Appendix P

Sampling Plan

Environmental Sampling Plan

Dane County Landfill Site No. 3
4402 Brandt Road
Madison, Wisconsin

Prepared for:

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SCS ENGINEERS

25222268.00 | February 2024

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1.0 OVERVIEW

This Environmental Sampling Plan (Plan) for Dane County Landfill Site No. 3 (DCLF No. 3) has been prepared to comply with Wisconsin Administrative Code, NR 507.16.

This version of the Environmental Sampling Plan is preliminary, pending completion of the landfill Plan of Operation and approval by the Wisconsin Department of Natural Resources (WDNR). The complete proposed environmental monitoring program will be submitted as part of the Plan of Operation in accordance with NR 514.06(7)(a). The Environmental Sampling Plan will be updated to reflect the final monitoring program in the WDNR Plan of Operation approval after the approval is issued.

- Prior to initiation of routine or special groundwater sampling events at DCLF No. 3, the Plan should be reviewed by all sampling team members.

- Site conditions or site-specific regulatory requirements may necessitate a deviation from the Plan as described herein.

- Any such deviation from this Plan must be documented by the sampling team leader in coordination with the designated Dane County representative. Possible reasons for variation from this Plan include, but are not limited to:

  – Unusual site hydrogeologic conditions, such as low permeability formations resulting in long recharge times;
  – Damaged monitoring points awaiting repair; or
  – Circumstances preventing sampling, such as a tar-like substance in a leachate headwell.

2.0 NR 507.16 (1)(a) AND (b) – SITE MAP AND SAMPLING SCHEDULE

Attachment A shows the site and the locations of inactive and active sampling points and devices adherent to Wisconsin Department of Natural Resources Groundwater Environmental Monitoring System (GEMS). This map will be updated as part of the Plan of Operation to show proposed monitoring locations.

Attachment B includes the sampling schedule, outlining the sampling frequency, and the list of analytical parameters for each monitoring point.

3.0 NR 507.16 (c) – FIELD MEASUREMENTS

3.1 STATIC WATER LEVEL MEASUREMENTS

- Collect water levels on the same day prior to purging to produce a representative static groundwater elevation contour map and minimize interference due to drawdown or barometric pressure effects.

- Remove the compression cap on the PVC well casing and allow the potential built-up pressure in the PVC casing to equalize with atmospheric pressure.

- To alleviate the potential for errors, previous water level data can be used for comparison purposes during field activities.

- Measure water levels using a Solinst Water Level Meter Model 101 or equivalent meter.

- Lower the decontaminated probe into the well until the instrument indicates that the water column has been encountered.

- Slowly raise the probe and lower in and out of the water column until the sampler is satisfied that the instrument is providing a reliable water level reading.

- Record the depth to water and elevation of the water level (mean sea level [MSL]) to the nearest hundredth of a foot (i.e., 0.01 foot).

3.2 MONITORING WELL SAMPLING

Sample monitoring wells in the order of least likely to be impacted to most likely to be impacted.

- Sample monitoring wells upgradient of the landfill first, followed by sidegradient, and then downgradient monitoring wells.

  – Prior to purging a well, measure water levels to best represent static ground water (see Section 3.1).

  – Then purge stagnant water from the monitoring well. This will allow time for an adequate sampling volume to recharge in the well if it purges dry and to gather a sample that represents the groundwater within the soil formation at the well location as opposed to stagnant water in the well casing and filter pack.

3.3 CONDUCTIVITY, PH, AND TEMPERATURE

The proper measurement and documentation of field water quality parameters are a critical part of the monitoring program.

- Before going to the field, clean and check all equipment for any malfunctions.

- Calibrate meters each morning before using them in the field following manufacturer's calibration procedures.

- Conduct equipment calibration daily at a minimum.

- Freshly prepare or bottle calibration solutions from non-expired stock.

- In the absence of manufacturer guidance, calibrate field equipment to within +/- 5 percent of the standard (or 0.1 standard unit for pH meters).

- Verify calibration of field-specific conductance against a chilled standard to verify temperature compensation.

- Repair or replace equipment that fails calibration prior to sampling and recalibrate.

- Conduct calibration checks periodically (e.g., mid-day and at end-of-day) to document any instrument drift. If there is significant instrument drift (e.g., >10 percent or 0.2 standard unit for pH), recalibrate the meters.

- Measure conductivity, pH, and temperature using a YSI Professional Plus Quick Start or equivalent meter.

- Record conductivity, pH, and temperature field measurements at the same time the groundwater sample is collected.

3.4 TURBIDITY, ODOR, AND COLOR

Document the physical descriptions of turbidity, odor and color as outlined below.

Odor: Waft samples as opposed to sniffing.
Classify odor as rotten eggs, earthy, strong, moderate, or slight.
Do not speculate as to the cause of an odor.

Color: Hold the sample up to the light and describe the true color in as much detail as possible (color charts are acceptable descriptive methods).
"True" color is the color after turbidity has been removed if samples are filtered.
True color may be caused by metallic ions, humus, peat, or industrial chemicals.
If samples are not filtered, then color may be a function of turbidity.

Turbidity: Fill one 5-gallon bucket with purge water from the monitoring well immediately after the stagnant water is removed (Section 3.2). Classify turbidity observed in the 5-gallon bucket as described below and record the reading on the field sheet:

None: Sample is clear (you can clearly see the bottom of the bucket).

Slight: Sediment slightly clouds or colors the sample (you can slightly see the bottom of the bucket); sediment does not accumulate in the bottom of the bucket.

Moderate: Definite cloudiness, sediment accumulates at the bottom of the bucket.

High: Muddy/dark brown appearance (cannot see the bottom of the bucket).

Turbidity results reported to the Wisconsin Department of Natural Resources should be reported as either "yes" or "no." If the well has slight, moderate, or high turbidity, the result shall be reported as "yes." If the well has no turbidity (you can clearly see the bottom of the bucket) the result shall be reported as "no."

4.0 NR 507.16 (d) – GROUNDWATER PURGING PROCEDURES

4.1 TRADITIONAL PURGING METHODS

Use the following purging methods:

- When minimal drawdown techniques are not utilized, pump or bail monitoring wells prior to sample withdrawal to prevent collection of non-representative stagnant water in a sample and to increase the likelihood that the water collected is representative of the groundwater within the formation around the well. As a general rule:

  – For moderate-to high-yield formations (those with fast recharge), pump or bail a minimum of four times the volume of water standing in the well casing, if possible.

  – For low-yield formations (those with slow recharge), pump or bail at least one borehole volume (includes water within the PVC casing plus the filter pack volume, assuming 30 percent effective porosity, if applicable), if possible.

- Use dedicated bailers (installed in the individual monitoring wells) and portable pumps to purge the monitoring wells. Dedicated bailers are used for sample collection at the DCLF No. 3.

- Collect equipment blanks in accordance with Section 6.3 of this Plan.

- Fasten the bailer cord (consists of nylon roping) securely to the bailer. Make sure the cord is clean and in good condition.

- Take care to not excessively disturb the column of water in the well casing.

- Gently lower the bailer into the well with each cycle.

- Lower the bailer into the water only to the extent necessary to fill or nearly fill the chamber. Avoid submerging the top of the bailer.

- For discarding purged water:

  – If results from previous sampling events do not suggest groundwater is impacted, discard purged water to the ground far enough away from the well footing to prevent the possibility of affecting shallow soils or groundwater near the well.

  – If results from previous sampling events suggests groundwater is impacted at a location, do not dispose of purge water to the ground. It may be necessary to collect all purge water in drums (preferably lined) to dispose of the water within the site leachate collection system or other approved manner as defined by the Dane County representative.

4.2 VERY LOW YIELD SAMPLING METHODS

Some wells at the DCLF No. 3 may bail dry due to the low conductivity glacial till with varying amounts of silty sand, silt, and clay.

