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49350 North I-94 Service Drive, Belleville, MI 48111
P 800.592.5489 F 800.592.5329

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LAND AND CHEMICALS DIVISION
U.S. EPA - REGION 5

March 29, 2018

Cathy Stepp
Regional Administrator
United States Environmental Protection Agency, Region V
77 West Jackson Blvd.
Chicago, IL 60604

RE: Wayne Disposal Inc. (WDI), MID048090633
2018 Federal TSCA Chemical Landfill PCB Disposal Renewal

Dear Ms. Stepp,

With this letter Wayne Disposal Inc. (WDI) is submitting a written request for renewal of its chemical waste landfill approval to disposal of Polychlorinated Biphenyls issued pursuant to 40 CFR 761.75 by US Environmental Protection Agency (EPA) Region V, received on September 27, 2013.

This renewal application is being submitted in accordance with Approval Expiration Conditions of the existing TSCA PCB Permit. This application provides information required by 40 CFR § 761.75(b) and 40 CFR § 761.75(c) for other technical data required for a PCB chemical waste landfill.

Many of the requirements for the PCB Permit Renewal Application are consistent with the requirements of the RCRA Part B Permit. Accordingly, WDI's RCRA Part B Permit attachments are included as necessary to avoid duplication of regulatory efforts and still provide the specific information required by the TSCA regulations.

If you have any questions or need additional information, please contact Sylwia Scott at (734)699-6294.

Sincerely,

Kerry Durnen

Kerry Durnen
Vice President and Director of Operations

CC: Lisa Graczyk, USEPA Region V

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Wayne Disposal Inc.

49350 North I-94 Service Drive
Belleville, MI 48111

2018 PCB TSCA Renewal Application

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Introduction

Wayne Disposal Inc. (WDI) is submitting a written request for renewal of its chemical waste landfill approval to disposal of Polychlorinated Biphenyls issued pursuant to 40 CFR 761.75 by US Environmental Protection Agency (EPA) Region V, received on September 27, 2013.

This renewal application is being submitted in accordance with Approval Expiration Conditions of the existing TSCA PCB Permit. This application fulfills the requirements of 40 CFR § 761.75(b)(8)(ii) for an Operational Plan. It also provides all information required by 40 CFR § 761.75(b) and 40 CFR § 761.75(c) for other technical data required for a PCB chemical waste landfill.

Many of the requirements for the PCB Permit Renewal Application are consistent with the requirements of the RCRA Part B Permit. Accordingly, WDI's RCRA Part B Permit attachments are included as necessary to avoid duplication of regulatory efforts and still provide the specific information required by the TSCA regulations.

Location of the Landfill

[40 CFR 761.75(c)(1)(i)]

Site Owner and Operator: Wayne Disposal Inc., a Michigan Corporation
Responsible Official: Kerry Durnen, Vice President and Director of Operations, (734)699-6265
Facility Contact: Sylwia Scott, Environmental Compliance Manager, (734)699-6294
Facility Location/Mailing Address: 49350 North I-94, Service Drive, Belleville, MI
Latitude and Longitude: 42.221133, -83.5250013
Legal Boundary: See Attachment 1
Topography: See Attachment 2 and Environmental Assessment

General Facility Description

[40 CFR 761.75(c)(1)(ii), (v),and (vi)]

WDI disposes of PCB wastes in accordance with the provisions of 40 CFR Part 761 Subpart D and its Chemical Waste Landfill Approval to dispose of PCB waste originally issued on April 14, 1997 and most recently modified and extended on September 27, 2013. Additionally, this facility receives and disposes of waste under the authority of its current RCRA Hazardous Waste Permit administrated by the Michigan Department of Environmental Quality's Office of Waste Management and Radiological Protection pursuant to Part 111, Hazardous Waste Management, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451. Attachment 3 provides a list of acceptable waste types that may be received at the landfill and an estimate of the volumes anticipated.

