

Attachment B5.C
Soil Sampling and Analysis Plan

MASTER CELL VI
WAYNE DISPOSAL, INC. SITE #2
MID 048 090 633

**SOIL MONITORING
SAMPLING AND ANALYSIS PLAN
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1.0 INTRODUCTION

This Soil Monitoring Sampling and Analysis Plan (SM SAP) identifies the procedures for monitoring on-site soil and ditch sediment samples at Wayne Disposal, Inc. (WDI), Site 2 during the active life of the hazardous waste disposal facility. The soil monitoring program described in the SM SAP is designed to test on-site soil and ditch sediments for the presence of polychlorinated biphenyls (“PCBs”). PCBs detected in the soils or sediments could potentially be transported by storm water into the sedimentation basins at the site. The storm water in the sedimentation basins is treated for PCBs prior to discharge to Quirk Drain in accordance with a National Pollution Discharge Elimination System (NPDES) Permit. This monitoring program is one of the checks on the engineered controls and operational procedures employed by WDI to detect an on-site release of hazardous waste or hazardous waste constituents as early as possible and allow WDI to initiate efforts to locate and control the source and prevent an off-site release.

This SM SAP also prompts notification and response actions that WDI must take when an apparent or confirmed threshold level exceedance of PCBs in on-site soil/sediments occurs. This SM SAP does not apply to an off-site detection of PCBs in soil/sediments. In the event PCBs are detected and/or confirmed in off-site soil/sediments, WDI must notify the EGLE in accordance with the General Operating Conditions of the Operating License for Reporting Noncompliance that may endanger human health or the environment

2.0 REVISIONS

WDI may revise this SM SAP and submit the revised plan to the Director of the Material Management Division, Michigan Department of Environmental Quality (MMD/EGLE) for review and approval prior to implementation.

3.0 SAMPLE LOCATIONS

Figure 1 shows the locations of the 34 soil monitoring program sampling locations. Of the 34 locations 29 sampling locations are active and identified as SM-1 through SM-8, SM-9A, SM-10 through SM-24, SM-25A, and SM-31 through SM-35. Locations that have been moved are designated with the letter of the alphabet that corresponds to the relocation number (e.g., SM-25A is the first replacement). SM-21 was eliminated during 2019 construction of the eastern portion of MC VI-G1. SM-9 and SM-25 were replaced by SM-9A and SM-25A as part of these same construction activities. SM-9A, SM-10 through SM-15, SM-22 and SM-25A, will be reevaluated for replacement (if no other locations can be used to monitor the active area) or abandonment cell construction proceeds in those areas. SM-25A will continue to be moved north until all MC VI-F subcells are constructed. SM-30 will be activated after Cell VI-G Phase 3 becomes active. As cells are closed, four additional soil sampling locations (SM-26 through SM-29) will be added after final cover is installed. The locations for the SM SAP samples are surveyed and are marked in the field with a monument. The following provides a breakdown of the soil monitoring points:

- Soil Monitoring Points:
 - SM-2 through SM-4, SM-6 through SM-8, SM-9A, SM-11, SM-13 through SM-16, SM-18 through SM-20, M-22 through SM-24, SM-25A, SM-34 and SM-35.
- 6 Sediment Monitoring Points:
 - SM-1, SM-5, SM-10, SM-12, SM-17, SM-31 through SM-35
- 4 Post Closure Soil Monitoring Points:
 - SM-26 through SM-29
- 1 Post MC VI F/G Construction Sediment Monitoring points
 - SM-30

One grab sample of soil will be collected from within 10 feet of the surveyed monument from each of the respective soil monitoring locations. One sediment sample will be collected from within the ditch at each of the respective drainage ditch locations within 10 feet of the surveyed monument in a linear fashion. At the time of sampling, the exact location for each of the individual samples will be marked with a flag and a written description of the location (distance from monument and compass direction) will be recorded on the sample collection log so that a confirmation sample can be collected if necessary (see Section 5 below). Upon initiation of WDI's next routine sampling event, the flag will be moved to the new sampling location following the procedures described in this section of the SM SAP

4.0 SAMPLE FREQUENCY

The SM SAP samples are to be collected semiannually in spring and fall of each calendar year.