- In cases where a well bails dry prior to removal of 4 well volumes (water column within the PVC well casing) of purge water, bail or pump the volume of water standing in the well and allow the well to recharge for up to 24 hours or as stipulated by local or state regulation.

- If there is not sufficient water for sampling any parameter, then the well is considered dry for the purpose of sampling.

- If water is available to partially complete sampling requirements, obtain samples in the order specified in the approved monitoring plan or as specified by the Dane County representative.

  – Collect volatile organic analytes (VOAs) first, followed by the remaining parameters. Attachment C outlines minimum testing volumes for each analyte, or contact the laboratory.

- If a sample cannot be obtained from a given well which normally provides adequate water for a sample, notify the Dane County representative immediately and note on field forms.

4.3 DECONTAMINATION PROCEDURES FOR NON-DEDICATED, DOWN-HOLE PURGING EQUIPMENT

Follow the decontamination procedures described below.

- Thoroughly decontaminate all non-dedicated, sample-contacting, and down-hole equipment prior to its use in sample collection activities. This includes non-dedicated pumps, non-dedicated bailers, groundwater level measurement devices, field parameter measurement devices, and non-dedicated filtering apparatuses.

- Use a dedicated water level probe for groundwater monitoring wells.

  – Under no circumstances shall the groundwater level probe be used to measure other liquid levels (such as leachate or grossly contaminated wells).

- Decontamination procedures:

  – For down-hole equipment, at a minimum, wash with a non-phosphate detergent solution, followed by two or three rinses (i.e., 2 to 3) with control water (i.e., water of a known chemistry), and one rinse with deionized (DI) water.

  – For non-dedicated pumps, at a minimum, circulate with clean water for three pump and tubing volumes and all associated discharge tubing. A series of three pre-cleaned liquid storage containers will aid in this effort: 1) non-phosphate detergent solution, 2) control water, and 3) control water.

  – For other non-dedicated equipment (e.g., field meters and water level indicators), triple-rinse with DI water before and after each use.

- At a minimum, collect one Equipment Blank from non-dedicated purging/sampling equipment following decontamination for each day of sample collection (Section 6.3). Analyze Equipment Blanks for all sample matrices, analytical tests, and equipment configurations.

4.4 TIME BETWEEN PURGING/SAMPLING

Follow the purging time procedures described below:

- Collect groundwater samples in the shortest possible time following the well purge to gather a sample that is representative of the formation and not stagnant water in the well casing or filter pack.
  - Exceptions can be made to allow sediment to settle out in turbid wells. However, such wells may need to be redeveloped prior to the next sampling event. Redevelopment refers to spending some additional time with the purging process using well development techniques such as "surge and purge" in an effort to reduce the well's turbidity. The method of sample collection is usually the same as purging, unless otherwise specified by site conditions or regulation.

5.0 NR 507.16 (e) – GROUNDWATER SAMPLE COLLECTION

5.1 OBTAINING GROUNDWATER SAMPLES

Follow the sample collection procedures described below:

- After purging has been completed at those wells with a dedicated, low-flow pump, reduce the pumping rate as low as possible to deliver a slow and steady discharge. Do not use a valve to reduce the flow rate.
- If the well has been purged with a bailer, collect the sample from a bailer using a bottom discharge device.
- Fill sample containers with a preservative first and fill non-preserved containers last.

5.2 SAMPLE VOLUME

Attachment C summarizes the volume of sample required for the various analyses.

5.3 SAMPLE FILTRATION

Follow the sample filtration procedures described below:

- Determine if sample filtration is required.
  - Typically, only samples for dissolved metals analysis require filtration.
  - Parameters requiring filtration are specified in the approved monitoring plan and regulatory requirements.
  - Private water supply well, surface water, and leachate samples are not filtered, unless specifically required by approved monitoring plan.
  - Where applicable, the laboratory will note which samples require filtering on the individual sample bottle labels and bottle schematics.

  - Never filter preserved samples.

- Filter the samples in the field, during sample collection.
- Document that the sample has been filtered on the field chain of custody records.
- Filter through a 0.45-micron membrane pressure filter dedicated for groundwater only.
  - It is recommended that filtration be performed using an in-line filtration system or an approved alternative.
  - A small amount of water must be allowed to pass through the filter and tubing before obtaining a sample.
  - Use a new filter for each monitoring point, in addition to each sampling event. Under no circumstances are filters to be re-used.
- If samples are collected utilizing bailers, pressure filters are an acceptable method of filtering.
- Where in-line filtration is not possible, pre-filtration bottles may be used to transfer the samples to the field filtration device.
  - Obtain pre-filtration bottles from an approved supplier and identify at the time of sampling. Notify the supplier ahead of time to arrange for a sufficient number of bottles.
  - Do not use any filtering apparatus that is used for other procedures.

5.4 SAMPLE PRESERVATION

Follow the sample preservation procedures described below:

- In general, perform sample preservation in the field (except for pre-preserved VOA vials).
  - Only with explicit approval from the Dane County representative can the sample preservation functions be performed by the laboratory upon receipt.
- Preserve samples immediately after filtration or collection (if samples are not filtered).
  - VOAs, which are allowed no headspace or no air bubbles trapped in the sample, will have proper preservatives included in the sample bottle.
  - Samples must be placed on ice immediately after collection.
- The laboratory will provide bottles that are pre-preserved and packed in separate plastic bags and labeled as such.
  - If not pre-preserved, then add the preservatives to the sample bottle after it has been filled with the sample. Fill the sample bottle to within 1/2 inch of the top of the sample container.

- Once the preservative has been added and the sample container capped, invert the sample container to ensure complete mixing with the sample. Do not shake the sample container.

- Check preservation of the samples in the field periodically to ensure that the sample is properly preserved.

- Cool the sample container to 4 degrees Celsius from the time the sample is collected through the time of analysis.

- Maintain samples in temperature-regulated refrigerators or in coolers containing ice or commercial frozen wet ice packs.

  - Ensure that provisions have been made in advance for facilities that do not have accommodations to freeze the wet ice packs. In such cases, it is recommended to bring pre-chilled coolers and extra ice to the site. Ensure the ice is frozen solid prior to use.

  - Do not use blue ice or chemical ice packs.

- Ensure that the samples are properly cooled during shipment to the laboratory. Samples must be shipped daily to the laboratory to ensure proper temperature control and holding time requirements are met.

5.5 DECONTAMINATION PROCEDURES FOR NON-DEDICATED, DOWN-HOLE SAMPLING EQUIPMENT

Procedures for cleaning non-dedicated, down-hole sampling equipment will be similar to procedures used for non-dedicated, down-hole purging equipment. Procedures are outlined in Section 4.3.

6.0 NR 507.16 (f) – QUALITY ASSURANCE - TRIP, FIELD, EQUIPMENT BLANKS, AND DUPLICATES

6.1 TRIP BLANKS

Trip Blanks are used to detect constituents that may be introduced in the field (either from the atmosphere or from sampling equipment), in transit to or from the sampling site, in bottle preparation, or sample storage at the laboratory (Quality Assurance). The laboratory reports Trip Blanks as separate samples, using "TB-(#)" as their sample point designation.

- Laboratories prepare the Trip Blanks, which are samples of volatile organic-free, laboratory quality water (e.g., Type II Reagent grade).

- Keep the Trip Blanks with the sample bottles while in transit to the site, during sampling, and during the return trip to the laboratory.

- Do not open Trip Blank sample bottles at any time during this process.

- If Trip Blank sample bottles are accidentally opened, note this fact on the field chain of custody record.

- Generally, include one Trip Blank bottle per cooler (that contains at least one VOA field sample).

6.2 FIELD BLANKS

Field Blanks are used to detect constituents that may be introduced in the field from the atmosphere. Laboratories report Field Blank results as separate samples; using "FB-(#)" as their sample designation.

- Prepare Field Blanks in the field, using laboratory-supplied bottles and the DI or laboratory reagent quality water.

- Prepare Field Blank by pouring the DI water into the sample bottles at the location of one of the wells in the sampling program.