The active chemical waste landfill (Master Cell (MC) VI) has a total approved design capacity of 22.45 million cubic yards. The cell is designed with sub-cells, designated as MC VI A-South, A-North, B, C, D, E, F and G. MC VI E, consists of four subcells designated as E-Southeast, E-Southwest, E-Northwest, and E-Northeast. WDI's 2013 modification approved an 11.73 million cubic yard expansion of subcells MC VI F and G and extended the permitted MC VI hazardous waste boundary west over the existing MC I and MC IV areas, as well as the undeveloped 20.5-acre "Woodlot" parcel between MC I and MC IV. MC VI G Phase 1 was constructed in 2013 on the "Woodlot" parcel providing 1.497 million cubic yards of capacity. The subcell began receiving waste in December 2014, and is the current active sub-cell. Construction of MC VI G Phase 2 is anticipated to occur in 2018.

Facility Permits

[40 CFR 761.75(c)(1)(viii)]

The following list describes which permits or construction approvals were received or applied for under the referenced regulations:

PERMIT	**Issuance Date**	**Expiration Date**
MI Part 111 Operating License (MI 1994 PA 451,1980)	05/04/2012	05/04/2022
TSCA PCB Chemical Landfill (40 CFR 761.75)	09/27/2013	09/27/2018
Class D Wastewater Discharge Permit NO. D-11202 South Huron Valley Utility Authority	05/30/2013	05/29/2018 (renewal submitted)
NPDES Certificate of Coverage Permit No.MI0056413	12/1/2014	10/1/2018 (renewal submitted)
Renewable Operating Permit (MDWTP/WDI/WES) Permit No. MI-ROP-M4782-2010a	Effective 9/1/2010	9/1/2015 (permit shield received)

Hydrogeological Conditions

[40 CFR 761.75(b)(3)]

Several hydrogeologic studies have been completed at WDI Site No. 2 in the course of developing the various existing landfill units at the facility. These previous studies provide information on regional geologic and hydrogeologic conditions, as well as site-specific subsurface conditions at the site. The extensive soil sampling and testing conducted during these previous studies, along with the data developed from the continuing groundwater monitoring programs at the site, provide a thorough understanding of the subsurface soil and groundwater conditions at the existing areas of WDI Site No. 2. This includes areas immediately adjacent to the proposed MC VI-F & G development area. Some of the previous studies included exploration within the areas of closed landfill cells MC I and MC VI, which will underlie portions of the proposed MC VI-F & G development.

Among the previous studies that provided geologic and/or hydrogeologic information, which was specifically considered in developing the basis for the most recent investigation are the following:

Hydrogeological Investigation, WDI Site No.2 MC VI-F and G (Woodlot) Development, NTH Consultants, Ltd., February 2011.

Storm Water Management System Evaluation, WDI Site No. 2, NTH Consultants, Ltd., April 20, 2009.

RCRA Corrective Action Plan, RFI Phase I, Environmental Monitoring Report for Wayne Disposal Site #1 Landfill and Wayne Disposal Site #2 Landfill, NTH Consultants, Ltd., July 17, 1990.

Report on Hydrogeologic Investigation, Master Cell VI, Site No. 2, NTH Consultants, Ltd., March 18, 1986.

Exposure Information Report, NTH Consultants, Ltd., August, 1985

Item IV – Groundwater Protection (Subpart F) – Hazardous Waste Management Area, 40 CFR 270.14 and 40 CFR 264.90 through 100, Wayne Disposal Landfill Site No. 2, NTH Consultants, Ltd., September 7, 1983.

Final Report of Hydrogeologic Investigation, NTH Consultants, Ltd., July 1981.

Report on Preliminary Hydrogeologic Investigation, Rawsonville Landfill Expansion, NTH Consultants, Ltd., November 5, 1980.

Note that each of these previous reports was submitted to the EPA and accepted in support of WDI Construction Permits or Operating License applications.

Section 761.75(b)(3) of 40 CFR specifies that the bottom of a TSCA landfill liner system must be at least 50 feet from the historical high water table. The current WDI TSCA Approval contains a waiver to the 50-foot rule. Section 5.2 of the 2011 NTH Hydrogeological Investigation demonstrates that the geology of area beneath Cells VI F & G is also underlain by the low permeability clay and that at least 10 feet of this material is present or will remain present beneath the proposed landfill cells. Furthermore, much of the future liner system of Cells VI F & G will be constructed on top of existing closed landfills (MC I and MC IV).