5.0 SAMPLE COLLECTION

Samples from each of the active monitoring locations shown on Figure 1 are to be collected using a disposable hand trowel or other tool capable of excavating a short distance into the soil/sediment. Each individual sampling location is to be prepared by laying out an area approximately one-half foot square on the soil/sediment surface and carefully removing vegetation, sticks, rocks, or other debris to expose a clear sampling surface. At each individual sampling location, one sample is to be collected by removing the top inch of soil/sediment from the one-half foot square area, placing the soil/sediment into a separate stainless-steel bowl, disposable foil pan, or ziplock bag, gently mixing the soil/sediment in the selected type of container to homogenize the sample, and removing the homogenized soil/sediment from the container into clean glass sampling jars. A sample from each of the active sampling locations is to be submitted to the laboratory for PCB analysis.

Clean protective gloves must be worn during sample collection and must be replaced at each sample location. Care should be always taken when handling the samples. Each sample jar must be labeled with the sampling location, the time and date of the event, and the sampler's initials. If it is necessary to use non-disposable sampling equipment, the equipment will be decontaminated between sampling locations. In addition, one blind duplicate and one equipment blank for each piece of non-dedicated (if used) sampling equipment utilized in the sampling process (i.e., sample collection tools and homogenizing container) must be collected for each sampling event. The equipment blank must be collected by pouring clean de-ionized water over and/or into the decontaminated piece of equipment and collecting the rinsate in the appropriate jar for analysis. After collection, the samples must be stored in a clean cooler containing ice or

ice packs. The coolers containing samples must be stored in a secure location, until being transported to the laboratory.

A sample collection log (Figure 2) must be filled out at each sampling location and any unusual conditions encountered must be noted. A chain of custody (COC) form must also be filled out for each sampling event. This COC must be filled out fully for each sample submitted for analysis and each person responsible for the handling of these samples must sign and date the form. When the samples are delivered to the laboratory and the lab has signed for their receipt, a copy of the COC must be retained on site in the Quality, Environment, Health and Safety (QEHS) Department records.

6.0 SAMPLE ANALYSIS

The samples from each of the active sampling locations will be analyzed for total PCBs where total PCBs equals the sum of the following PCB aroclors: PCB-1016, PCB-1221, PCB-1232, PCB-1242, PCB-1248, PCB-1254 and PCB-1260. The analytical method detection limit will be 0.1 mg/kg on a dry weight basis. Samples will be analyzed in accordance with USEPA SW-846 Method 8082. Samples will be analyzed within 40 days of collection to meet holding time requirements for the analytical method.

The laboratory quality control/quality assurance manual (QA/QC Manual) describing the required internal policies, guidelines, and procedures of any WDI contract lab is contained in the Groundwater Sampling and Analysis Plan (GW SAP). WDI is to use this QA/QC Manual in evaluating the QA/QC standard operating procedures of any contract laboratory utilized for the purposes of this SM SAP and ensure that the laboratory employs generally acceptable practices that meet the specifications of the QA/QC Manual in the GW SAP.

7.0 DATA EVALUATION

The analytical data must be evaluated to determine whether there has been an apparent threshold level exceedance (ATLE). The applicable threshold level is defined as follows:

- Total PCBs (as defined in Section 6.0 of this SM SAP) at or above 0.75 mg/kg.

8.0 RESPONSE ACTIONS

In the event of an ATLE, WDI must verbally notify the MMD/EGLE, Hazardous Waste Program Section staff immediately in accordance with the Environmental Monitoring Conditions of the Operating License and implement the procedures identified below to confirm the ATLE.

- Within 7 days of the ATLE, WDI must collect a verification sample at each soil sampling location for which an ATLE was reported. Each verification sample must be collected along the sides and bottom of the hole left by the prior sample. WDI must notify the MMD/EGLE prior to conducting verification sampling so that the MMD/EGLE can, if it chooses, split samples with WDI.