- Identify the well at which the Field Blank is prepared on the Field Information Form, along with any information/observations that may explain any anomalous results (e.g., prevailing winds, upwind sources of potential degradation, etc.).

- Once a Field Blank is collected, handle and ship in the same manner as the rest of the samples.

- Prepare a minimum of one Field Blank for every 10 sampled wells or one Field Blank per day (if less than 10 wells are sampled).

6.3 EQUIPMENT BLANKS

Equipment Blanks are used to detect constituents that may be introduced in the field from sampling equipment. The laboratory will report Equipment Blank results as separate samples; using "EB-(#) or RB-#" as their sample designation point.

- Prepare Equipment (or rinsate) Blanks for all sampling events where non-dedicated down-hole (i.e., portable pumps or bailers) equipment may contact the sample.

- Follow the decontamination procedures for non-dedicated equipment outlined in Section 4.3 of this document.

- For non-dedicated equipment, prepare the Equipment Blank by pouring the DI or laboratory reagent quality water into or over the sampling device (e.g., the bailer) after it has been properly decontaminated, then pour the sample into the Equipment Blank bottles.

- Identify the equipment at which the Equipment Blank was collected from on the Field Information Form along with any information or observations that may explain any anomalous results (e.g., equipment type, prevailing winds, upwind sources of potential degradation, etc.).

- Prepare a minimum of one Equipment Blank for each day that monitoring wells are sampled.

6.4 DUPLICATES AND SPLIT SAMPLES

Duplicate Samples are used to confirm analytical results from a given sample point (Quality Control). The laboratory will report the Duplicate results as separate samples; using "DUP-(#)" as their sample designation point. Duplicate Samples will be analyzed by request only.

- Collect Duplicate Samples in the field using a matching set of laboratory-supplied bottles and sampling from the selected well, as-requested.
- Prepare each Duplicate Sample by alternating between the regular sample bottles and the duplicate sample bottles, in the designated sampling order (i.e., VOAs first).
- Duplicate Samples should not be physically different in color, turbidity, or other physical parameters.
- Identify the well at which the Duplicate Sample is collected on the Field Information Form, along with any information or observations that may explain any anomalous results (e.g., physical differences between samples, prevailing winds, upwind sources of potential degradation, etc.).
- Do not list the well designation on the chain of custody (i.e., all duplicates shall be blind).
- Once collected, handle and ship the Duplicate Sample in the same manner as the rest of the samples.

Split Samples are collected when co-sampling of a well is conducted with a third party (i.e., Regulatory Agency or External Consultant).

- Collect Split Samples using the same method as a Duplicate, alternating between regular sample bottle and split sample bottle in the designated sampling order.
- Identify the well at which the Split Sample(s) is collected on the Field Information Form.
- When samples are split with regulatory agencies, document the condition of the bottles or preservatives, sample collection methods, and the selected agency laboratory on the Field Information Form.

7.0 NR 507.16 (g) – PRIVATE WELL SAMPLING

Private well sampling is usually performed in response to requests by local or state regulatory agencies. Private wells are usually installed with minimal documentation of subsurface geologic conditions, and water is usually obtained through high volume submersible pumps.

- The procedures for private well sampling are similar to those used for groundwater sampling. Refer to Section 3.0 for procedures for measuring pH, specific conductance, and temperature.

- Take samples from private wells from water that does not run through a water softener. Collect samples from as close to the well source as possible, so basement faucets or outside faucets are preferable, and document where the samples were taken from on the Field Information Form.

- Ask the well owner about any treatment equipment installed in the system for softening, iron removal, pH adjustment, or other pre-treatment measures and document their response on the Field Information Form.

- Purge the plumbing and storage tanks prior to taking a sample to ensure the sample is representative of the aquifer.

  – To purge the plumbing, open faucets, flush the toilet, etc. to remove stagnant water in the pipes.

  – To ensure the plumbing is being purged, listen for the well pump.

  – Perform the purge for a minimum of 15 minutes or two to three pump cycles before sample collection.

- If the faucet includes an aeration screen, remove the screen before sampling (especially for organics), since the screen tends to agitate the water, and some organics could be lost.

  – If it cannot be removed, note this on the Field Information Form.

- Do not filter private well samples.

- Take field measurements as required by the approved monitoring plan.

- Document field measurements and all sampling information on the Field Information Form.

8.0 NR 507.16 (h) – SURFACE WATER SAMPLE COLLECTION

Surface water sampling occurs from sources such as discharge points, rivers, streams, ponds, and lakes.

- Prior to commencing the surface water sampling activities, note any areas of dead or distressed vegetation, odors, discolored water, oily sheen, weather conditions, wind direction, nearby activities, etc. on Field Information Forms for each sample location.

- Prior to sampling, collect field measurements for pH, electrical conductivity, and temperature at each sample point, unless otherwise specified in the approved monitoring plan or on the laboratory information sheets. Record results on the Field Information Form.

- Select the location of the sample point with care to ensure that a representative sample of water is obtained for testing.
  - Select the sample point to avoid intrusion of bottom sediments into the sample container.
- Samples collected from shallow depths can readily be obtained by submerging the sample container below the water surface.
  - Position the container mouth or opening so that the mouth faces in the upstream direction if flowing water is encountered.
  - Lower the sample container into the water while still capped, uncap under water to allow the sample bottle to fill, and re-cap before removal from the water.
  - Do not fill pre-preserved bottles using the aforementioned dipping method.
- When necessary, stand downstream to prevent any sources of cross-contamination and sediment disturbance.
- When sampling consecutive points in streams of flowing water, begin at the farthest downstream location and proceed upstream.
- In separate channels or water bodies, sample the locations expected to exhibit the greatest impacts last.
- To ensure that the surface water samples are representative, collect samples from the center of the stream or body of water (when possible) and at mid-depth.
- Do not field-filter surface water samples, unless specified under local and/or state regulations or as otherwise stated in the approved monitoring plan.
- Follow the sample preservation, storage, and shipment procedures described in Section 5.4.

9.0 NR 507.16 (h) – LEACHATE SAMPLE COLLECTION

This section of the Plan is applicable to sampling fluids from leachate wells, leachate manholes, or leachate retention basins.

- Upon arrival at the sample location, record the general condition of the sample location and its surroundings on the Field Information Form.
- Note any obvious odors in the vicinity of the sample point, foaming, discolored surface fluids, weather conditions, wind direction, nearby activities, leachate color, etc.
- Use dedicated leachate sampling equipment at each monitoring point.
- Never use fluid level measuring equipment used at leachate monitoring points at groundwater monitoring points.

- Measure leachate fluid levels prior to sample collection.

- Collect field measurements for pH, electrical conductivity, and temperature at each sample point prior to sampling, unless otherwise specified in the approved monitoring plan or on the laboratory information sheets.

- Record all results on the Field Information Form, noting units to three significant figures. Leachate risers and manholes do not require purging prior to sample collection.

- Collect samples using dedicated pumping equipment or by gently lowering a dedicated or disposable bailer into the sampling location and transferring the collected liquid into the sample bottles.

- Do not field-filter leachate samples, unless specified in the approved monitoring plan.

- Take special care when preserving leachate samples with acid, since a violent reaction may occur. Add acid slowly and carefully to the leachate samples to avoid this violent reaction.

- Check the pH of the leachate sample prior to shipment, and add acid to counter the buffering capacity of leachate when appropriate.

- Follow sample preservation, storage, and shipment procedures described in **Section 5.4**.

- Do not place leachate samples in the same coolers used for shipping groundwater, water supply, or other typically non-degraded samples.

Note: It is the sampler's responsibility to follow all appropriate health and safety procedures when collecting leachate samples. Landfill gas may be present in leachate risers. Never enter a manhole without proper gas detection and oxygen monitoring equipment, confined space training, and breathing apparatus. Avoid breathing gases emanating from a riser or manhole while collecting samples.