Environmental Assessment

[40 CFR 761.75(c)(1)(ii) and 40 CFR 761.75(b)(4) and (5)]

An environmental assessment was prepared and submitted and approved as part of previous license applications. The previous report, titled *Environmental Assessment, Solidification of Sludge Wastes, Van Buren Township, Wayne County, Michigan*, was originally prepared by Environmental Research Group, Inc. (ERG), and most recently revised in December of 2004 (Revision #4). WDI's 2012 permit application's environmental assessment described current environmental conditions and potential impacts of the development of Master Cell VI-F&G. Regional environmental conditions and most internal features of the WDI Site No. 2 facility have not changed materially since the previous environmental assessment report was prepared. The content of these reports includes information regarding the environmental geography (topography, local land use,100-year floodplain information, etc.), and geological information (geologic history, soil classification, etc.).

Note that each of these previous reports was submitted to the EPA and accepted in support of WDI Construction Permits or Operating License applications.

Engineering Design

[40 CFR 761.75(c)(1)(iii) and 40 CF 761.75(b)(1),(2), and (7)]

WDI and EPA are discussing enhancing the landfill liner design in order to include geosynthetic clay liner (GCL) as an alternative to the already approved compacted clay liner (CCL). Once technical discussions are completed a final engineering design will be submitted to EPA no later than May 15, 2018.

Environmental Sampling and Monitoring

(40 CFR 761.75(b)(8))

WDI conducts an extensive environmental monitoring program in accordance with the facility's Operating License and TSCA approval. The program incorporates sampling and analysis required by 40 CFR 761.75 (6) and (7) analyzing ground water, surface water and leachate for PCBs, pH, specific conductance, and chlorinated solvents. In addition to monitoring as specified by TSCA requirements WDI's TSCA permit incorporated provisions which require monitoring of its sedimentation basins, soil, leak detection system and ambient air.

The following sampling and analysis places are included as attachments:

- Groundwater—Attachment 4

  WDI conducts Groundwater Monitoring as provided the Hazardous Waste Management Facility Operating License, and detailed in the Groundwater Monitoring Program Sampling and Analysis Plan of the Operating License. All of the wells at WDI are secured with a lockable protective cover that prevents entrance of rainfall or run-off. In addition, as described in the attachment, each well is equipped with a dedicated pump assembly that also has a cover affixed to the top of the riser pipe. The protective casing, the area surrounding the well and the dedicated sampling equipment are all inspected each quarterly sampling event. Groundwater purged from monitoring wells has been tested quarterly for over 30 years and has never exceeded Federal or State discharge standards. In the event that analytical results show otherwise, WDI will collect purge will be taken to the wastewater pre-treatment plant on site.

  The following groundwater wells are approved to monitor the Upper Aquifer around Master Cell VI for PCBs, pursuant to the requirements in 40 C.F.R. § 761.75(b)(6):

  - OB-21, OB-23R, OB-24, OB-34R, OB-40R, OB-48, OB-49, OB-50, OB-51, OB-52 and OB-53

  As required by 40 C.F.R. § 761.75(b)(6)(iii) (*Water analysis*), samples from the above groundwater monitoring wells are be analyzed for the following parameters:

  - PCBs, pH, Specific conductance and Chlorinated organics

- Surface Water—Attachment 5

  WDI conducts Surface Water Monitoring, as provided in the Hazardous Waste Management Facility Operating License, and detailed in the Surface Water Monitoring

Program Sampling and Analysis Plan of the Operating License. The facility maintains a storm water system capable of sustain a 24-hour, 25 year storm. Active waste handling areas outside the landfill are paved with curbing and have either blind sumps or sewer pipes leading into the lined pond. Storm water generated on active landfill cells is contained within the cell and is removed as leachate or contact water, and transferred via pipelines to the on-site waste water pretreatment site. Storm water generated on closed landfills, unpaved areas and a few paved areas not used for waste handling operations is collected by a system of open ditches and culverts that flow to one of the three sedimentation basins. All closed landfill cells, ditches and open areas are maintained in order to be appropriately vegetated to stabilize the soils and minimize erosion.

WDI has two discharge permits; 1) a wastewater discharge permit for the pre-treatment plant, and 2) an NPDES storm water discharge permit for surface water. Both have a discharge standard of non-detect for PCBs, with the detection limit required to be <0.0001 mg/l or less. The wastewater discharge permit covers water generated as landfill leachate and storm water that falls on paved areas. All of this water is pretreated to meet discharge limits in the pretreatment plant that includes a membrane-bioreactor, metals precipitation, ultrafiltration and activated carbon for the various waste streams. The storm water that falls on unpaved areas (mostly closed landfill cells) is routed via ditches and culverts to one of two on-site sedimentation basins. All of this water is treated by sedimentation and then bag filtration followed by activated carbon prior to discharge to SS-3 per the NPDES Permit. Under the NPDES permit, the water is tested weekly for PCBs (assuming there is discharge) as influent to the carbon process, at the mid-point between the two in-series carbon vessels and as effluent to SS-3.

