

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034
Printed: 09/02/10 Code: NNNN-S Page 1 of 1

Client: Cardinal Environmental Inc
Attn: Bruce TenHaken
3303 Paine Avenue
Sheboygan, WI 53081 8456

NLS Project: 150834
NLS Customer: 05016
Fax: 920 459 2503 Phone: 800 413 7225

Project: 01205.007

W-01 NLS ID: 578846

COC: 108072 Matrix: DW

Collected: 08/25/10 10:38 Received: 08/27/10

Parameter

Parameter	Result	Units	Dilution	LOD	LOG/MCL	Analyzed	Method	Lab
Mercury, Low Level as Hg	ND	ng/L	1	3.3	10	09/01/10	245.7M/ 1631M	721026460

W-02 NLS ID: 578848

COC: 108072 Matrix: DW

Collected: 08/25/10 11:35 Received: 08/27/10

Parameter

Parameter	Result	Units	Dilution	LOD	LOG/MCL	Analyzed	Method	Lab
Mercury, Low Level as Hg	ND	ng/L	1	3.3	10	09/01/10	245.7M/ 1631M	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and/or LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution.

LOD = Limit of Detection
DWB = Dry Weight Basis
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

LOQ = Not Detected (< LOD)
%DWB = (mg/kg DWB) / 10000

1000 ug/L = 1 mg/L

Reviewed by:

Authorized by:
R. T. Krueger
President



3303 Paine Ave., Sheboygan, WI

October 22, 2010

Mr. Joseph P. Carruth, P.E.
Mercury Waste Solutions, Inc.
21211 Durand Ave.
Union Grove, WI 53182-9711

Dear Mr. Carruth:

RE: 2010 Well Water Sampling Results from Neighborhood Drinking Water Wells

On September 22, 2010 Cardinal Environmental Inc. (Cardinal) collected water samples from various drinking water wells in the neighborhood of Mercury Waste Solutions, Inc., 21211 Durand Ave., Union Grove, WI (MWS). The samples were collected to determine the mercury concentration in the water. The current EPA drinking water standard for mercury is 2,000 ng/l (nanograms per liter).

The samples were collected using the "Clean Hands/Dirty Hands" method. Mr. Bruce Ten Haken from Cardinal collected the samples with the assistance of Mr. Joseph Carruth from MWS. The samples were collected from well water that had not been treated, softened, or heated. Sampling supplies and containers were provided by Northern Lake Services, Inc., Crandon, WI (NLS). The supplies included plastic gloves, field blank water, and 250-ml glass containers with teflon-lined lids.

The samples were collected after running the water for approximately ten minutes. Field blanks were collected to verify that the equipment being used was clean, and that the water samples were not contaminated either on site or during transportation.

After collection, the samples were sent to NLS for low level mercury analysis. The samples were analyzed by EPA Method 245.7M / 1631M using a Lachat "Quickchem" Analyzer equipped with an atomic fluorescent detector. **All samples were below the laboratory's detection limit of 3.3 ng/l (nanograms per liter), which is significantly lower than the current EPA drinking water standard of 2,000 ng/l.**

A summary of the results is attached, along with the NLS laboratory reports and chain-of-custodies. If you have any questions, concerns or the need for further clarification, please call. Thank you for the opportunity to be of service to you and MWS.

Sincerely
Cardinal Environmental Inc.

Bruce Ten Haken, CHMM
Project Manager



3303 Paine Ave., Sheboygan, WI

2010 MWS Neighborhood Well Water Summary (Collected 9/22/10)

Sample ID#	Date Collected	Time Collected	Address (Union Grove, WI)	Sample Location	Mercury Result
DW-01	9/22/2010	8:31 am	21410 Durand Ave.	Kitchen Sink Faucet	ND
DW-02	9/22/2010	9:06 am	21209 Durand Ave. (M&W Shops)	Exterior Faucet South Side	ND
DW-03	9/22/2010	9:34 am	21115 Durand Ave.	Exterior Faucet Southwest Corner	ND
DW-04	9/22/2010	10:05 am	21021 Durand Ave. (Shepard Industries)	Exterior Faucet Southeast Side	ND
DW-05	9/22/2010	10:58 am	4627 Haag Drive (Redwood Construction)	Exterior Faucet Northeast Corner of House	ND
DW-06	9/22/2010	11:24 am	4701 Haag Drive (CAMCO)	Bathroom Sink Faucet In Production Area	ND
DW-07	9/22/2010	12:23 pm	4720 Haag Drive (Plush Industries)	Utility Sink Faucet In Production Area	ND
DW-08	9/22/2010	12:43 pm	21415 Durand Ave.	Exterior Faucet South Side of House	ND
DW-09	9/22/2010	1:20 pm	21349 Durand Ave.	Exterior Faucet Northeast Corner of House	ND
DW-10	9/22/2010	1:39 pm	21341/21345 Durand Ave. (Residential, Shared Well)	Exterior Faucet By Well Between Properties	ND
DW-11	9/22/2010	2:39 pm	4823 Schoen Road (Hickory Haven)	Pressure Tank Faucet Center Pump House	ND
DW-12	9/22/2010	3:06 pm	4823 Schoen Road (Hickory Haven)	Pressure Tank Faucet South Pump House	ND
DW-13	9/22/2010	3:30 pm	4823 Schoen Road (Hickory Haven)	Pressure Tank Faucet North Pump House	ND
DW-14	9/22/2010	4:00 pm	4734 Schoen Road	Exterior Faucet South Side of House	ND
DW-15	9/22/2010	4:30 pm	4634 Schoen Road	Exterior Faucet East Side of House	ND
DW-16	9/22/2010	4:51 pm	4701 Schoen Road	Kitchen Sink Faucet	ND

- ND = Not Detected, below the detection limit of 3.3 nanograms per liter (ng/l).
- Field blanks were not analyzed since all samples were reported as “ND”.
- The addresses are single-family residential properties except where noted in the address column.
- The samples were collected of water that had not been treated, softened, or heated. The samples were collected from faucets as close to the well as practical.
- Additional information and comments regarding the analysis of the samples can be found on the attached laboratory reports and chain of custodies from Northern Lake Services, Inc., Crandon, WI.

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue - Crandon, WI 54520
 Ph: (715)-478-2777 Fax: (715)-478-3060

WDNR Laboratory ID No. 721026460
 WDATCP Laboratory Certification No. 105-330
 EPA Laboratory ID No. WI00034

Printed: 10/11/10 Code: NNNN-S Page 1 of 2

Client: Cardinal Environmental Inc
 Attn: Customer Service
 3303 Paine Avenue
 Sheboygan, WI 53081 8456

Project revised on: 10/11/2010 ** See note below **

NLS Project: 152541
 NLS Customer: 05016
 Fax: 920 459 2503 Phone: 800 413 7225

Project: 01205.007-Results may not be used for compliance reporting

DW-01 NLS ID: 584320									
COC: 127276:1 Matrix: DW									
Collected: 09/22/10 08:31 Received: 09/24/10									
Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab	
Mercury, Low Level as Hg	ND	ng/L	1	3.3	10	09/29/10	245.7M/ 1631M	721026460	
DW-02 NLS ID: 584322									
COC: 127276:3 Matrix: DW									
Collected: 09/22/10 09:06 Received: 09/24/10									
Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab	
Mercury, Low Level as Hg	ND	ng/L	1	3.3	10	09/29/10	245.7M/ 1631M	721026460	
DW-03 NLS ID: 584324									
COC: 127276:5 Matrix: DW									
Collected: 09/22/10 09:34 Received: 09/24/10									
Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab	
Mercury, Low Level as Hg	ND	ng/L	1	3.3	10	09/29/10	245.7M/ 1631M	721026460	
DW-04 NLS ID: 584326									
COC: 127276:7 Matrix: DW									
Collected: 09/22/10 10:05 Received: 09/24/10									
Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab	
Mercury, Low Level as Hg	ND	ng/L	1	3.3	10	09/29/10	245.7M/ 1631M	721026460	
DW-05 NLS ID: 584328									
COC: 127276:9 Matrix: DW									
Collected: 09/22/10 10:58 Received: 09/24/10									
Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab	
Mercury, Low Level as Hg	ND	ng/L	1	3.3	10	09/29/10	245.7M/ 1631M	721026460	
DW-06 NLS ID: 584330									
COC: 125085:1 Matrix: DW									
Collected: 09/22/10 11:24 Received: 09/24/10									
Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab	
Mercury, Low Level as Hg	ND	ng/L	1	3.3	10	09/29/10	245.7M/ 1631M	721026460	
DW-07 NLS ID: 584332									
COC: 125085:3 Matrix: DW									
Collected: 09/22/10 12:23 Received: 09/24/10									
Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab	
Mercury, Low Level as Hg	ND	ng/L	1	3.3	10	09/29/10	245.7M/ 1631M	721026460	
DW-08 NLS ID: 584334									
COC: 125085:5 Matrix: DW									
Collected: 09/22/10 12:43 Received: 09/24/10									
Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab	
Mercury, Low Level as Hg	ND	ng/L	1	3.3	10	09/29/10	245.7M/ 1631M	721026460	
DW-09 NLS ID: 584336									
COC: 125085:7 Matrix: DW									
Collected: 09/22/10 13:20 Received: 09/24/10									
Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab	
Mercury, Low Level as Hg	ND	ng/L	1	3.3	10	09/29/10	245.7M/ 1631M	721026460	