10.0 NR 507.16 (h) – GAS MONITORING AT GAS PROBES

Gas probe monitoring wells are installed around the perimeter of waste facility to monitor the potential movement of methane gas outside the limits of waste.

- Prior to gas monitoring, note any areas of dead or distressed vegetation, odors, weather conditions, wind direction, nearby activities, etc. and document them on the Field Information Forms for each sample location.

- Record barometric pressure, any observations of barometric pressure (trending up, down, or remaining steady), or any other pertinent observations on the Field Information Form.

- Each gas probe should have a cap with a petcock or valve with a piece of tubing and clip as a means of sealing the probe from the atmosphere. Attach the tubing on the probe to the meter and open to measure gas pressure using an Elkins Envision meter, or equivalent.

- Record the reading on the Field Information Form or downloaded electronically.

- Seal the tubing, remove the meter, and attach the gas testing meter (MSA Gasport, Landtec GEM2000, or equivalent).

- Open the tubing while attached to the gas meter.

- Run the pump on the meter approximately 2 minutes to purge and obtain stabilized percent methane and percent oxygen readings.

- Record these readings on Field Information Forms or electronic equivalent.

11.0 NR 507.16 (i) – SAMPLE CHAIN OF CUSTODY RECORD

To help maintain the integrity of the samples, strict chain of custody procedures are necessary. These procedures help to ensure that sample tampering does not occur.

- From the time the sample bottles leave the laboratory until the issuance of the analytical laboratory results, the samples or sample containers must be in the custody of an assigned Dane County representative, consultant, contractor, or laboratory.

- In order to maintain the chain of custody, the samples must be in sight of the assigned custodian or locked in a tamper-proof location.

- A written record of sample bottle possession and any transfers of samples must be maintained and documented on the field chain of custody record.

The sample chain of custody must contain, at a minimum, the following information:

- Site name
- Station numbers (Line No. on chain of custody, ascending order)
- Date samples are collected (by sample)
- Time sample collected (by sample)
- Type of sample (composite, grab, groundwater, leachate, or surface water)
- Number of containers per sample point
- Filtering requirements
- Preservatives
- Analysis required
- Special remarks (i.e., remittance of sealed coolers via courier)

The field chain of custody record must further be signed with the date and time for the following activities:

- Receipt of the sample cooler(s).
- Each time the sample cooler is transferred to the custody of another person.
- Immediately before sealing the sample cooler for transport to the laboratory. Form must be signed and enclosed within the cooler in a watertight bag.

Samples from the same monitoring point that are placed in more than one sample cooler require a field chain of custody record in each sample cooler. Any problems with the sample cooler's contents must also be noted on the form. Upon receipt of the sample cooler by the lab, the condition of the samples, temperature, date, and time are recorded on the field chain of custody record by the log-in personnel receiving the sample coolers. The field chain of custody record indicates by bottle and analysis group whether samples are preserved. The sampling team must record the field filtration, preservative, and any deviations from normal preservation requirements on the chain of custody record (the sampling team should initial the forms if this information is preprinted on forms provided by the lab). Failure to complete the field chain of custody record will render the resulting data useless. An example of the DCLF No. 3 field chain of custody form is provided in **Attachment D**.

Samples must be shipped to the laboratory as soon as possible, so that there is no exceedance of holding times. Due to the extremely short hold and extraction times involved with many of the methods used at DCLF No. 3, all samples with short holding times (e.g., nitrates, coliform) shall be shipped on the same day that the samples are collected. It is the sampler's sole responsibility to ensure expedient delivery of samples to the laboratory, so that the samples arrive at the proper temperature and within the range of specified holding times.

A member of the sampling team must be appointed to arrange sample pickup or transportation to the laboratory. Delivery requested on Saturday must be noted on the shipping or packing air bill for the courier. The laboratory must be notified at least 48 hours preceding the anticipated delivery. In the event of a holiday, contact the laboratory in advance for shipping instructions.

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Attachment A

Site Maps

[To be updated for all proposed locations as part of Plan of Operation]

LEGEND

- PROJECT PROPERTY LINE
- PROPERTY PARCEL LINE
- PROPOSED LIMITS OF WASTE (LOW)
- 18 HOLE GOLF COURSE LEASE LINE
- 27 HOLE GOLF COURSE LEASE LINE
- LIMITS OF PROPOSED 18-HOLE GOLF COURSE
- EXISTING GRADE (2' CONTOUR)
- EXISTING GRADE (10' CONTOUR)
- PAVED ROAD
- UNPAVED ROAD
- STREAM/EDGE OF WATER
- WETLAND
- UNDERGROUND ELECTRIC
- GAS MAIN
- OVERHEAD UTILITY
- SANITARY SEWER
- STORM SEWER
- TELEPHONE LINE
- WATER MAIN
- CULVERT
- ELECTRICAL PEDESTAL
- UTILITY POLE
- LIGHT POLE
- SANITARY MANHOLE
- STORM SEWER MANHOLE
- STORM SEWER INLET
- WATER VALVE
- WATER SUPPLY WELL
- WATER SUPPLY WELL (APPROXIMATE LOCATION)
- WATER SUPPLY WELL (ASSUMED LOCATION)
- ABANDONED WATER SUPPLY WELL
- PB-3 WSDOT SOIL BORING
- MW-3 WSDOT MONITORING WELL
- B-216 SOIL BORING
- MW-118 MONITORING WELL
- MW-118A PIEZOMETER
- SG-8 STAFF GAUGE
- CP101 CONTROL POINT

NOTES:

1. BASE MAP MODIFIED FROM TETRA TECH PROPOSED BORING AND MONITORING WELL LOCATION MAP DATED JULY 2022. TOPOGRAPHY FOR USH 12&18 AND CTH AB INTERCHANGE FROM WSDOT DESIGN DRAWINGS FOR PROJECT Nos. 3080-01-40, 3080-01-75, AND 3080-01-76 (APPROVED 1/31/2022).
2. CONTOUR DATA DOWNLOADED FROM DANE COUNTY WISCONSIN GIS SITE. CONTOURS DEVELOPED FROM SPRING 2017 LIDAR FLIGHT OF DANE COUNTY.
3. HORIZONTAL DATUM IS REFERENCED TO WISCONSIN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM (NAD 83), US SURVEY FEET.
4. VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM 1988. CONTOUR INTERVAL IS TWO FEET.
5. WETLANDS AS SHOWN ARE FROM TRC REPORT #275981.00004 DATED 12/08/2021. WISCONSIN DEPARTMENT OF NATURAL RESOURCES DETERMINED WETLANDS WERE ARTIFICIAL UNDER REVIEW FILE NO. EXE-SC-2023-13-00856 AND THE POND WAS ALSO ARTIFICIAL IN NATURE. THEREFORE NO REGULATORY AUTHORITY REGARDING CHAPTER 30 OR 281 APPLIES TO THE WATER BODY OR WETLANDS.
6. WETLAND BOUNDARIES OUTSIDE OF TRC REPORT STUDY AREA (SEE NOTE 5) TAKEN FROM WISCONSIN DEPARTMENT OF NATURAL RESOURCES, BUREAU OF WATERSHED MANAGEMENT – WETLANDS SECTION, DATED JULY 28, 2021.
7. LAKES, PONDS, RIVERS, AND STREAM DATA FROM HTTPS://GIS-COUNTYOFDANE.OPENDATA.ARCGIS.COM.
8. SOIL BORING AND MONITORING WELL LOCATIONS MW-1 THROUGH MW-4 AND B-1 THROUGH B-11 WERE INSTALLED IN JANUARY AND FEBRUARY 2022 BY TETRA TECH.
9. BORING OR WELL NUMBER DESIGNATES DRILLING LOCATION. BORING INFORMATION MAY HAVE BEEN OBTAINED FROM MORE THAN ONE BORING AT A LOCATION (E.G. SHALLOW BORING B-223 AND SEPARATE ROCK CORE BORING B-223C). SEE TABLE 5-2 FOR COMPLETE LIST OF BORINGS AND WELLS.