Surface water grab samples are collected from the following locations, every quarter following a significant rain event, pursuant to the requirements in 40 C.F.R. § 761.75(b)(6):

- SS-1, SS-2, SS-5, SS-6, SS-7, SS-8, SS-9 and SS-10

In addition, WDI collects a monthly sample from SS-3, which is the effluent of the activated carbon treatment system that precedes the discharge of surface water off-site per NPDES Permit Number MI0056413, issued by MDEQ. As required by 40 C.F.R. § 761.75(b)(6)(iii) (*Water analysis*), samples from the above groundwater monitoring wells are be analyzed for the following parameters:

- PCBs, pH, Specific conductance and Chlorinated organics

- Leachate—Attachment 6

WDI conducts Leachate Monitoring as provided in the Hazardous Waste Management Facility Operating License and detailed the Leachate Monitoring Program Sampling and Analysis Plan of the Operating License. Each leachate collection sump at the WDI Landfill is measured and inspected weekly. Leachate production volumes from each of the leachate collection sumps is determined monthly and each of the leachate collection sumps must be sampled and analyzed annually, pursuant to the requirements in 40 C.F.R. § 761.75(b)(7) (*Leachate collection*).

Analysis of the samples from each leachate collection sump in Master Cell VI of the WDI Landfill must comply with the requirements of 40 C.F.R. § 761.75(b)(6)(iii) (*Water analysis*) and include the following parameters:

- PCBs, pH, Specific conductance and Chlorinated organics

In addition, pursuant to the monthly testing requirements of 40 C.F.R. § 761.75(b)(7) (*Leachate collection*), each month WDI collects a composite sample representing leachate from the Primary Leachate Collection System in Master Cell VI before treatment (by sampling the combined force main pipe leading into the water treatment plant).

- Sedimentation Basin—Attachment 7

  Although not required by 40 C.F.R. § 761.75, WDI conducts annual sediment basin monitoring for the North, Northwest and South Sediment Basins at the WDI Landfill, as provided in the Hazardous Waste Management Facility Operating License, and detailed in Sediment Basin Monitoring Program Sampling and Analysis Plan of the Operating License. A composite sample from each sedimentation basin is analyzed for PCBs.

- Soil –Attachment 8

  Although not required by 40 C.F.R. § 761.75, WDI conducts Soil Monitoring for PCBs as provided in the Hazardous Waste Management Facility Operating License, and detailed in the Soil Monitoring Program Sampling and Analysis Plan of the Operating License.

- Leak Detection—Attachment 9

  Although not required by 40 C.F.R. § 761.75, WDI conducts Leak Detection System Monitoring, as provided in Part V.F. (Leak Detection System Monitoring Program) of the Hazardous Waste Management Facility Operating License and detailed in Attachment 14 (Leak Detection Monitoring Program Sampling and Analysis Plan) of the Operating License. As provided in Part V.F. and detailed in Attachment 14, each leak detection sump in Master Cell VI of the WDI Landfill must be inspected weekly; the volume of liquid withdrawn from each leak detection sump must be recorded weekly; a sample of liquid from each leak detection sump must be subjected to a field analysis monthly; and each leak detection sump must be sampled, and the samples subjected to a full laboratory analysis, quarterly for the parameters listed in Attachment 14 of the Operating License, including:

  - PCBs, pH, Specific conductance and Chlorinated organics

- Ambient Air—Attachment 10

  Although not required by 40 C.F.R. § 761.75, WDI conducts Ambient Air Monitoring as provided in the Hazardous Waste Management Facility Operating License, and detailed in the Ambient Air Monitoring Program of the Operating License. Sample sites around the perimeter of WDI Landfill must be sampled for PCBs utilizing the USEPA's 1/12 day schedule. Any additional make-up samples are done on the 1/6 day schedule.