ANALYTICAL REPORT

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520
Ph: (715)-478-2777 Fax: (715)-478-3060

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EPA Laboratory ID No. WI00034

Printed: 10/11/10 Code: NNNN-S Page 2 of 2

Client: Cardinal Environmental Inc
Attn: Customer Service
3303 Paine Avenue
Sheboygan, WI 53081 8456

Project revised on: 10/11/2010 ** See note below **

NLS Project: 152541
NLS Customer: 05016
Phone: 800 413 7225
Fax: 920 459 2503

Project: 01205-007-Results may not be used for compliance reporting

DW-10 NLS ID: 584338

COC: 125085:9 Matrix: DW

Collected: 09/22/10 13:39 Received: 09/24/10

Parameter

Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
ND	ng/L	1	3.3	10	09/29/10	245.7M/ 1631M	721026460

DW-11 NLS ID: 584340

COC: 117006:1 Matrix: DW

Collected: 09/22/10 14:39 Received: 09/24/10

Parameter

Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
ND	ng/L	1	3.3	10	09/29/10	245.7M/ 1631M	721026460

DW-12 NLS ID: 584342

COC: 117006:3 Matrix: DW

Collected: 09/22/10 15:06 Received: 09/24/10

Parameter

Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
ND	ng/L	1	3.3	10	09/29/10	245.7M/ 1631M	721026460

DW-13 NLS ID: 584344

COC: 117006:5 Matrix: DW

Collected: 09/22/10 15:30 Received: 09/24/10

Parameter

Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
ND	ng/L	1	3.3	10	09/29/10	245.7M/ 1631M	721026460

DW-14 NLS ID: 584346

COC: 117006:7 Matrix: DW

Collected: 09/22/10 16:00 Received: 09/24/10

Parameter

Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
ND	ng/L	1	3.3	10	09/29/10	245.7M/ 1631M	721026460

DW-15 NLS ID: 584348

COC: 117006:9 Matrix: DW

Collected: 09/22/10 16:30 Received: 09/24/10

Parameter

Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
ND	ng/L	1	3.3	10	09/29/10	245.7M/ 1631M	721026460

DW-16 NLS ID: 584350

COC: 115750:2 Matrix: DW

Collected: 09/22/10 16:51 Received: 09/24/10

Parameter

Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
ND	ng/L	1	3.3	10	09/29/10	245.7M/ 1631M	721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and/or LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution.

LOD = Limit of Detection
DWB = Dry Weight Basis
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

1000 ug/L = 1 mg/L

ND = Not Detected (< LOD)
%DWB = (mg/kg DWB) / 10000

Reviewed by:



Authorized by:
R. T. Krueger
President

Revision note: Moved P-01 and P-01FB to a separate project.

SAMPLE COLLECTION AND CHAIN OF CUSTODY RECORD

NORTHERN LAKE SERVICE, INC.
 Analytical Laboratory and Environmental Services
 400 North Lake Avenue • Crandon, WI 54520-1298
 Tel: (715) 478-2777 • Fax: (715) 478-3060

Wisconsin Lab Cert. No. 721026460
 WI DATCP 105-000330

USE BOXES BELOW: Indicate Y or N if GW Sample is field filtered.
 Indicate G or C if WW Sample is Grab or Composite.

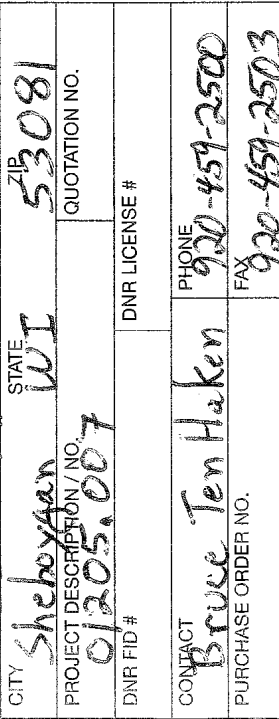
MATRIX:
 SW = surface water
 WW = waste water
 GW = groundwater
 DW = drinking water
 TIS = tissue
 AIR = air
 SOIL = soil
 SED = sediment
 PROD = product
 SL = sludge
 OTHER

CLIENT: **Cardinal Environmental Inc.**
 ADDRESS: **3303 Paine Avenue**
 CITY: **Sheboygan WI** STATE: **WI** ZIP: **53081**
 PROJECT DESCRIPTION / NO.: **01205.007** QUOTATION NO.
 DNR FID # **01205.007** DNR LICENSE #
 CONTACT: **Bruce Ten Haken** PHONE: **920-459-2500**
 PURCHASE ORDER NO. **920-459-2503** FAX: **920-459-2503**

ITEM NO.	SAMPLE ID	COLLECTION DATE	TIME	MATRIX (See above)	ANALYZE PER ORDER OF ANALYSIS	COLLECTION REMARKS (i.e. DNR Well ID #)
1.	DW-01	9/22/10	8:31 a.m.	DW	X	21410 Durand
2.	DW-01 (F.B.)			F.B.		↓
3.	DW-02		9:06 a.m.	DW	X	21209 Durand (MW shop)
4.	DW-02 (F.B.)			F.B.		↓
5.	DW-03		9:34 a.m.	DW	X	21115 Durand
6.	DW-03 (F.B.)			F.B.		↓
7.	DW-04		10:05 a.m.	DW	X	21021 Durand
8.	DW-04 (F.B.)			F.B.		↓
9.	DW-05		10:58 a.m.	DW	X	4627 Haag
10.	DW-05 (F.B.)			F.B.		↓

LOW Level Haag
 Know Level Haag
 Field Blank
 if corresponding sample is
 7 LCD, all before testing

NO. 127276



DATE/TIME: **9/22/2010**
 RECEIVED BY (signature): *Bruce Ten Haken*
 METHOD OF TRANSPORT: **See "Report To"**

DATE/TIME: **9/22/2010**
 RECEIVED BY (signature): *Bruce Ten Haken*
 METHOD OF TRANSPORT: **See "Report To"**

DATE/TIME: **9/22/2010**
 RECEIVED BY (signature): *Bruce Ten Haken*
 METHOD OF TRANSPORT: **See "Report To"**

RECEIVED AT NIS BY (signature): *Bruce Ten Haken*
 DISPATCHED BY (signature): *Bruce Ten Haken*
 COOLER #
 PRESERVATIVE: N = nitric acid, OH = sodium hydroxide, NP = no preservative, Z = zinc acetate, HA = hydrochloric & ascorbic acid, M = methanol, H = hydrochloric acid, S = sulfuric acid

RECEIVED AT NIS BY (signature): *Bruce Ten Haken*
 DISPATCHED BY (signature): *Bruce Ten Haken*
 COOLER #
 PRESERVATIVE: N = nitric acid, OH = sodium hydroxide, NP = no preservative, Z = zinc acetate, HA = hydrochloric & ascorbic acid, M = methanol, H = hydrochloric acid, S = sulfuric acid