HORIZONTAL AND VERTICAL CONTROL POINT LOCATIONS

POINT NO.	NORTHING (FEET)	EASTING (FEET)	ELEVATION (FT-NAVD)	DESCRIPTION
CP101	380,751.36	2,166,580.51	870.930	SCAMON
CP102	378,650.01	2,169,627.23	899.540	SCAMON
CP103	377,337.14	2,167,000.91	933.580	SCAMON

600 0 600

SCALE: 1" = 600'

N

SAMPLING PLAN AND DEVICES

FIGURE 1

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

ENGINEER

FEASIBILITY REPORT
DANE COUNTY LANDFILL SITE NO. 3
4402 BRANDT ROAD
MADISON, WISCONSIN

SITE

DANE COUNTY DEPARTMENT OF WASTE AND RENEWABLES
1919 ALLIANT ENERGY CENTER WAY
MADISON, WI 53713

CLIENT

PROJECT NO.	25222268.00
DRAWN:	11/22/2023
REVISED:	02/07/2024
DRAWN BY:	KP
CHECKED BY:	JR/MRH
APPROVED BY:	BLP 02/09/2024

I:\25222268.00\Drawings\Sampling Plan.dwg, 2/8/2024 2:37:18 PM

Attachment B

Sampling Schedule and Parameter List

Dane County Landfill Site No. 3 (Proposed)
Environmental Monitoring Tables - Preliminary for Feasibility Report

Table 1a
Detection Groundwater Monitoring NR 507 Wells

Wells	Comment	Sampling & Reporting[1] Frequency	Parameter Codes	Parameters
Non-Subtitle D Wells				
Annual VOCs				
MW-1 MW-105A MW-106 MW-108 MW-113 MW-113A MW-116 MW-116A MW-120A MW-122 MW-123 MW-123A MW-123B MW-124 MW-124A MW-125 MW-125A		Sample Semiannually	04189 00001 00002 00003 00010 00094 00400 00941 22413 39036	Elevation, Groundwater (feet above mean sea level) Odor Color Turbidity Temperature, of water taken in field ^{0}C Field Conductivity @ 25^{0} C(umho/cm) Field pH (standard units) Chloride, filtered (mg/L) Total Hardness, filtered (mg/L) Alkalinity, filtered (mg/L)
Final groundwater monitoring program to be determined as part of the Plan of Operation		Sample Annually		VOCs (ch. NR 507, Appendix III, including acetone, carbon disulfide, methyl ethyl ketone and tetrahydrofuran), using EPA SW-846 Method 8260
Subtitle D Wells				
Semiannual VOCs				
MW-105 MW-107 MW-111 MW-119 MW-120		Sample Semiannually	04189 00001 00002 00003 00010 00094 00400 00941 22413 39036	Elevation, Groundwater (feet above mean sea level) Odor Color Turbidity Temperature, of water taken in field ^{0}C Field Conductivity @ 25^{0} C(umho/cm) Field pH (standard units) Chloride, filtered (mg/L) Total Hardness, filtered (mg/L) Alkalinity, filtered (mg/L)
Final groundwater monitoring program to be determined as part of the Plan of Operation				VOCs (ch. NR 507, Appendix III, including acetone, carbon disulfide, methyl ethyl ketone and tetrahydrofuran), using EPA SW-846 Method 8260
Water Level Only Monitoring Wells				
MW-2 MW-3 MW-4 MW-109 MW-109A MW-110 MW-110A MW-112 MW-114 MW-114A	MW-115 MW-117 MW-117A MW-118 MW-118A MW-121	Sample Semiannually	04189	Elevation, Groundwater (feet above mean sea level)
Final groundwater monitoring program to be determined as part of the Plan of Operation				

1. Unless specifically stated, reporting is as per code typically within 60 days after the end of the specified monitoring period.
2. Trip Blank (999) and/or Field Blank (997) data must also be submitted electronically.
3. Water level monitoring wells within the landfill footprint will be abandoned in advance of liner phase construction.

Dane County Landfill Site No. 3 (Proposed)
Environmental Monitoring Tables - Preliminary for Feasibility Report

Table 1b
Water Supply Wells

Well	DNR ID#	WUWN	OWNER	Comment	Sampling & Reporting [1.] Frequency	Parameter Codes	Parameters
Water supply wells included in the monitoring program will be determined as part of the Plan of Operation					Sample Semiannually	00001 00002 00003 00010 00094 00400 00410 00900 00940	Odor Color Turbidity Temperature, of Water taken in field ^{0}C Field Conductivity @ 25^{0} C(umho/cm) Field pH (standard units) Alkalinity, total (mg/L) Hardness, total (mg/L) Chloride, total (mg/L)
					Sample Annually	VOCs (ch. NR 507, Appendix III, including acetone, carbon disulfide, methyl ethyl ketone and tetrahydrofuran), using EPA SW-846 Method 8260	

1. To be reported as per code within 10 days of landfill owner's or operator's receipt of results.
2. Trip Blank (999) and/or Field Blank (997) data must also be submitted electronically.

Dane County Landfill Site No. 3 (Proposed)
Environmental Monitoring Tables - Preliminary for Feasibility Report

Table 2a
Leachate Characteristic Monitoring

Monitoring Pt. / DNR ID# / Comment	Sampling & Reporting[1] Frequency	Parameter Codes	Parameters
Leachate monitoring points and the final leachate monitoring program parameters will be determined as part of the Plan of Operation.	Sample/Record Total Volumes Monthly Report Semiannually	00032	Leachate Volume Pumped (1000s of gallons)
	Sample Quarterly If leachate is recirculated or liquids are applied under an approved RD&D Plan	00094 00310 00340 00400 00410 00610 00900	Field Conductivity @ 25oC (umho/cm) BOD (5 day @ 20oC (mg/L) COD, unfiltered (mg/L) Field pH, (standard units) Alkalinity, total as CaCO3 (mg/L) Nitrogen, Ammonia, total (mg/L as N) Hardness, total (mg/L as CaCO3)
	Sample Semiannually	00001 00002 00003 00010 00094 00400 00150 00310 00340 00410 00610 00900 01027 00940 74010 01051 01055 00126 00625 00929 00945 VOCs (ch. NR 507, Appendix III, including acetone, carbon disulfide, methyl ethyl ketone and tetrahydrofuran), using EPA SW-846 Method 8260	Odor Color Turbidity Field Temperature Field Conductivity @ 25oC (umho/cm) Field pH, (standard units) Suspended Solids, total (mg/L) BOD (5 day @ 20°C (mg/L) COD, unfiltered (mg/L) Alkalinity, total as CaCO3 (mg/L) Nitrogen, Ammonia, total (mg/L as N) Hardness, total (mg/L as CaCO3) Cadmium, total (ug/l) Chloride, total (mg/L) Iron, total (mg/L) Lead, total (mg/L) Manganese, total (mg/L) Mercury, total, (ug/L) Total Kjeldahl Nitrogen, total (mg/L) Sodium, total (mg/L) Sulfate, total (mg/L)
	Sample Annually		Semivolatile organic compounds (ch. NR 507, Appendix IV) using EPA SW-846 Method 8270

1. Unless specifically stated, reporting is as per code typically within 60 days after the end of the specified monitoring period. For items indicated as "Report Semiannually", the reporting is due within 60 days after the end of the last monitoring period in the semiannual period. The semiannual periods will run January-June and July-December unless an alternative period is proposed and the Department concurs.