  As specified in the Ambient Air Monitoring Program, sampling and analytical methodology must use U.S. EPA Method TO-4A or TO-10A. The analytical method must achieve a minimum method detection limit of two hundredths micrograms per cubic meter (0.02 ug/m3). Twenty-four hour time weighted average perimeter monitoring using a notification level of three tenth micrograms per cubic meter (0.3 ug/m3) is acceptable.

Chemical Waste Landfill Operation

[40 CFR 761.75(b)(8)]

40 CFR 761.75(b)(8) requires information related to excavation and backfilling information for PCB waste, however this is not applicable to WDI. WDI uses ConCover180, at least 15 centimeters of clean soil or an equivalent other material approved by the DEQ as daily cover.

Preparedness, Prevention and Contingency Procedures

Wayne Disposal Inc. (WDI) has been designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of Hazardous Waste constituents to air, soil, or surface water which could threaten human health or the environment. Attachment 11 details preparedness and prevention procedures and controls present at the facility.

The actions to be taken in an emergency are outlined in the facility Contingency Plan found in Attachment 12. It is designed to establish the necessary planned procedures to be followed in the event of an emergency situation at the WDI, such as a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to the air, soil, or water. The plan is a part of the overall effort at the facility to predict, prevent, and properly respond to incidents.

Chemical and Physical Waste Acceptance

Attachment 13 Chemical and Physical Waste Analysis Plan (WAP) details the process in which all waste is pre-approved, pre-accepted, and accepted by qualified personnel. The WAP is a shared document between WDI and Michigan Disposal Waste Treatment Plant (MDWTP) (a separately permitted waste treatment facility located on the same property).

In addition to PCB TSCA regulated waste that can be disposed of in a chemical waste landfill as specified by 40 CFR 761.60, WDI accepts solid waste as defined by 40 CFR 261.2, including hazardous waste identified in Attachment C. PCB waste is placed in the landfill in a manner that wil prevent damage to the containers or articles. Waste that is not chemically compatible with PCBs is segregated from the PCBs throughout the handling and disposal process. The following waste types are **NOT ACCEPTABLE** for disposal at WDI:

- Waste prohibited from land disposal as defined by 40 CFR 268, Subpart C, will not be disposed of at WDI.
- Ignitable wastes as described in R299.9212(1);
- Reactive wastes as described in R299.9212(3) unless the waste no longer exhibits the characteristic of reactivity;
- Bulk or non-containerized liquid waste or waste containing free liquids including PCB liquids;
- Wastes which will:
    - Adversely affect the permeability of the clay liner;
    - Produce a leachate that is incompatible with the synthetic liner, leachate collection system (LCS), discharge piping, and the off-site sewer system;
    - Generate gases which will adversely affect the permeability of the clay cap; and
    - Create a violation of 1975 PA 348 and rules promulgated thereunder

WDI does not accept TSCA waste that fails the RCRA paint filter test for reasons other than incidental liquids (such as precipitation, condensation, leachate or load separation associated with PCB Articles or non-liquid PCB wastes.). Records of receipt are created for all PCB waste and PCB articles accepted at the site and includes information about the PCB waste and a scan of the manifest. Burial coordinates for all PCB wastes are surveyed daily and plotted on a map showing three dimensional burial coordinates.

Security

WDI maintains a secure facility in order to prevent unknowing entry and minimize the possibility for the unauthorized entry onto the active portion of the facility.

The entire site is surrounded by 6ft fencing with two strands of barbed wire and warning signs meeting the specification of 40 CFR 264.14(c), in order to provide an artificial barrier around the facility. At each entrance of the active portion of the facility and at other locations in sufficient numbers to be seen from any approach to the active portion, signs legible from a distance of at least 25 feet are posted indicating only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous. Additional signs communicating directions to unfamiliar guests and drivers are also posted at the facility entrance of the facility.

Unless in use, all access gates are closed and locked. If in use, an open gate is monitored by and attendant or television monitor to ensure unauthorized personnel do not enter the facility.

Vehicle and Equipment Movement

Inbound Vehicles

All waste transport companies which frequently use the facilities receive a written notification that:

1. Wastes shipped to the facility must be placed into closed containers or covered during transportation. The structural integrity of the waste containers must prevent leakage while in transit.
2. All vehicles transporting hazardous waste to or from the facility shall use Rawsonville Road to enter and exit the facility.
3. Vehicles transporting hazardous waste to or from the facility shall not park or stand on the I-94 Service Drive and
4. Following sampling at the facility, the trailer shall be closed/retarped; and shall remain closed while waiting to empty.