RECEIVED AT NIS BY (signature): *Bruce Ten Haken*
 DISPATCHED BY (signature): *Bruce Ten Haken*
 COOLER #
 PRESERVATIVE: N = nitric acid, OH = sodium hydroxide, NP = no preservative, Z = zinc acetate, HA = hydrochloric & ascorbic acid, M = methanol, H = hydrochloric acid, S = sulfuric acid

REPORT TO: **Bruce Ten Haken**
 btenhaken@cardinalenvironmental.com
 INVOICE TO: **Cardinal Environmental**

REPORT TO: **Bruce Ten Haken**
 btenhaken@cardinalenvironmental.com
 INVOICE TO: **Cardinal Environmental**

REPORT TO: **Bruce Ten Haken**
 btenhaken@cardinalenvironmental.com
 INVOICE TO: **Cardinal Environmental**

SAMPLE COLLECTION AND CHAIN OF CUSTODY RECORD **NORTHERN LAKE SERVICE, INC.**

Wisconsin Lab Cert. No. 721026460
WI DATCP 105-000330
Analytical Laboratory and Environmental Services
400 North Lake Avenue • Crandon, WI 54520-1298
Tel: (715) 478-2777 • Fax: (715) 478-3060

CLIENT: See Page 1

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

PROJECT DESCRIPTION / NO.: _____ QUOTATION NO.: _____

DNR FID #: 01205.007 DNR LICENSE #: _____

CONTACT: _____ PHONE: _____

PURCHASE ORDER NO.: _____ FAX: _____

USE BOXES BELOW: Indicate Y or N if GW Sample is field filtered.
Indicate G or C if WW Sample is Grab or Composite.

ANALYZE PER ORDER OF ANALYSIS

low level Mercury (Only test if field blank is corresponding sample is > LOD. Call first)

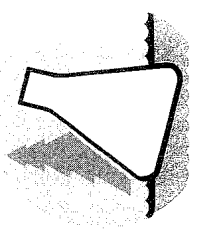
low level Mercury

low level Mercury

MATRIX:
SW = surface water
WW = waste water
GW = groundwater
DW = drinking water
TIS = tissue
AIR = air
SOIL = soil
SED = sediment
PROD = product
SL = sludge
OTHER

ITEM NO.	SAMPLE ID	DATE	COLLECTION TIME	MATRIX (See above)	COLLECTION REMARKS (i.e. DNR Well ID #)
1.	DW-06	9/22/10	11:24 a.m.	DW	4701 Haag
2.	F.B.			FB	4730 Haag
3.	DW-07		12:23 p.m.	DW	21415 Durand
4.	F.B.			FB	21349 Durand
5.	DW-08		12:43 p.m.	DW	21345 Durand
6.	F.B.			FB	
7.	DW-09		1:20 p.m.	DW	
8.	F.B.			FB	
9.	DW-10		1:39 p.m.	DW	
10.	F.B.			FB	

NO. 125085



COLLECTED BY (signature): _____

REINQUIRED BY (signature): _____

DISPATCHED BY (signature): _____

CUSTODY SEAL NO. (IF ANY): _____

RECEIVED BY (signature): _____ DATE/TIME: 9/22/10

METHOD OF TRANSPORT: _____

DATE/TIME: _____

TEMP: _____

CONDITION: BK

REMARKS & OTHER INFORMATION: See "Report To" page 1

WDNR FACILITY NUMBER: _____ E-MAIL ADDRESS: _____

COOLER # _____

RECEIVED AT NLS BY (signature): _____

PRESERVATIVE: N = nitric acid, OH = sodium hydroxide, NP = no preservative, Z = zinc acetate, HA = hydrochloric & ascorbic acid, M = methanol, H = hydrochloric acid, S = sulfuric acid

REPORT TO: Page 1

INVOICE TO: Page 2

1. TO MEET REGULATORY REQUIREMENTS, THIS FORM MUST BE COMPLETED IN DETAIL AND INCLUDED IN THE COOLER CONTAINING THE SAMPLES DESCRIBED.
2. PLEASE USE ONE LINE PER SAMPLE, NOT PER BOTTLE.
3. RETURN THIS FORM WITH SAMPLES - CLIENT MAY KEEP PINK COPY.
4. PARTIES COLLECTING SAMPLE, LISTED AS REPORT TO AND LISTED AS INVOICE TO AGREE TO STANDARD TERMS & CONDITIONS ON REVERSE.



Page 2 of 4

NORTHERN LAKE SERVICE, INC.

Analytical Laboratory and Environmental Services
 400 North Lake Avenue • Crandon, WI 54520-1298
 Tel: (715) 478-2777 • Fax: (715) 478-3060

SAMPLE COLLECTION AND CHAIN OF CUSTODY RECORD

Wisconsin Lab Cert. No. 721026460
 WI DATCP 105-000330

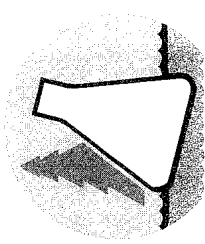
CLIENT: See Page 1 STATE: _____ ZIP: _____

PROJECT DESCRIPTION / NO.: _____ QUOTATION NO.: _____

DNR FID #: 012051007 DNR LICENSE #: _____

CONTACT: _____ PHONE: _____

PURCHASE ORDER NO.: _____ FAX: _____



NO. 117008

USE BOXES BELOW: Indicate Y or N if GW Sample is field filtered.
 Indicate G or C if Grab Sample is Grab or Composite.

ANALYZE PER ORDER OF ANALYSIS

How Level (Only test if field blank if corresponding sample is > LOD. Call first)									
How Level	X	X	X	X	X	X	X	X	X

ITEM NO.	SAMPLE ID	COLLECTION DATE	COLLECTION TIME	MATRIX (See above)	REMARKS
1.	DW-11 ↓ F.B.	9/22/10	2:39 p.m.	DW	4823 Schoen - Center (Huckey Haven) ↓
2.	341			FB	
3.	DW-12 ↓ F.B.		3:06 p.m.	DW	4823 Schoen - South (Huckey Haven) ↓
4.	343			FB	
5.	DW-13 ↓ F.B.		3:30 p.m.	DW	4823 Schoen - North (Huckey Haven) ↓
6.	345			FB	
7.	DW-14 ↓ F.B.		4:00 p.m.	DW	4834 Schoen ↓
8.	347			FB	
9.	DW-15 ↓ F.B.	9/22/10	4:57 p.m.	DW	4634 Schoen ↓
10.	349			FB	

REPORT TO: Ref 1

INVOICE TO: See

COLLECTED BY (signature): _____ DATE/TIME: 9/22/10

RELINQUISHED BY (signature): _____ DATE/TIME: _____

DISPATCHED BY (signature): _____ DATE/TIME: _____

CUSTOMER SEAL NO. (IF ANY): _____

RECEIVED BY (signature): _____ DATE/TIME: _____

METHOD OF TRANSPORT: _____

DATE/TIME: 9/22/10 9:15 AM

CONDITION: OK

TEMP: _____

REMARKS & OTHER INFORMATION: See "Report To" Page 1

WDNR FACILITY NUMBER: 454

E-MAIL ADDRESS: _____

COOLER # _____

RECEIVED AT NLS BY (signature): Judith K...

PRESERVATIVE: N = nitric acid, OH = sodium hydroxide, NP = no preservative, Z = zinc acetate, HA = hydrochloric & ascorbic acid, M = methanol, H = hydrochloric acid, S = sulfamic acid

(COC)
 Page 3 of 4

1. TO MEET REGULATORY REQUIREMENTS, THIS FORM MUST BE COMPLETED IN DETAIL AND INCLUDED IN THE COOLER CONTAINING THE SAMPLES DESCRIBED.
 2. PLEASE USE ONE LINE PER SAMPLE. NOT PER BOTTLE.
 3. RETURN THIS FORM WITH SAMPLES - CLIENT MAY KEEP PINK COPY.
 4. PARTIES COLLECTING SAMPLE, LISTED AS REPORT TO AND LISTED AS INVOICE TO, AGREE TO STANDARD TERMS & CONDITIONS ON REVERSE.

NORTHERN LAKE SERVICE, INC.