Dane County Landfill Site No. 3 (Proposed)
Environmental Monitoring Tables - Preliminary for Feasibility Report

Table 2b

Leachate Head Level and Volume Monitoring

Monitoring Pt. DNR ID# Comment	Sampling & Reporting[1] Frequency	Parameter Codes	Parameters
Leachate headwell monitoring points will be determined as part of the Plan of Operation	Sample Quarterly Report Semiannually Increase frequency to monthly if leachate is recirculated or liquids are applied under an approved RD&D Plan	00031 99423	Depth of Leachate from top of liquid level to bottom in feet Elevation, Leachate Head feet above mean sea level
Points to evaluate leachate recirculation will be determined as part of the Plan of Operation	Sample Monthly Report Annually (not required unless/until leachate recirculation begins)	00032 99723	Leachate Volume Pumped Leachate volume recirculated

1. Unless specifically stated, reporting is as per code typically within 60 days after the end of the specified monitoring period. For items indicated as "Report Semiannually", the reporting is due within 60 days after the end of the last monitoring period in the semiannual period. The semiannual periods will run January-June and July-December unless an alternative period is proposed and the Department concurs.

Dane County Landfill Site No. 3 (Proposed)
Environmental Monitoring Tables - Preliminary for Feasibility Report

Table 3

Monitoring Pt / DNR ID# / Comment	Sampling & Reporting[1] Frequency	Parameter Codes	Parameters
Landfill Gas Extraction			
Gas extraction well monitoring points to be determined as part of the Plan of Operation	Monthly Report Semiannually	46382 46385 99098 46388 46387 85544 85547 85550 99848	Header Pressure (inches of water column) Well Head Pressure (inches of water column) Gas Flow Rate (scfm) Gas Temperature (^{0} F) Valve Opening (% open) Percent Carbon Dioxide, by volume Percent Methane, by volume Percent Oxygen, by volume Percent Balance Gas, by volume
	Annually	00023 00031	Elevation, Leachate Head Depth of Leachate
Gas Blower			
Gas blower monitoring points to be determined as part of the Plan of Operation	Sample Monthly Report Semiannually	46382 98927 99098 46388 85544 85547 85550 99848	Header Pressure (inches of water column) Gas Extracted, Total Monthly Volume (1000 cu. Ft. /month) Gas Flow Rate (scfm) Gas Temperature (^{0} F) Percent Carbon Dioxide, by volume Percent Methane, by volume Percent Oxygen, by volume Percent Balance Gas, by volume
	Sample Annually		VOCs using USEPA Method TO-15 Total reduced sulfur using USEPA Method 16, ASTM D5504, or D6228
Landfill Gas Monitoring Probes			
Gas probe monitoring points to be determined as part of the Plan of Operation	Sample Quarterly	46389 85547 85550 00021 00025 46381 00007	Soil Gas Pressure (inches) Percent Methane, by volume Percent Oxygen, by volume Ambient Air Temperature (^{0} F) Barometric Pressure (mm of Hg) Trend in Barometric Pressure Ground Conditions 1=frozen, 2=wet, 3=dry
Site Conditions			
Site conditions	Sample Quarterly when gas probes are monitored, per NR 507.22(1)(a)	46389 85547 85550 00021 00025	Soil Gas Pressure (inches) Percent Methane, by volume Percent Oxygen, by volume Ambient Air Temperature (^{0} F) Barometric Pressure (mm of Hg)

1. Unless specifically stated, reporting is as per code typically within 60 days after the end of the specified monitoring period. For items indicated as "Report Semiannually", the reporting is due within 60 days after the end of the last monitoring period in the semiannual period. The semiannual periods will run January-June and July-December unless an alternative period is proposed and the Department concurs.

Attachment C

Sampling Containers, Preservation, and Holding Time Requirements

Prepared for:
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Prepared by Campbell, Donna L
Date
Expiration Date
Est. Start Date 4/16/2018

Project: Rodefeld LF - 25218021.21 *Quote Number: 50014474 - No Version*

Analytical Sample Information

Analysis Method	Matrix	Preservative	Client Sub List Desc Container	Volume Required	Holding Time
Ammonia			Ammonia		
SM4500NH3_G	Solid	None	Clear Glass 8oz Wide - unpreserved	5 g	28 Days
Anions, Ion Chromatography			Chloride/Fluoride/Sulfate		
300	Solid	None	Clear Glass 8oz Wide - unpreserved	10 g	48 Hours
Chlorine, Total			Chlorine, Total		
9251_Total_Cl	Solid	None	Clear Glass 8oz Wide - unpreserved	0 g	28 Days
Chromium, Hexavalent			Chromium, Hexavalent		
7196A	Solid	None	Clear Glass 8oz Wide - unpreserved	5 g	30 Days
Cyanide			Cyanide		
9014	Solid	None	Clear Glass 8oz Wide - unpreserved	5 g	14 Days
Cyanide, Total andor Amenable			Cyanide, Total		
9012B	Solid	None	Clear Glass 8oz Wide - unpreserved	0 g	14 Days
Ignitability, Pensky-Martens Closed-Cup Method			Ignitability		
1010A	Solid	None	Clear Glass 8oz Wide - unpreserved	150 g	
Mercury (CVAA)			Mercury (CVAA)		
7470A	Solid	None	Clear Glass 16oz Wide - unpreserved	150 g	14 Days
Mercury (CVAA)			Mercury (CVAA)		
7471B	Solid	None	Clear Glass 8oz Wide - unpreserved	5 g	28 Days
Metals (ICP)			Metals (18)		
6010C	Solid	None	Clear Glass 8oz Wide - unpreserved	5 g	180 Days
Metals (ICP)			Metals - Hg		
6010B	Solid	None	Clear Glass 16oz Wide - unpreserved	150 g	14 Days
Metals (ICP)			Sulfur		
6010C	Solid	None	Clear Glass 4oz Wide - unpreserved	5 g	180 Days
Nitrogen, Nitrate-Nitrite			N+N		
353.2	Solid	None	Clear Glass 8oz Wide - unpreserved	10 g	28 Days
Nitrogen, Total Kjeldahl			TKN		
SM4500_TKN_H	Solid	None	Clear Glass 8oz Wide - unpreserved	5 g	28 Days
Paint Filter			Paint Filter		
9095B	Solid	None	Clear Glass 8oz Wide - unpreserved	125 g	
Percent Moisture			Percent Moisture		

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Moisture	Solid	None	Clear Glass 8oz Wide - unpreserved	20 g	14 Days
pH			pH		
9045C	Solid	None	Clear Glass 8oz Wide - unpreserved	30 g	IMMEDIATELY
pH			pH		
9045D	Solid	None	Clear Glass 8oz Wide - unpreserved	30 g	IMMEDIATELY
Phosphorus			Phosphorus		
4500_P_E	Solid	None	Clear Glass 8oz Wide - unpreserved	5 g	28 Days
Polychlorinated Biphenyls (PCBs) by Gas Chromatography			PCB		
8082A	Solid	None	Clear Glass 8oz Wide - unpreserved	20 g	14 Days
Semivolatile Organic Compounds (GC/MS)			SVOC		
8270D	Solid	None	Clear Glass 16oz Wide - unpreserved	150 g	14 Days
Semivolatile Organic Compounds (GC/MS)			SVOC		
8270D	Solid	None	Clear Glass 8oz Wide - unpreserved	20 g	14 Days
Specific Gravity, Density			Specific Gravity		
2710F	Solid	None	Clear Glass 8oz Wide - unpreserved	30 g	28 Days
Sulfide, Acid soluble and Insoluble (Titrimetric)			Sulfide		
9034_Calc	Solid	None	Clear Glass 8oz Wide - unpreserved	5 g	7 Days
Sulfide, Acid soluble and Insoluble (Titrimetric)			Sulfide, Acid soluble and Insoluble (Titrimetric)		
9034_Calc	Solid	None	Clear Glass 8oz Wide - unpreserved	5 g	7 Days
Sulfide, Reactive			Sulfide, Reactive		
9034_Reactive	Solid	None	Clear Glass 8oz Wide - unpreserved	5 g	14 Days
Total, Fixed, and Volatile Solids			Total Solids		
2540G	Solid	None	Clear Glass 8oz Wide - unpreserved	15 g	7 Days
Volatile Organic Compounds (GC/MS)			VOC		
8260B	Solid	None	Clear Glass 4oz Wide - unpreserved	100 g	14 Days
Volatile Organic Compounds (GC/MS)			VOC		
8260B	Solid	None	VOA Terracore Kit Pre-pkg MeOH Only	1 NONE	14 Days
Alkalinity			Alkalinity		
2320B	Water	None	Plastic 1 liter - unpreserved	100 mL	14 Days
Ammonia			Ammonia		
SM4500NH3_G	Water	Sulfuric Acid	Plastic 500ml - with Sulfuric Acid	175 mL	28 Days
Anions, Ion Chromatography			3 Anions - Cl, SO4, F		
300	Water	None	Plastic 250ml - unpreserved	75 mL	48 Hours
Anions, Ion Chromatography			Anions by IC - Cl		
300	Water	None	Plastic 250ml - unpreserved	75 mL	48 Hours