Vehicles enter the WDI facility through the main entrance area located at 49350 N. I-94 Service Drive, Belleville, pass the security guard at the gate and approach the Receiving Building by a path up the middle of a large paved apron. The main entrance of Site 2 is clearly marked with an identification sign and there are signs, which instruct vehicle drivers how to proceed safely along the waste delivery corridor. Further verbal directions are provided to the driver at the Receiving Building when their paperwork is reviewed. A standard "Stop" sign is posted at the exit to the N. I-94 Service Drive.

Once on site all vehicles must stop at the Receiving Building for processing of manifests, other shipping documents. Trucks transporting waste entering the facility are checked to ensure that they have arrived at the correct facility and that the waste represented on the manifest has an active pre-approval. In accordance with the procedures designated in the WAP containers are visually inspected and screened according and waste is either deemed acceptable or rejected. Unless special circumstances require otherwise, each bulk waste vehicle continues along this central corridor onto the vehicle scales for weigh-in. Bulk loads are inspected and sampled at this point whereas drums and containers must be unloaded at the destined location for inspection and sampling. Drivers are instructed to ensure the cover/tarp is then replaced to secure the load during the rest of the time that the bulk waste vehicle waits to be emptied. After pre-acceptance inspection indicates that the shipment may be accepted, vehicles waiting to be offloaded may be staged on-site.

When operations are ready to unload the waste, the vehicle driver is instructed to proceed via the internal roadway system to the appropriate waste unloading area. Drivers are directed to offload their shipment to:

1. The MDWTP East Treatment Building or West Treatment Building
2. The MDWTP Truck Dock
3. The WDI dump box for loads designated to WDI
4. Directly into the active face of the WDI landfill

Non- bulk containers are off-loaded using fork-trucks or other container/drum handling equipment and are transported to the active face of the landfill for disposal. Bulk containers are primarily off-loaded into the waste transfer tank in order to reduce migration of PCBs from the active waste handling areas from vehicles exiting the landfill. Vehicles and equipment designated to the landfill operation move the waste from the transfer tank to a vehicle that transports the waste to the active face of the landfill.

Outbound Traffic

All empty bulk waste transporting vehicles will proceed through the wheel wash. Bulk waste vehicles then proceed to the outbound scales. The driver finalizes recordkeeping at the Receiving Building and then exits Site 2 through the main gate. On-site transfer of hazardous solidified treatment residuals from MDWTP to WDI are routed north along the road immediately west of Master Cell VI (MC VI) to the unloading platform in the corner of MC VI.

Vehicle Cleaning Procedures

Bulk waste delivery vehicles are decontaminated through the wheel wash prior to exiting the facility. All vehicles and equipment that enter the active face of the landfill are decontaminated before exiting the active area of the landfill.

General Inspection Schedule

Operations inspections performed at WDI are completed as specified in Attachment 14. WDI is inspected for malfunctions and deterioration, operator errors, and discharges that may be cause a release of hazardous waste constituents into the environment or a threat to human health. Inspections have been developed for the following items in order to identify problems in time to correct them before they harm human health or the environment:

- Monitoring equipment
- Safety and emergency equipment
- Security devices; and
- Operating and structural equipment important to preventing, detecting, or responding to environmental or human health hazards.

The WDI conducts inspections often enough to identify problems in time to correct them before they harm human health or the environment.

Personnel Training

Facility personnel successfully complete a program of instruction and on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance. Training includes both introductory and ongoing training on a wide variety of health and safety, emergency and operational modules. Attachment 15 outlines WDI's training program.

Closure and Post-Closure Plan

Though note specifically required by 40 CFR 761.75(c), WDI has included its Closure and Post-Closure Care Plans.