If the ATLE is not confirmed by the additional sample analysis, WDI is to resume routine monitoring. If the ATLE is repeated upon analyzing the second sample a CTLE has occurred. In the event of a CTLE, WDI must notify the EGLE in accordance with the Environmental Monitoring Conditions of the Operating License. Further, in the event of any CTLE, within 14 days of the CTLE, WDI is to collect the first phase of delineation samples to determine the extent of the areas exceeding the CTLE. Samples are to be collected and analyzed in accordance

with the requirements in Sections 5.0 and 6.0. WDI must notify the MMD/EGLE prior to conducting delineation sampling so that the MMD/EGLE can, if it chooses, split samples with WDI.

Different approaches for locating delineation samples are required to be implemented depending on whether the CTLE has occurred:

- On top of closed landfills or other open areas.
- Along linear features such as drainage ditches or interior roads.

The approach for locating delineation samples for each of these scenarios is defined below. Before immediately and automatically implementing the defined delineation approach provided below, a visual evaluation of the area is to be completed to determine if there are features in the area that suggest a preferential pattern for the PCB exceedance (e.g., visible dust patterns, erosion gullies, vegetative cover, or lack thereof, low areas, etc). If it is determined that a preferential deposition pattern is present, WDI must collect samples from those locations as appropriate. Dependent on the type and size of the feature, samples from preferential area(s) may be included as extra samples or as part of the grid sampling procedure discussed below if their locations allow. If the visual check shows no features suggesting that the PCB exceedance may be preferentially located, the following procedure is to be used to locate delineation samples.

For a CTLE on top of closed landfills or other open areas, a grid sampling strategy is to be employed as follows:

- A 100 by 100 foot grid, divided into 25 by 25 foot grid intervals, is to be centered over the CTLE location and sixteen soil samples are to be collected from the center of each 25 by 25-foot grid interval. Of the sixteen soil samples, the four step-out soil samples immediately adjacent to the CTLE location and the four corner soil samples from the 100 by 100-foot grid are to be analyzed for PCBs. The laboratory is to hold the remaining eight soil samples pending the results from the initial eight soil samples. Close communication with the laboratory will be required to ensure that initial samples are analyzed quickly so that analysis of the additional samples for delineation, if necessary, can be completed without violating the holding time requirements of the PCB analytical method. WDI may voluntarily perform additional sampling within the bounds defined by the above procedure to refine the delineated boundary of the area exceeding the threshold limit defined in Section 7.0.
- If none of the eight initially analyzed soil samples contain PCBs above the threshold level defined in Section 7.0, the horizontal extent of the exceedance is considered to be the area inside the square drawn by connecting the four sample points immediately adjacent to the CTLE location.
- If any of the eight initially analyzed samples contain PCBs above the threshold level defined in Section 7.0, WDI is to do the following:
 - Contact the laboratory and request them to conduct PCB analysis on the soil samples that were collected and held for all locations that are contiguous to the PCB exceedance.
 - Within 14 days following WDI's determination that a PCB exceedance in a response soil sample has occurred, submit a work plan, based upon a grid or transect approach, to the MMD/EGLE for review and approval to identify the

extent of the PCB contaminated area along with a schedule for completing the work.

For a CTLE along a linear feature, sampling is to occur as follows:

- For a CTLE in a drainage ditch, three samples are to be collected, one upstream and two downstream, at approximately 25 feet intervals, on each side of the CTLE (taking care to pick locations of sediment accumulation areas), assuming the linear feature extends the required length in each direction. If the linear feature does not extend the required length in either direction, sampling will occur at the largest possible interval before the end of the linear feature is encountered.
- For a CTLE along a roadway, two soil samples are to be collected by stepping out approximately 25 feet in both directions parallel to the roadway and two samples are to be collected from directly across the roadway if samples from the opposite side of the roadway area were not collected and analyzed as part of the original sampling.
- If none of the samples are above the threshold levels defined in Section 7.0, the extent of soil/sediments expected to exceed the remediation threshold of 1 ppm will be bounded by a 50-foot long area centered on the CTLE sampling location.
- If any of the samples are above the threshold levels defined in Section 7.0, WDI is to continue using the same approach, stepping out at 25-foot intervals (or the largest possible distance, whichever is less) in the direction of the linear feature to collect additional samples. This sample pattern is to be repeated until the first location is found that is below the applicable threshold level in Section 7.0 or until the linear feature terminates.