Analytical Laboratory and Environmental Services

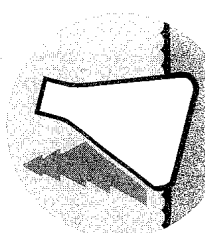
400 North Lake Avenue • Crandon, WI 54520-1298

Tel: (715) 478-2777 • Fax: (715) 478-3060

SAMPLE COLLECTION AND CHAIN OF CUSTODY RECORD

Wisconsin Lab Cert. No. 721026460

WI DATCP 105-000330



NO. 115750

CLIENT		ADDRESS		CITY		STATE		ZIP	
PROJECT DESCRIPTION / NO.		QUOTATION NO.		DNR LICENSE #		PHONE		FAX	
DNR FID #		PURCHASE ORDER NO.		CONTACT		DNR LICENSE #		PHONE	

USE BOXES BELOW: Indicate Y or N if GW Sample is field filtered.
Indicates or C if WW Sample is Grab or Composite.

ANALYZE PER ORDER OF ANALYSIS

Low Level Hg
Low Level Hg
Low Level Hg
if corresponding sample is 2500
COE 1st

MATRIX:
SW = surface water
WW = waste water
GW = groundwater
DW = drinking water
TIS = tissue
AIR = air
SOIL = soil
SED = sediment
PROD = product
SL = sludge
OTHER

ITEM NO.	SAMPLE ID	COLLECTION		MATRIX (See above)	COLLECTION REMARKS (i.e. DNR Well ID #)
		DATE	TIME		
1.	DW-16	9/22/10	4:57 p.m.	DW	4701 Schoen
2.	351			FB	
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

REPORT TO

INVOICE TO

see page 1

COLLECTED BY (signature)

RELINQUISHED BY (signature)

DISPATCHED BY (signature)

RECEIVED AT NIS BY (signature)

COOLER #

PRESERVATIVE: N = nitric acid, Z = zinc acetate, M = methanol, S = sulfuric acid

OH = sodium hydroxide, HA = hydrochloric & ascorbic acid, H = hydrochloric acid

DATE/TIME: 9/22/10

DATE/TIME: 9/24/10

DATE/TIME: 9/15/10

CONDITION

TEMP.

REMARKS & OTHER INFORMATION

WDNR FACILITY NUMBER

E-MAIL ADDRESS

1. TO MEET REGULATORY REQUIREMENTS, THIS FORM MUST BE COMPLETED IN DETAIL AND INCLUDED IN THE COOLER CONTAINING THE SAMPLES DESCRIBED.
2. PLEASE USE ONE LINE PER SAMPLE. NOT PER BOTTLE.
3. RETURN THIS FORM WITH SAMPLES - CLIENT MAY KEEP PINK COPY.
4. PARTIES COLLECTING SAMPLE, LISTED AS REPORT TO AND LISTED AS INVOICE TO AGREE TO STANDARD TERMS & CONDITIONS ON REVERSE.

ATTACHMENT 6

Endangered Resources Preliminary Assessment



Endangered Resources Preliminary Assessment

Created on **8/13/2021**. This report is good for one year after the created date.

DNR staff will be reviewing the ER Preliminary Assessments to verify the results provided by the Public Portal. ER Preliminary Assessments are only valid if the project habitat and waterway-related questions are answered accurately based on current site conditions. If an assessment is deemed invalid, a full ER review may be required even if the assessment indicated otherwise.

Results

A search was conducted of the NHI Portal within a 1-mile buffer (for terrestrial and wetland species) and a 2-mile buffer (for aquatic species) of the project area. Based on these search results, below are your follow-up actions.

No further action is necessary.

This project is covered by the Broad Incidental Take Permit/Authorization for No/Low Impact Activities (No/Low BITP/A) (<https://dnr.wi.gov/topic/ERReview/ITNoLowImpact.html>). This BITP/A covers projects that the DNR has determined will have no impact or a minimal impact to endangered and threatened species in the state. Due to this coverage under the No/Low BITP/A, a formal review letter is not needed and there are no actions that need to be taken to comply with state and/or federal endangered species laws, any take that may result from the proposed project is permitted/authorized.

A copy of this document can be kept on file and submitted with any other necessary DNR permit applications to show that the need for an ER Review has been met. This notice only addresses endangered resources issues. This notice does not constitute DNR authorization of the proposed project and does not exempt the project from securing necessary permits and approvals from the DNR and/or other permitting authorities.

Project Information

Landowner name	Mercury Site
Project address	21211 Durand Avenue
Project description	Site Investigation Work Plan

Project Questions

Does the project involve a public property?	No
Is there any federal involvement with the project?	No
Is the project a utility, agricultural, forestry or bulk sampling (associated with mining) project?	No
Is the project property in Managed Forest Law or Managed Forest Tax Law?	No
Project involves tree removal?	No
Is project near (within 300 ft) a waterbody or a shoreline?	No
Is project within a waterbody or along the shoreline?	No

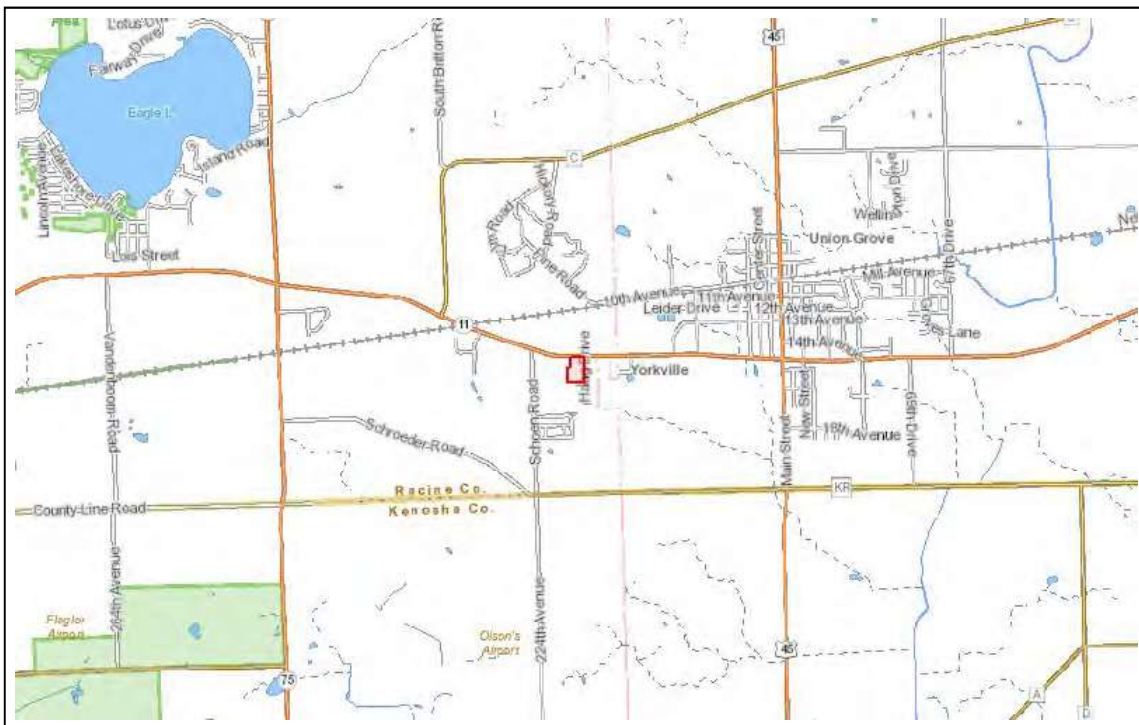
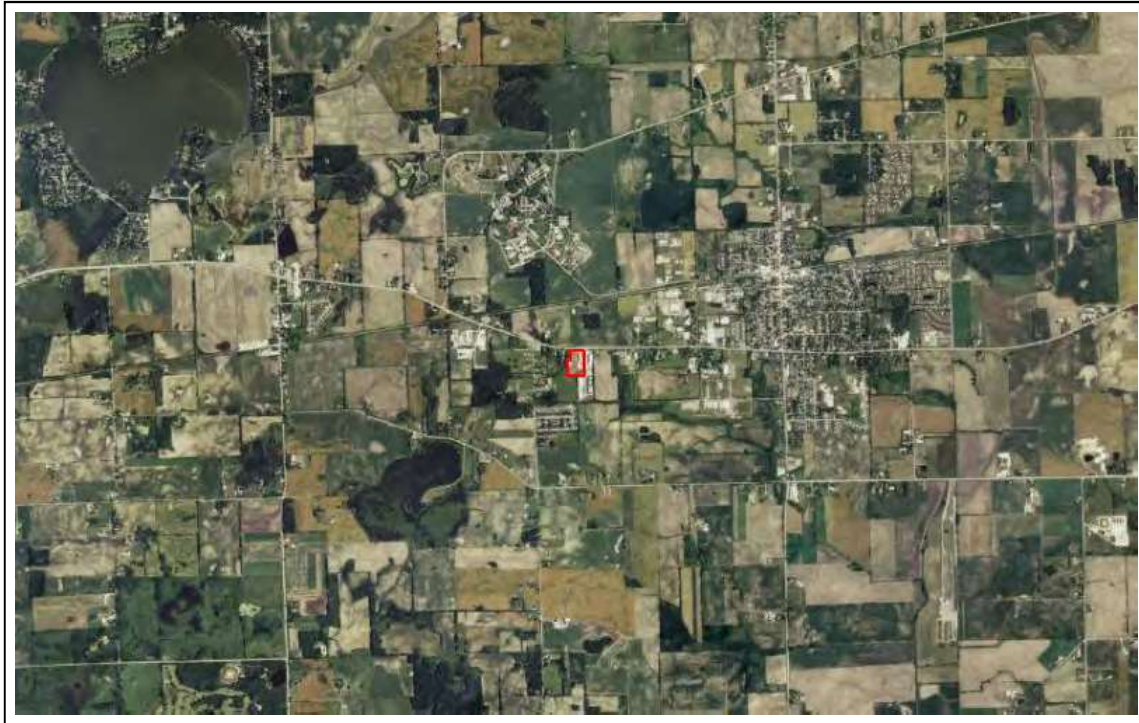
Does the project area (including access routes, staging areas, laydown yards, select sites, source/fill sites, etc.) occur **entirely within** one or more of the following habitats?