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Anions, Ion Chromatography 300	Water	None	Anions by IC - Cl, SO4 Plastic 250ml - unpreserved	75 mL	48 Hours
Anions, Ion Chromatography 300	Water	None	Anions by IC - SO4 Plastic 250ml - unpreserved	75 mL	48 Hours
Anions, Ion Chromatography 300	Water	None	Chloride/Fluoride/Sulfate - Diss Plastic 250ml - unpreserved	75 mL	48 Hours
Anions, Ion Chromatography 300	Water	None	Chloride/Sulfate Plastic 250ml - unpreserved	75 mL	48 Hours
Anions, Ion Chromatography 300	Water	None	Sulfate, Dissolved Plastic 250ml - unpreserved	75 mL	48 Hours
BOD, 5-Day 5210B	Water	None	BOD, 5-Day Plastic 1 liter - unpreserved	500 mL	48 Hours
BOD, 5-Day 5210B	Water	None	CBOD, 5-Day Plastic 1 liter - unpreserved	500 mL	48 Hours
Chromium, Hexavalent 3500_CR_B	Water	None	Chromium, Hexavalent Plastic 500ml - unpreserved	175 mL	24 Hours
COD 5220C	Water	Sulfuric Acid	COD Plastic 500ml - with Sulfuric Acid	50 mL	28 Days
Cyanide, Total 4500_CN_E	Water	Sodium Hydroxide	Cyanide Plastic 250ml - with Sodium Hydroxide	75 mL	14 Days
Cyanide, Total 335.4	Water	Sodium Hydroxide	Cyanide, Total Plastic 250ml - with Sodium Hydroxide	75 mL	14 Days
Cyanide, Total 4500_CN_E	Water	Sodium Hydroxide	Cyanide, Total Plastic 250ml - with Sodium Hydroxide	75 mL	14 Days
Dissolved Gases (GC) RSK_175	Water	Hydrochloric Acid	Dissolved Gases (GC) Methane Voa Vial 40ml - Hydrochloric Acid	120 mL	14 Days
Dissolved Gases (GC) RSK_175	Water	Hydrochloric Acid	Methane Voa Vial 40ml - Hydrochloric Acid	120 mL	14 Days
Field Sampling FieldSampling	Water	None	Field Data Entry Field Container	0 NONE	
Mercury (CVAA) 7470A	Water	Nitric Acid	Mercury Plastic 250ml - with Nitric Acid	50 mL	28 Days
Mercury (CVAA) 245.1	Water	Nitric Acid	Mercury (CVAA) Plastic 250ml - with Nitric Acid	50 mL	28 Days
Mercury (CVAA) 7470A	Water	Nitric Acid	Mercury (CVAA) Plastic 250ml - with Nitric Acid	50 mL	28 Days
Metals (ICP)			Metals (9)		

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200.7	Water	Nitric Acid	Plastic 250ml - with Nitric Acid	75 mL	180 Days
Metals (ICP)			Metals (9)		
6010C	Water	Nitric Acid	Plastic 250ml - with Nitric Acid	75 mL	180 Days
Metals (ICP)			Metals (ICP) (10)		
6010B	Water	Nitric Acid	Plastic 250ml - with Nitric Acid	75 mL	180 Days
Metals (ICP)			Metals (ICP) - 11 elements		
6010B	Water	Nitric Acid	Plastic 250ml - with Nitric Acid	75 mL	180 Days
Metals (ICP)			Metals (ICP) - 18 elements		
6010B	Water	Nitric Acid	Plastic 250ml - with Nitric Acid	75 mL	180 Days
Metals (ICP)			Metals (ICP) - 19 elements		
6010B	Water	Nitric Acid	Plastic 250ml - with Nitric Acid	75 mL	180 Days
Metals (ICP)			Metals (ICP) - 3 elements		
6010B	Water	Nitric Acid	Plastic 250ml - with Nitric Acid	75 mL	180 Days
Metals (ICP)			Metals (ICP) - 9 elements		
6010B	Water	Nitric Acid	Plastic 250ml - with Nitric Acid	75 mL	180 Days
Metals (ICP)			Metals (ICP) - Iron only		
6010B	Water	Nitric Acid	Plastic 250ml - with Nitric Acid	75 mL	180 Days
Metals (ICP)			Metals (ICP) - Sulfur only		
6010C	Water	Nitric Acid	Plastic 250ml - w/nitric - dis	50 mL	180 Days
Metals (ICP)			Metals (ICP) - Sulfur only		
6010C	Water	Nitric Acid	Plastic 250ml - with Nitric Acid	50 mL	180 Days
Metals (ICP)			Sulfur		
6010C	Water	Nitric Acid	Plastic 250ml - w/nitric - dis	50 mL	180 Days
Metals (ICP)			Sulfur		
6010C	Water	Nitric Acid	Plastic 250ml - with Nitric Acid	50 mL	180 Days
Metals (ICP)			Sulfur		
6010C	Water	None	Plastic 250ml - unpreserved	50 mL	180 Days
Nitrogen, Nitrate-Nitrite			Nitrogen, Nitrate-Nitrite		
353.2	Water	Sulfuric Acid	Plastic 500ml - with Sulfuric Acid	75 mL	28 Days
Nitrogen, Total Kjeldahl			Nitrogen, Total Kjeldahl		
SM4500_TKN_H	Water	Sulfuric Acid	Plastic 500ml - with Sulfuric Acid	175 mL	28 Days
Phosphorus			Phosphorus		
4500_P_E	Water	Sulfuric Acid	Plastic 500ml - with Sulfuric Acid	100 mL	28 Days
Semivolatile Organic Compounds (GC/MS)			Semivolatile Organic Compounds (GC/MS)		
8270D	Water	None	Amber Glass 1 liter - unpreserved	2000 mL	7 Days

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Date
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Est. Start Date 4/16/2018