Recordkeeping Requirements

[40 CFR 761.180]

WDI maintains a comprehensive recordkeeping program as required by 40 CFR Part 761.180 (b), (d), and (f) and 761.75 (b) (8) (iv). The recordkeeping system performs the following functions:

- Records on the disposition of all PCBs and PCB items via burial coordinates
- Water analysis obtained in compliance with § 761.75(b)(6)(iii) including:
    - Groundwater analysis
    - Surface water analysis
    - Leachate analysis
- The annual record includes:
    - Signed manifests generated or received at the facility during the calendar year.
    - Certificates of Disposal generated by or received at the landfill for the calendar year
    - All records of inspection and cleanups at the landfill for the calendar year
- Annual document log is prepared by WDI and submitted by July 1 each year and consists of the following information required by 40 CFR 761.180(b)(2):
    - WDI's name, address, phone number and EPA identification number

    - The unique manifest number of every manifest received at the landfill during the calendar year
        - Generators name for each shipment of waste
        - The quantity of PCB waste disposed of expressed in cubic yards of waste and kilograms of PCB waste
        - Serial number (if available) or other means of identifying each PCB Article and weight of the PCB Article in kilograms
        - A unique number identifying each PCB Container, a description of the contents of each PCB container.
        - A unique number identifying each PCB Article Container, a description of the contents of each PCB Article Container
        - The first Date the PCBs, PCB articles, and PCB items were removed from service for disposal
        - The date the PCB waste was placed in the landfill
- Additional information that must be included in the annual document log as required by the existing permit includes
    - The quantity and PCB concentration of leachate produced by MC VI with PCB concentration of 1ppm or greater
    - Disposal destination of all PCB leachate produced from MC VI with PCB concentration

As required by 40 CFR 761.180(b),(d) and (f) the following is maintained by WDI for at least 20 years after MC VI no longer is used for the disposal of PCB Waste:

- Annual Records
- Annual Document Logs
- All water analysis obtained under WDI's TSCA license and the applicable TSCA regulations
- Operations records including burial coordinates of wastes
- Documents, correspondence and data provided by WDI to the State and local government agencies pertaining to the disposal of PCB waste at WDI.
- All applications and related correspondence sent from WDI to governmental agencies regarding specified permits for the WDI landfill.

Reporting Requirements

[40 CFR 761.180]

Annual Report

As specified by 40 CFR 761.180(b)(3) WDI submits an annual report by July 15 of each year for the previous calendar year which includes the following from the previous calendar year which summarized the annual disposal log records and annual records and the following as specified by the regulation:

- Name, address and WDI's EPA Identification number (MID048090633)

- A list of the numbers of all signed manifests of PCB waste initiated or received by WDI
- The total weight in kilograms of bulk PCB waste, transformers, capacitors, articles and containers disposed of during the calendar year categorized by each waste type.
- The total number of PCB transformers, capacitors, articles and containers disposed of during the calendar year categorized by each waste type.

WDI only disposes of PCB waste and as a result the facility does not report any storage information required by the regulation.

In addition to the information required by the regulation the following information is submitted in the annual report as required by WDI's TSCA permit:

- Sampling locations for environmental monitoring samples collected as required by the TSCA permit
- Graphical time plot of all analytical data from groundwater quality sampling
- Piezometric surface elevation contour maps and all cross sections for each quarter showing MC VI flow paths and flow rates
- Graphical time plot of all leachate/water analytical data produced from the MC VI leachate collection system and leak detection system.
- A summary of the final PCB concentration of each batch of leachate water treated
- Graphical comparison between the leachate quantity pumped/generated during the reported year and the leachate quantities pumped generated from previous years together with the concentration, treatment method, and disposition of leachate greater than or equal to 1ppm of PCBs as pumped from the cell.
- A summary of the number of cubic yards and kilograms of PCB waste disposed of
- Graphical time plot of analysis of all TSCA surface water, sediment and air monitoring results.

Quarterly Report

WDI is obligated by permit to submit a Quarterly Report within 60 days following the end of each calendar quarter that contains information specific to the quarter. The report summarizes much of the information that is required by rule and permit to be submitted annually. Information required to be submitted includes:

- All water elevation data, water table maps for the monitored aquifer and a north-south cross section showing the landfill, the water and water elevations
- Volume of liquid and analytical results from the MC VI leachate collection system and leak detection system.
- A tabular summary of all analytical results of groundwater sampling and analysis
- A summary of the number of cubic yards and kilograms of PCB waste disposed of