After the delineation phase has been completed by obtaining the delineation phase sampling results identifying the area of soil/sediments with CTLE(s), the analytical data will be evaluated and WDI is to submit a plan to remove soils/sediments and to determine the source(s) or expected source(s) of the PCBs to the MMD/EGLE for review and approval. The plan is to be submitted to the MMD/EGLE within 14 days of completing the delineation phase. WDI shall remove at least the top six inches of soil/sediments (WDI may voluntarily remove more) of all soils at or above 1.0 mg/kg and perform verification sampling to confirm that the underlying soils/sediments are below the applicable threshold limit identified in Section 7, and the placement of clean soils to replace the excavated soils. The plan submitted to MMD/EGLE need only include a schedule to complete the excavation, fill and verification sampling described above; a drawing that shows the delineation sampling results, the limits of the soil to be removed, and the approximate locations of the verification samples; the source of the clean fill material, except if WDI will deviate from the removing 6 inches of soil in response to the CTLE, in such case WDI shall propose the corrective measure/remedy; and the steps to be taken to identify and control the source(s) of the PCBs. The verification sample locations are to be selected in accordance with the EGLE Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria.

9.0 REPORTING REQUIREMENTS

For semi-annual reports, the final data must be received from the laboratory, evaluated, and transmitted to the MMD/EGLE within 60 days of sampling. The report is to include a narrative of the sampling event, a map showing the locations sampled, copies of the sampling logs, a tabular summary and discussion of the data, a discussion of field and laboratory QA/QC, a

description of any ATLEs or CTLEs, any resampling conducted, and any additional actions taken and/or proposed because of the report findings.

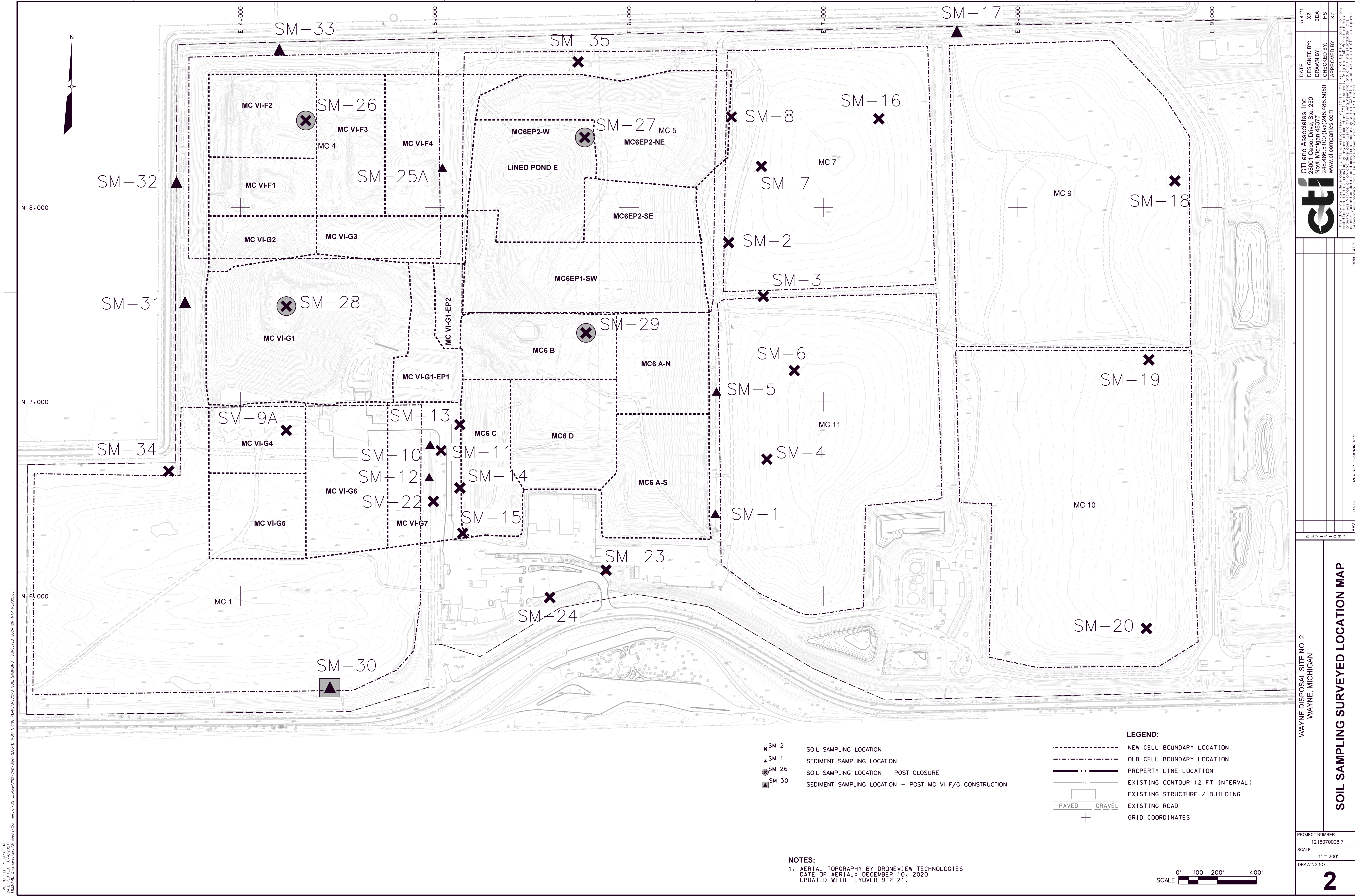
If a CTLE occurs, the data associated with the delineation phase, collected in accordance with Section 8.0, is to be received from the laboratory, evaluated, and transmitted to the MMD/EGLE within 45 days of the final sampling. The report is to include a narrative of the delineation sampling, copies of the sampling logs, a summary and discussion of the data, a drawing showing the delineation boundary, a schedule to perform soil removal (or an alternate plan, with schedule, in the event WDI proposes a remedy other than soil removal) and the steps to be taken to identify and control the source(s) of the PCBs.