Urban/residential	Yes
Manicured lawn	No

Public Portal ID: **wtrIkOHeY**

8/13/2021, 3:40:22 PM

Artificial/paved surface	Yes
Agricultural land	No
Areas covered in crushed stone or gravel	Yes



The information shown on these maps has been obtained from various sources, and is of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. Users of these maps should confirm the ownership of land through other means in order to avoid trespassing. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: <http://dnr.wi.gov/legal/>.

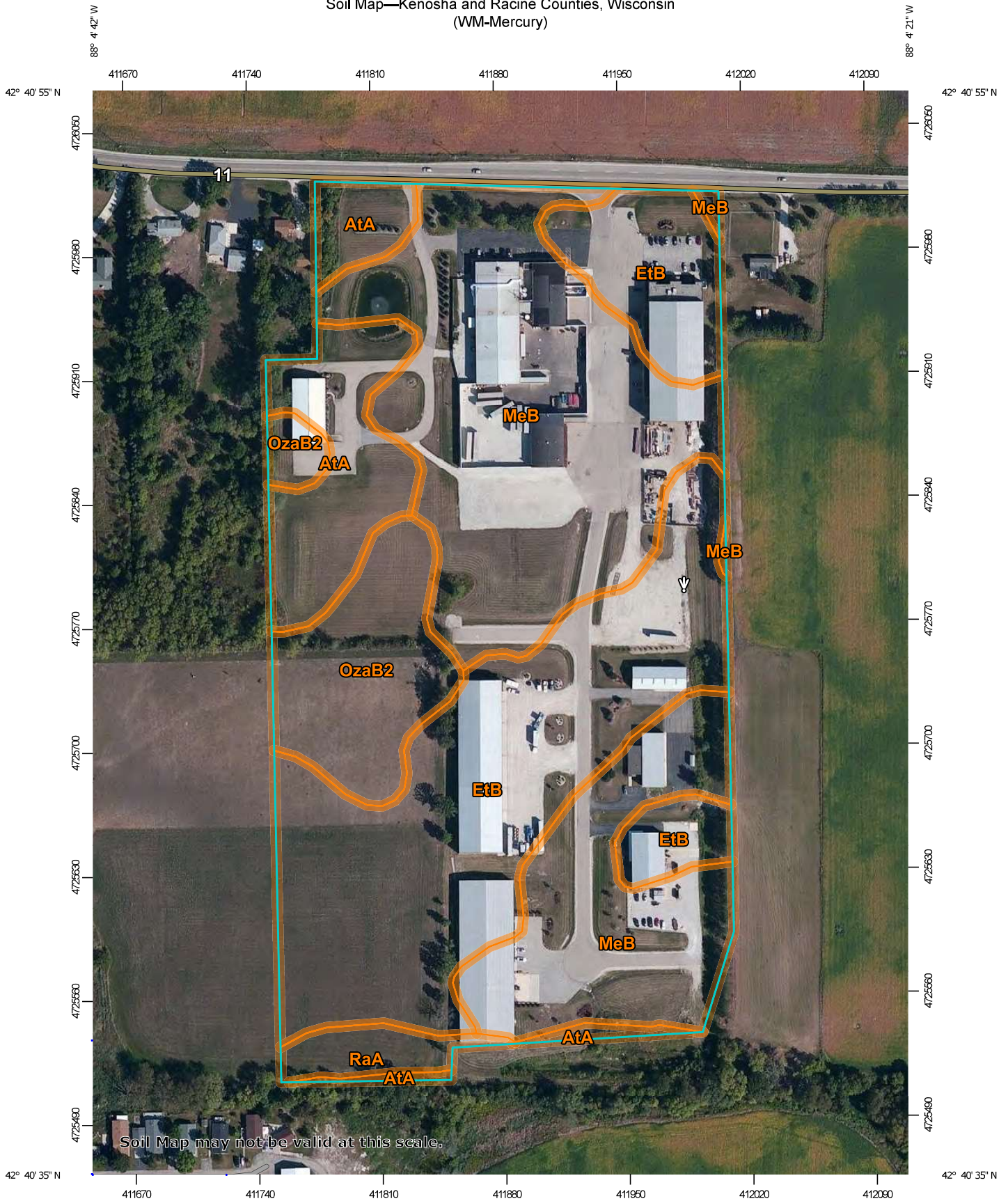
<https://dnrx.wisconsin.gov/nhiportal/public>

101 S. Webster Street . PO Box 7921 . Madison, Wisconsin 53707-7921

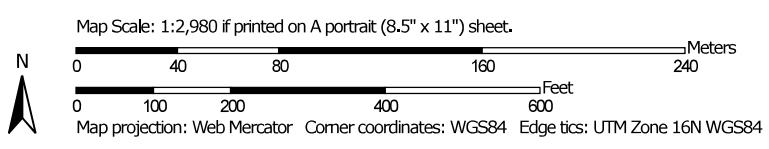
ATTACHMENT 7

NRCS Soils Map






































Soil Map—Kenosha and Racine Counties, Wisconsin
(WM-Mercury)



Soil Map may not be valid at this scale.



MAP LEGEND

-  Area of Interest (AOI)
-  Area of Interest (AOI)
- Soils**
-  Soil Map Unit Polygons
-  Soil Map Unit Lines
-  Soil Map Unit Points
- Special Point Features**
-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot
-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features
- Water Features**
-  Streams and Canals
- Transportation**
-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads
- Background**
-  Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kenosha and Racine Counties, Wisconsin
Survey Area Data: Version 17, Jun 8, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 29, 2011—Mar 28, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AtA	Ashkum silty clay loam, 0 to 2 percent slopes	3.2	10.4%
EtB	Elliott silty clay loam, 2 to 6 percent slopes	10.9	35.7%
MeB	Markham silt loam, 2 to 6 percent slopes	12.8	42.0%
OzaB2	Ozaukee silt loam, 2 to 6 percent slopes, eroded	3.0	9.7%
RaA	Radford silt loam, 0 to 3 percent slopes	0.7	2.2%
Totals for Area of Interest		30.6	100.0%

ATTACHMENT 8

Water Supply Well Logs

WELL LOG FROM SITE RECORDS

1. COUNTY Rock CHECK ONE Town Village City NAME Dover

2. LOCATION (Number and Street or 1/4 section, section, township and range. Also give subdivision name, lot and block numbers where available) Route 1 Box 16 A NE 36 3N-20E RECEIVED

3. OWNER AT TIME OF DRILLING Rhonet Zinke FEB 14 1966

4. OWNER'S COMPLETE MAIL ADDRESS Route 1 Box 16 A Union Grove Wis

5. Distance in feet from well to nearest: BUILDING SANITARY SEWER FLOOR DRAIN FOUNDATION DRAIN WASTE WATER DRAIN
 (Record answer in appropriate block) C. I. TILE C. I. TILE SEWER CONNECTED INDEPENDENT C. I. TILE

15	X	15	X	X	X	X	X
----	---	----	---	---	---	---	---

CLEAR WATER DRAIN SEPTIC TANK PRIVY SEEPAGE PIT ABSORPTION FIELD BARN SILO ABANDONED WELL SINK HOLE
 C. I. TILE

X	20	70	X	X	70	X	X	X	X
---	----	----	---	---	----	---	---	---	---

OTHER POLLUTION SOURCES (Give description such as dump, quarry, drainage well, stream, pond, lake, etc.)