Project: Rodefeld LF - 25218021.21 ***Quote Number: 50014474 - No Version***

Semivolatile Organic Compounds (GC/MS)			Semivolatile Organic Compounds (GC/MS)		
8270D	Water	None	Amber Glass 250ml - unpreserved	500 mL	7 Days
Semivolatile Organic Compounds (GC/MS)			SVOC		
625	Water	None	Amber Glass 250ml - unpreserved	500 mL	7 Days
Solids, Total Suspended (TSS)			Solids, Total Suspended (TSS)		
2540D	Water	None	Plastic 1 liter - unpreserved	300 mL	7 Days
Sulfide, Total			Sulfide		
SM4500_S2_F	Water	Zinc Acetate and Sodium Hydroxide	Plastic 1 liter - Zn Acetate and NaOH	400 mL	7 Days
Sulfide, Total			Sulfide, Total		
SM4500_S2_D	Water	Zinc Acetate and Sodium Hydroxide	Plastic 250ml - with Zinc Acetate & NaOH	250 mL	7 Days
Sulfide, Total			Sulfide, Total		
SM4500_S2_F	Water	Zinc Acetate and Sodium Hydroxide	Plastic 1 liter - Zn Acetate and NaOH	400 mL	7 Days
Sulfide, Total			Sulfide, Total		
SM4500_S2_F	Water	Zinc Acetate and Sodium Hydroxide	Plastic 250ml - with Zinc Acetate & NaOH	50 mL	7 Days
Total Hardness (as CaCO3) by calculation			Total Hardness (as CaCO3) by calculation		
SM2340B	Water	Nitric Acid	Plastic 250ml - with Nitric Acid	75 mL	180 Days
Volatile Fatty Acids, Ion Chromatography			Volatile Fatty Acids		
VFA_IC	Water	None	Voa Vial 40ml Amber - unpreserved	120 mL	28 Days
Volatile Fatty Acids, Ion Chromatography			Volatile Fatty Acids, Ion Chromatography		
VFA_IC	Water	None	Voa Vial 40ml Amber - unpreserved	120 mL	28 Days
Volatile Organic Compounds (GC/MS)			VOC		
624_5ml	Water	Hydrochloric Acid	Voa Vial 40ml - Hydrochloric Acid	120 mL	14 Days
Volatile Organic Compounds (GC/MS)			Volatile Organic Compounds (GC/MS)		
524.2_Preserved	Water	Hydrochloric Acid	Voa Vial 40ml - Hydrochloric Acid	120 mL	14 Days
Volatile Organic Compounds (GC/MS)			Volatile Organic Compounds (GC/MS)		
8260B	Water	Hydrochloric Acid	Voa Vial 40ml - Hydrochloric Acid	120 mL	14 Days

Hold Times listed above represent the minimum allotted time between sampling and lab extraction, prep or analysis.

Multiple analyses may be consolidated into fewer containers. Please contact your Project Manager for clarification when requesting sample containers.

Except for some special tests, all samples should be kept cold at 6 degrees C.

Attachment D

Chain of Custody Form and Field Information Forms

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf.

Section A Required Client Information:		**Section B** Required Project Information:	**Section C** Invoice Information:	
Company:		Report To:	Attention:	
Address:		Copy To:	Company Name:	
			Address:	**Regulatory Agency**
Email:		Purchase Order #:	Pace Quote:	
Phone:	Fax:	Project Name:	Pace Project Manager:	**State / Location**
Requested Due Date:		Project #:	**Pace Profile #:**	**WI**

ITEM #	**SAMPLE ID** One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N)	Residual Chlorine (Y/N)
1																				
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: **DATE Signed:**

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

DANE COUNTY LANDFILL SITE #3

LIQUID LEVEL MONITORING IN GAS EXTRACTION WELLS

Personnel: _____

DNR ID	Monit. Point	Date	Depth to Leachate	Measured Total Depth (ft)	Existing Total Depth (ft)	Measured From Gas Well, Standpipe, or Gauge	Comments

NOTES:

1. Leachate depth is measured from the top of the gas well head (WH), the top of the standpipe (SP) or from the inches of water column gauge (GAUGE).

DANE COUNTY LANDFILL SITE #3
GAS EXTRACTION WELL MONITORING

Personnel: _____
Date of Sampling: _____
Weather: _____
Meter: _____
Calibration Check: _____
On-site: _____ Off-site: _____

Instructions: Fill in if the well was monitored (Yes/No) and comments for each well when monitoring (Examples: Out of Reach, Inaccessible, Off)

Place NA's in cells where a particular reading could not be obtained (Example: NA, for flow, if well is out of reach.)

DNR ID	Monit. Point	Monitored Yes/No	Well Hp (in. H20)	Header (in. H20)	Flow (SCFM)	Gas Temp (deg. F)	Valve Opening % open	Methane % by volume	Oxygen % by volume	PLEASE FILL IN COMMENTS IF ANY Comments

DANE COUNTY LANDFILL SITE #3
LEACHATE HEAD MONITORING

Personnel: ____________________

DNR ID	Monit. Point	Date	Type of Measurement	Measurement
Horizontal Leachate Head Wells				
			Depth of leachate (inches) =	
			Elevation of Landfill Liner (ft) =	
			Leachate Elevation (ft) *(Depth + Liner Elevation) =*	
			Depth of leachate (inches) =	
			Elevation of Landfill Liner (ft) =	
			Leachate Elevation (ft) *(Depth + Liner Elevation) =*	
			Depth of leachate (inches) =	
			Elevation of Landfill Liner (ft) =	
			Leachate Elevation (ft) *(Depth + Liner Elevation) =*	
			Depth of leachate (inches) =	
			Elevation of Landfill Liner (ft) =	
			Leachate Elevation (ft) *(Depth + Liner Elevation) =*	

DANE COUNTY LANDFILL SITE #3
GAS PROBE MONITORING

Personnel: _____
Meter: _____
Date: _____
Calibration Check: _____

Weather Conditions:
Barometric Pressure: Start: _____ End: _____
Wind Speed/Direction: _____
Air Temperature: _____
Ground Conditions: _____

Instructions: Fill in if the probe was monitored (Yes/No) and comments for probe when monitoring (If any)

DNR ID	Monit. Point	Monitored (Y/N)	(initial) % CH4	(stabilized) % CH4	% O2	soil gas press. (in. H20)	Comments

DANE COUNTY LANDFILL SITE #3
GAS BLOWER MONITORING

Personnel: _____
Date of Sampling: _____
Weather: _____
Meter: _____
Calibration Check: _____
On-site: _____ Off-site: _____

Instructions: Fill in if the point was monitored (Yes/No) and comments for each point when monitoring (Examples: Out of Reach, Inaccessible, Off)

Place NA's in cells where a particular reading could not be obtained

DNR ID	Monit. Point	Monitored Yes/No	Header (in. H20)	Flow (SCFM)	Gas Temp (deg. F)	Gas Extracted 1000 cu. Ft./month	Methane % by volume	Oxygen % by volume	PLEASE FILL IN COMMENTS IF ANY Comments

Groundwater, Surface Water, and Leachate Monitoring Field Sheets

Facility / Project Name: **Dane County Landfill Site #3 - SCS ENGINEERS # 25222268.00**

Weather Conditions: _____

Person(s) Sampling: _____

Multi Meter (pH, Temp, Cond.) **Model:** _____ **Serial Number:** _____

Multi Meter Calibration **pH Standard: 4** **Instrument Reading:** _____

pH Standard: 7 **Instrument Reading:** _____

Conductivity Standard: 1413 µS **Instrument Reading:** _____

Water Level Tape **Serial Number:** _____

*** All water level elevations need to be collected on the same day***

* Subtitle D Well

b = bailer

p = pump

Well ID	Date	Depth to Water (feet)	Total Depth (feet)	Top of Casing Elevation (ft/msl)	Groundwater Elevation (ft/msl)	4 Well Volumes (gal)	Actual Purged Volume (gal)	Purged Dry? (Y/N)	Purging Device (b or p)	Field Conductivity (uMhos / cm)	Field Temperature (Celsius)	Field pH	Odor (Y/N)	Color (Y/N)	Turbidity (Y/N)	Sample Time	Comments
_____DUP-1																	Collect one DUP for every 10 samples
_____DUP-2																	Collect one DUP for every 10 samples
Trip Blank																	

Well ID	Date	Depth to Water (feet)	Total Depth (feet)	Top of Casing Elevation (ft/msl)	Groundwater Elevation (ft/msl)	4 Well Volumes (gal)	Actual Purged Volume (gal)	Purged Dry? (Y/N)	Purging Device (b or p)	Field Conductivity (uMhos / cm)	Field Temperature (Celsius)	Field pH	Odor (Y/N)	Color (Y/N)	Turbidity (Y/N)	Sample Time	Comments
Water Level Elevations Only																	
Surface Water Readings																	
Water Supply Wells																	
Leachate																	

I:\25222268.00\Deliverables\Feasibility Report\Appendices\P_Sampling Plan\D\[DCLF #3 Groundwater Monitoring and Leachate Fieldsheet.xls]Rodefeld GW Fieldsheet_Dec