Verification sampling data, collected to confirm that all soil/sediments exceeding the applicable threshold level has been removed in accordance with Section 8.0 is to be received from the laboratory, evaluated, and transmitted to the MMD/EGLE within 45 days following completion of the final round of verification sampling. The report is to include a narrative of the verification sampling, locations of all verification samples, copies of the sampling logs, a summary and discussion of the data, a drawing showing the limits of the excavation and the locations of the verification samples.

An annual summary report of the monitoring results must be submitted to MMD/EGLE by March 1 of the following year. At a minimum, the annual report must contain a map showing all locations sampled, a tabular summary and discussion of the analytical data collected during the previous year, a description of any threshold limit exceedances (i.e., ATLE and/or CTLE), any delineation and source investigation sampling conducted because of a CTLE, and any response actions performed to eliminate the source. Additionally, WDI must evaluate the sampling locations to determine whether the existing sample locations are adequate to effectively detect potential releases and prompt timely response activities.

10.0 RECORD KEEPING REQUIREMENTS

All analytical data and annual monitoring reports generated under this SM SAP must be stored on site within the QEHS filing system and be available to EGLE staff for inspection.



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DRAWING SIZE: 24" X 36"

CTI and Associates, Inc.
2800 Capital Circle, Suite 250
Novi, Michigan 48377
248.486.5100 (fax) 248.486.5050
www.cticompanies.com

DATE: 5-4-21

DESIGNED BY: XZ

DRAWN BY: BDA

CHECKED BY: HS

APPROVED BY: XZ

PROJECT NUMBER
1218070008.7

SCALE
1" = 200'

DRAWING NO
2

WAYNE DISPOSAL SITE NO. 2
WAYNE, MICHIGAN

SOIL SAMPLING SURVEYED LOCATION MAP

REV	DATE	REVISION DESCRIPTION
1	5-4-21	ISSUED FOR PERMIT

DRN APP

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