6. Well is intended to supply water for: Household Use

7. DRILLHOLE

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
10	Surface	30			
6	30	292			

10. FORMATIONS

Kind	From (ft.)	To (ft.)
Clay	Surface	41
Fine Sand	41	70
Sand & Gravel	70	108
Quick Sand	110	119
Gravel	119	126
Broken lime	126	130
Limestone	130	292

8. CASING, LINER, CURBING, AND SCREEN

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6	Black Steel nw T+C 1457	Surface	130

9. GROUT OR OTHER SEALING MATERIAL

Kind	From (ft.)	To (ft.)
Clay Slurry	Surface	30

Well construction completed on 3/25 1964

11. MISCELLANEOUS DATA

Yield test: 8 Hrs. at 10 GPM Well is terminated 10 inches above below final grade

Depth from surface to normal water level 9.8 ft. Well disinfected upon completion Yes No

Depth to water level when pumping 120 ft. Well sealed watertight upon completion Yes No

Water sample sent to no record kept of date laboratory on: 19

Your opinion concerning other pollution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, type of casing joints, method of finishing the well, amount of cement used in grouting, blasting, sub-surface pumphoms, access pits, etc., should be given on reverse side.

SIGNATURE Accurate Drilling & Pump Co COMPLETE MAIL ADDRESS 4107 N Bartlett Mil Wis 53211
Shirley Adams Registered Well Driller

Please do not write in space below

COLIFORM TEST RESULT	GAS - 24 HRS.	GAS - 48 HRS.	CONFIRMED	REMARKS

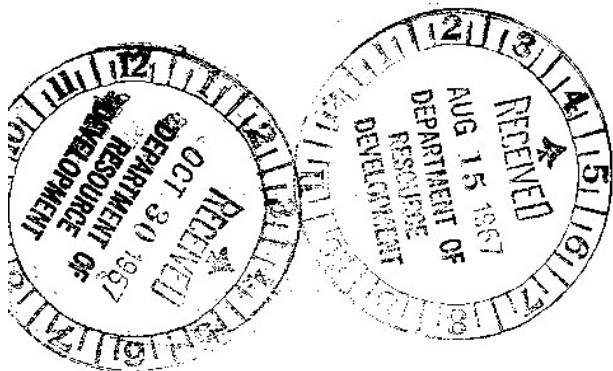
3627 SEE OTHER SIDE

This well terminated at 185 feet and tested with an ample supply of water. Certain times of day after owners moved in well ran short and then came back. We went back and deepened same and got a new supply.

Do not film *Zemke*

North East one-quarter ($\frac{1}{4}$) of Section Thirty-six (36), in Township Three (3) North, Range Twenty (20) East, bounded as follows: Commence at the Northwest Corner of the South 25 acres of the West $\frac{1}{2}$ of the Northeast $\frac{1}{4}$ of Section 36-3-20 East; run thence East 210 feet; thence South 110 feet; thence West 210 feet to the North and South center line of said Section 26; thence North along said center line, 110 feet to the place of beginning. Said land being in the Town of Dover, County of Racine, State of Wisconsin.

Do not film



NEARBY WELL LOGS

1. COUNTY **Racine** CHECK ONE Town Village City NAME **Dover**

2. LOCATION (Number and Street or 1/4 section, section, township and range. Also give subdivision name, lot and block numbers when available.)
N.E. 1/4 Sec. 36 Twn. 3N Rge. 21E [R20E?]

3. OWNER AT TIME OF DRILLING
Wagner & Menheer

4. OWNER'S COMPLETE MAIL ADDRESS
Rt. 1, Kansasville Wisc.

5. Distance in feet from well to nearest: (Record answer in appropriate block)

BUILDING C. I.	SANITARY SEWER TILE	FLOOR DRAIN C. I.	TILE	FOUNDATION DRAIN SEWER CONNECTED	INDEPENDENT	WASTE WATER DRAIN C. I.	TILE
17					17		

CLEAR WATER DRAIN C. I.	TILE	SEPTIC TANK	PRIVY	SEEPAGE PIT	ABSORPTION FIELD	BARN	SILO	ABANDONED WELL	SINK HOLE
		60							

OTHER POLLUTION SOURCES (Give description such as dump, quarry, drainage well, stream, pond, lake, etc.)

6. Well is intended to supply water for:
Home

7. DRILLHOLE						10. FORMATIONS			
Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)	Kind		From (ft.)	To (ft.)
10	Surface	25				Clay		Surface	140
6 1/4	⊙	144				Gravel		140 _{int}	144

8. CASING, LINER, CURBING, AND SCREEN			
Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
70D	NEW Standard Steel BLK	Surface	144
6 1/4	26 lbs. per ft.		
	THREADED + COUP.		

9. GROUT OR OTHER SEALING MATERIAL		
Kind	From (ft.)	To (ft.)
Clay	Surface	25

11. MISCELLANEOUS DATA			
Yield test:	24	Hrs. at	5 GPM
Depth from surface to normal water level	85	ft.	
Depth to water level when pumping	90	ft.	
Well construction completed on	7/ 10		19 67
Well is terminated	8 inches	<input checked="" type="checkbox"/> above <input type="checkbox"/> below	final grade
Well disinfected upon completion		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Well sealed watertight upon completion		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Water sample sent to	Madison	laboratory on:	7/ 19 67

Your opinion concerning other pollution hazards, information concerning difficulties encountered, and data relating to nearby wells, screens, seals, type of casing joints, method of finishing the well, amount of cement used in grouting, blasting, sub surface pumphrooms, access pits, etc., should be given on reverse side.

SIGNATURE <i>[Signature]</i> Registered Well Driller	COMPLETE MAIL ADDRESS Rt. 1, Box 176 Waterford, Wisc.
--	---

Please do not write in space below

COLIFORM TEST RESULT	GAS - 24 HRS.	GAS - 48 HRS.	CONFIRMED	REMARKS
3624				

Well Construction Report WISCONSIN UNIQUE WELL NUMBER				VA644		Drinking Water and Groundwater - DG/5 Department of Natural Resources, Box 7921 Madison WI 53707				Form 3300-077A		
Property Owner ASCHAUER, HELEN					Phone # (262)639-7826			1. Well Location			Fire # (if avail.)	
Mailing Address 4420 ELLEN DR					Town of DOVER			Street Address or Road Name and Number				
City RACINE					State WI		Zip Code 53405				21321 DURAND AVE	
County Racine		Co. Permit #		Notification # 39525324		Completed 02-15-2011		Subdivision Name		Lot #	Block #	
Well Constructor (Business Name) ASCHAUER E G & SONS INC				Lic. # 66	Facility ID # (Public Wells)			Latitude / Longitude in Decimal Degree (DD)		Method Code		
Address PO BOX 206 KANSASVILLE WI 53139-0206				Well Plan Approval #			NW	NE	Section 36	Township 3 N	Range 20 E	
				Approval Date (mm-dd-yyyy)			or Govt Lot #	36	3	N	20	E
Hicap Permanent Well #		Common Well #		Specific Capacity 1.2		2. Well Type New Well					constructed in	
Reason for replaced or reconstructed well ?					Construction Type Drilled							
3. Well serves 1 # of Private, potable				Hicap Well ? No		Hicap Property ? No		Heat Exchange ___ # of drillholes				Hicap Potable ?
4. Potential Contamination Sources - ON REVERSE SIDE												
5. Drillhole Dimensions and Construction Method						8. Geology Type, Caving/Noncaving, Color, Hardness, etc...		From (ft.)	To (ft.)			
Dia. (in.)	From (ft.)	To (ft.)	Upper Enlarged Drillhole		Lower Open Bedrock	R	-	C	-	RED CLAY	Surface	12
6	Surface	104	Rotary - Mud Circulation			U	-	C	-	BLUE CLAY	12	100
			Rotary - Air							GRAVEL	100	104
			Rotary - Air & Foam									
			Drill-Through Casing Hammer									
			Reverse Rotary									
			Cable-tool Bit ___ in. dia...									
			Dual Rotary									
			Temp. Outer Casing ___ in. dia									
			Removed? ___ depth ft. (If NO explain on back side)									
6. Casing, Liner, Screen						9. Static Water Level			11. Well Is			
Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly			From (ft.)	To (ft.)	65 ft. below ground surface			12 in. above grade			
6	STEEL, 18.97 LB, A53 WHEATLAND, WELDED			Surface	104	10. Pump Test			Developed ? Yes			
Dia. (in.)	Screen type, material & slot size			From (ft.)	To (ft.)	Pumping level 75 ft. below surface			Disinfected ? Yes			
						Pumping at 12 GP M for 4 Hrs.			Capped ? Yes			
						Pumping Method ?						
7. Grout or Other Sealing Material						12. Notified Owner of need to fill & seal ?						
Method MOUNDED						Filled & Sealed Well(s) as needed? No						
Kind of Sealing Material		From (ft.)	To (ft.)	# Sacks Cement		NONE FOUND						
GRANULAR BENTONITE		Surface				13. Constructor / Supervisory Driller			Lic #	Date Signed		
						AMA				02-23-2011		
						Drill Rig Operator			Lic or Reg #	Date Signed		

4a. Potential Contamination SourcesIs the well located in floodplain ? No

Type	Qualifier	Distance	Type	Qualifier	Distance
POWTS dispersal component (soil absorption unit or mound)		60	Wastewater Sump		40
Building Overhang		13	Sewer - Building Sanitary		42
Clearwater Sump		27	Septic or Holding, or POWTS Tank		47

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Created On: 03-29-2011

Created by: WELL CONST LOAD

Updated On: 03-29-2011

Updated by: WELL PROCESS

RECEIVED

WELL CONSTRUCTOR'S REPORT TO WISCONSIN STATE BOARD OF HEALTH
See Instructions on Reverse Side

AUG 29 1960

1. County Racine (Town Village City Dover Check one and give name
2. Location SW 44 Sec. 36 T 3N R 2E Name of street and number of premise or Section, Town and Range numbers
3. Owner or Agent Joseph Kurhajer Name of individual, partnership or firm
4. Mail Address 2321 - 90th Street - Sturdevant Wis Complete address required
5. From well to nearest: Building _____ ft; sewer _____ ft; drain _____ ft; septic tank _____ ft; dry well or filter bed _____ ft; abandoned well _____ ft.
6. Well is intended to supply water for: Mink Ranch

7. DRILLHOLE:

Dia. (in.)	From (ft.)	To (ft.)	Dia. (in.)	From (ft.)	To (ft.)
8"	0	164'6"			
6"	164'6"	303			

8. CASING AND LINER PIPE OR CURBING:

Dia. (in.)	Kind and Weight	From (ft.)	To (ft.)
6	Std. Blk. Steel	0	164'6"

9. GROUT:

Kind	From (ft.)	To (ft.)
Bentonite	0	164'6"

11. MISCELLANEOUS DATA:

Yield test: 3 Hrs. at 10 GPM.

Depth from surface to water-level: 100 ft.

Water-level when pumping: 150 ft.

Water sample was sent to the state laboratory at: _____ on _____ 19____

City _____

10. FORMATIONS:

Kind	From (ft.)	To (ft.)
Top soil	0	3
Blue clay	3	101
Hard pan	101	161
Limerock	161	259
Shale + Limestone	259	298
Brown Limestone	298	303

Construction of the well was completed on: June 20 1960

The well is terminated 18 inches above, below the permanent ground surface.

Was the well disinfected upon completion? Yes No

Was the well sealed watertight upon completion? Yes No

Signature Richard Berkholz
Registered Well Driller

ACKER-BERKHOLTZ CO., INC.
16715 W. GREENFIELD AVE.
NEW BEREN, WISCONSIN

Please do not write in space below

Rec'd _____ No _____

Ans'd _____

Interpretation _____

AUG 29 1960

SANITARY ENGINEERING

10 ml _____ 10 ml _____ 10 ml _____ 10 ml _____ 10 ml _____

Gas—24 hrs. _____

48 hrs. _____

Confirm _____

B. Coli _____

Examiner _____

PLA

Well Construction Report WISCONSIN UNIQUE WELL NUMBER	ZJ343	Drinking Water and Groundwater - DG/5 Department of Natural Resources, Box 7921 Madison WI 53707	Form 3300-077A
--	--------------	---	----------------

Property Owner KURK		Phone #	
Mailing Address 4514 JACK PINE LN			
City UNION GROVE		State WI	Zip Code 53182
County Racine	Co. Permit #	Notification # 7909361403	Completed 03-05-2020

1. Well Location		Fire # (if avail.)
Village of YORKVILLE		
Street Address or Road Name and Number 4514 JACK PINE LN		
Subdivision Name	Lot #	Block #

Well Constructor (Business Name) GEHRING LANCE WELL DRILLING INC		Lic. # 6994	Facility ID # (Public Wells)		Latitude / Longitude in Decimal Degree (DD) 42.6812 °N -88.0696 °W		Method Code GPS008	
Address 8820 KAROW RD TWIN LAKES WI 53181		Well Plan Approval #		NW	NW	Section 31	Township 3 N	Range 21 E
Hicap Permanent Well #		Common Well #	Specific Capacity 0		2. Well Type New Well			
Hicap Property ? No		Hicap Potable ? No		of previous unique well #				constructed in
Heat Exchange ___ # of drillholes		Reason for replaced or reconstructed well ?		Construction Type Drilled				

3. Well serves 1 # of BUILDING		Hicap Well ? No
Non-community		Hicap Property ? No
Heat Exchange ___ # of drillholes		Hicap Potable ? No

4. Potential Contamination Sources - ON REVERSE SIDE

5. Drillhole Dimensions and Construction Method				Geology Codes		8. Geology Type, Caving/Noncaving, Color, Hardness, etc...		From (ft.)	To (ft.)
Dia. (in.)	From (ft.)	To (ft.)	Upper Enlarged Drillhole						
10	Surface	161	Lower Open Bedrock		G	C	G-GRAY C-CLAY	Surface	120
6	161	276	Yes Rotary - Mud Circulation	No		Z	Z-CLAY & GRAVEL	120	161
			No Rotary - Air	No		L	L-LIMESTONE/DOLOMITE	161	276
			No Rotary - Air & Foam	No					
			No Drill-Through Casing Hammer						
			No Reverse Rotary						
			No Cable-tool Bit ___ in. dia...	No					
			No Dual Rotary	No					
			Yes Temp. Outer Casing 14in. dia						
			Yes Removed? 2depth ft. (If NO explain on back side)						

6. Casing, Liner, Screen				9. Static Water Level		11. Well Is	
Dia. (in.)	Material, Weight, Specification Manufacturer & Method of Assembly	From (ft.)	To (ft.)	70 ft. below ground surface		14 in. above grade	
6	WHEATLAND STEEL T&C ASTM A53B	Surface	161	10. Pump Test		Developed ? Yes	
Dia. (in.)	Screen type, material & slot size	From (ft.)	To (ft.)	Pumping level 200 ft. below surface		Disinfected ? Yes	
				Pumping at 5 GP M for 2 Hrs.		Capped ? Yes	
				Pumping Method ? Airlift			

7. Grout or Other Sealing Material				12. Notified Owner of need to fill & seal ?			
Method				No			
Kind of Sealing Material	From (ft.)	To (ft.)	# Sacks Cement	Filled & Sealed Well(s) as needed?			
DRILL MUD	Surface	161		No			

13. Constructor / Supervisory Driller		Lic #	Date Signed
LG		6994	03-05-2020
Drill Rig Operator		Lic or Reg #	Date Signed

4a. Potential Contamination Sources

Is the well located in floodplain ? No

Type	Qualifier	Distance
Septic or Holding, or POWTS Tank		28

Comment:

Water Quality Text:

Water Quantity Text:

Difficulty Text:

Created On: 08-17-2020

Created by: OSMONDM

Updated On: 11-25-2020

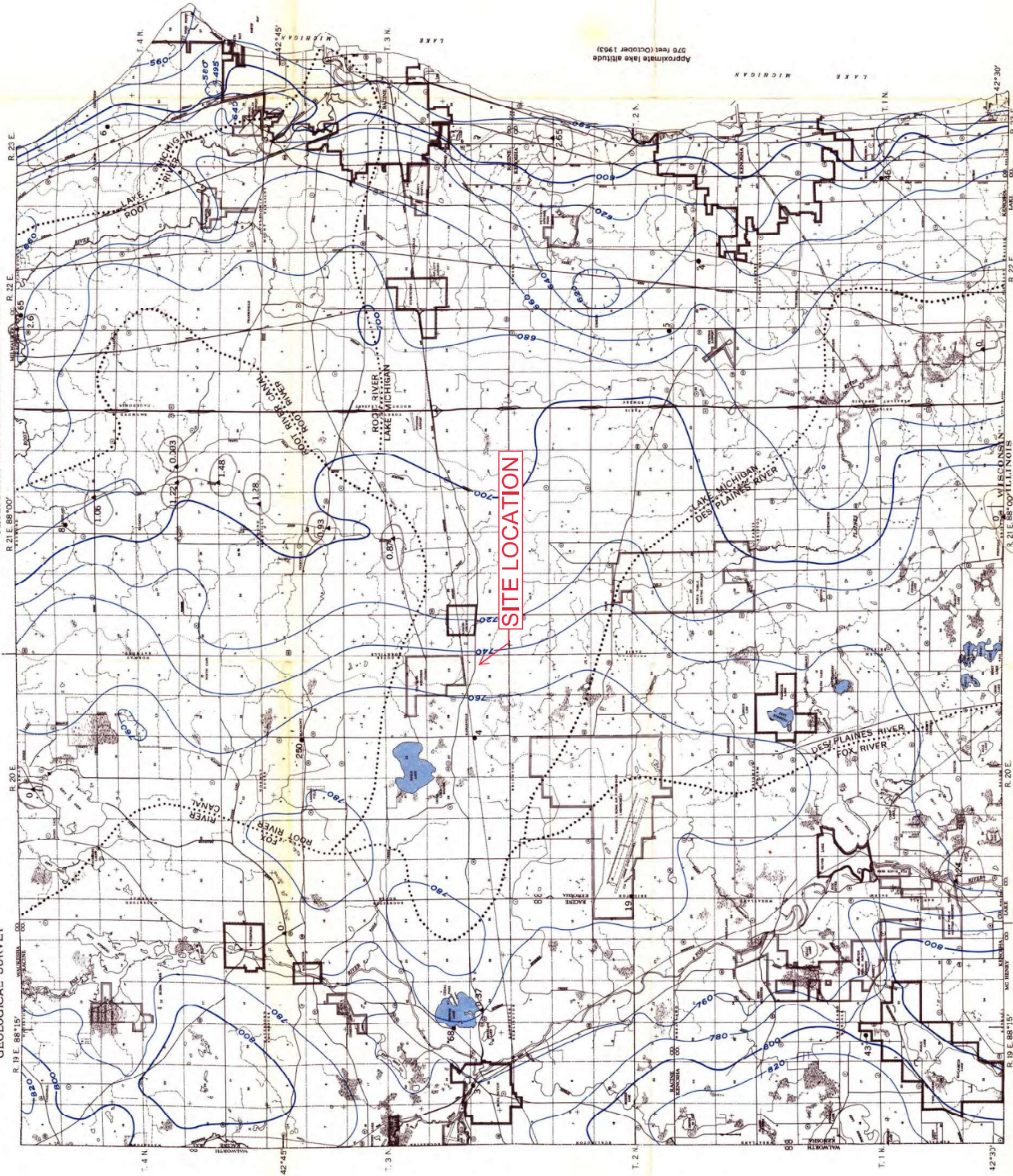
Updated by: WELL PROCESS

ATTACHMENT 9

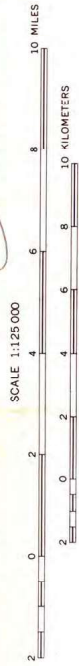
USGS Water Table Contour Map

EXPLANATION

-  Pisometric contours
Show altitude of the piezometric surface. Approximately located. Contour interval 20 feet. Datum as seen on field.
-  46
Observation well
Showing serial number. See figure for hydrographs of observation wells.
-  ROOT RIVER
LAKE MICHIGAN
Divide between groundwater basins
Approximately located.
-  1.22
Streamflow-measuring site
Number is discharge in cubic feet per second. November 12-15, 1963.
-  Pieched or semipieched lake
Above piezometric surface.



Hydrology by R. D. Hutchinson, 1963



Base from Southeastern Wisconsin
Regional Planning Commission
County, Racine County,
1:62,500

APPROXIMATE MEAN
DECLINATION, 1950

MAP SHOWING THE PIEZOMETRIC SURFACE OF THE COMBINED NIAGARA AQUIFER AND SAND AND GRAVEL AQUIFER, AND SURFACE-WATER MEASUREMENTS, NOVEMBER 12-15, 1963, RACINE AND KENOSHA COUNTIES, SOUTHEASTERN WISCONSIN

ATTACHMENT 10

Post Excavation Sampling Results -December 2020

The suspected source of the elevated concentrations is spillage of approximately 1 gallon of carbon media that occurred during the last GAC changeout event in September 26, 2018. WM was not made aware of the release prior to the 2020 sampling event. The changeout was reportedly performed by new employees, and although plastic tarping was used, carbon media was spilled on the ground surface near the carbon vessels on the west side of the facility while being transferred to totes. Carbon media was also reportedly spilled in the loading area on the south side of the facility when the totes were loaded onto trucks. Photos of the spilled carbon media taken prior to the over-excavation described further below are included as **Attachment 3**.

To WM's knowledge, no carbon media was spilled on the northern side of the facility near sample C9 (10.9 mg/kg). C9 was collected following the collection of samples along the western side of the facility, which included samples E6 and E6a with elevated concentrations of mercury. As such, the exceedance of the site-specific standard at C9 is likely due to cross-contamination from the western side of the facility.

Reporting and Response Actions

WM reported the release to the WDNR on December 3, 2020 via Form 4400-225 Notification for Hazardous Substance Discharge. Additional information was requested by the WDNR and provided by WM via an email on December 9, 2020. The WDNR opened a case for the incident and issued a Responsible Party (RP) Letter on December 17, 2020 outlining legal responsibilities and requirements to address the release (**Attachment 4**).

To address the detections, a nonemergency immediate action was taken pursuant to NR 708,05(3), Wis. Admin. Code. The response action, consisting of the over-excavation of contaminated soil, was conducted from December 10, 2020 through December 16, 2020. WM personnel over-excavated soils to a depth of approximately 1-foot BGS based on analytical results and visual observations. Orange and white fiberglass marking stakes were placed throughout areas of the excavations to show the original depth of soil using red paint. Photographs of the excavated areas are included as **Attachment 3**. Post-excavation confirmation samples were collected from the excavations by EMT on December 14, 2020 and sent to the certified lab for mercury analysis. All post-excavation confirmation sample results were well below the site-specific standard of 10 mg/kg. A copy of the lab report is included as an **Attachment 2**.

Soil Sample ID	Mercury Results Post-Excavation Sample Date: 12/14/2020 (mg/kg)
C9	0.310
E4	0.639
E6	0.591
E6a	2.44
F6	0.105
F6a	0.175
F7	0.830

The excavation on the southern side of the facility in the truck loading area was backfilled with clean gravel on December 16, 2020. The excavations on the northern (C9) and western (E6 through F7) sides of the facility are currently covered with snow and will be backfilled with clean fill material once the snow melts.