Wayne Disposal Inc.
2018 TSCA Permit Renewal

Attachment 1
Site Location

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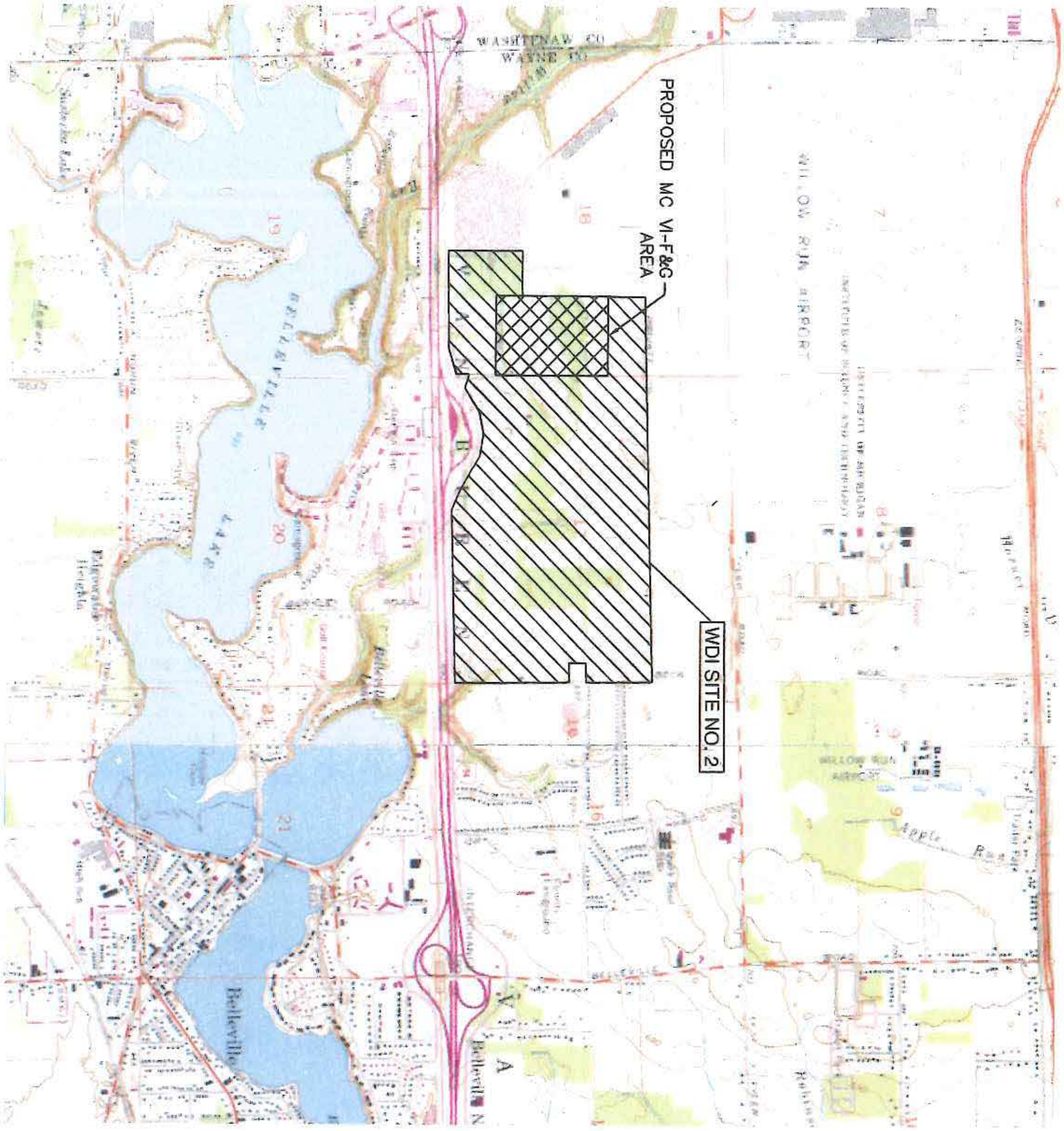
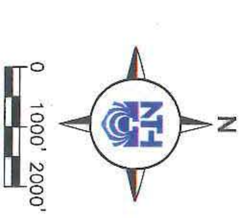
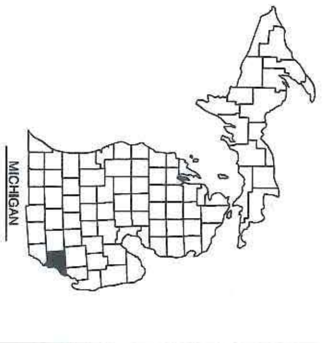


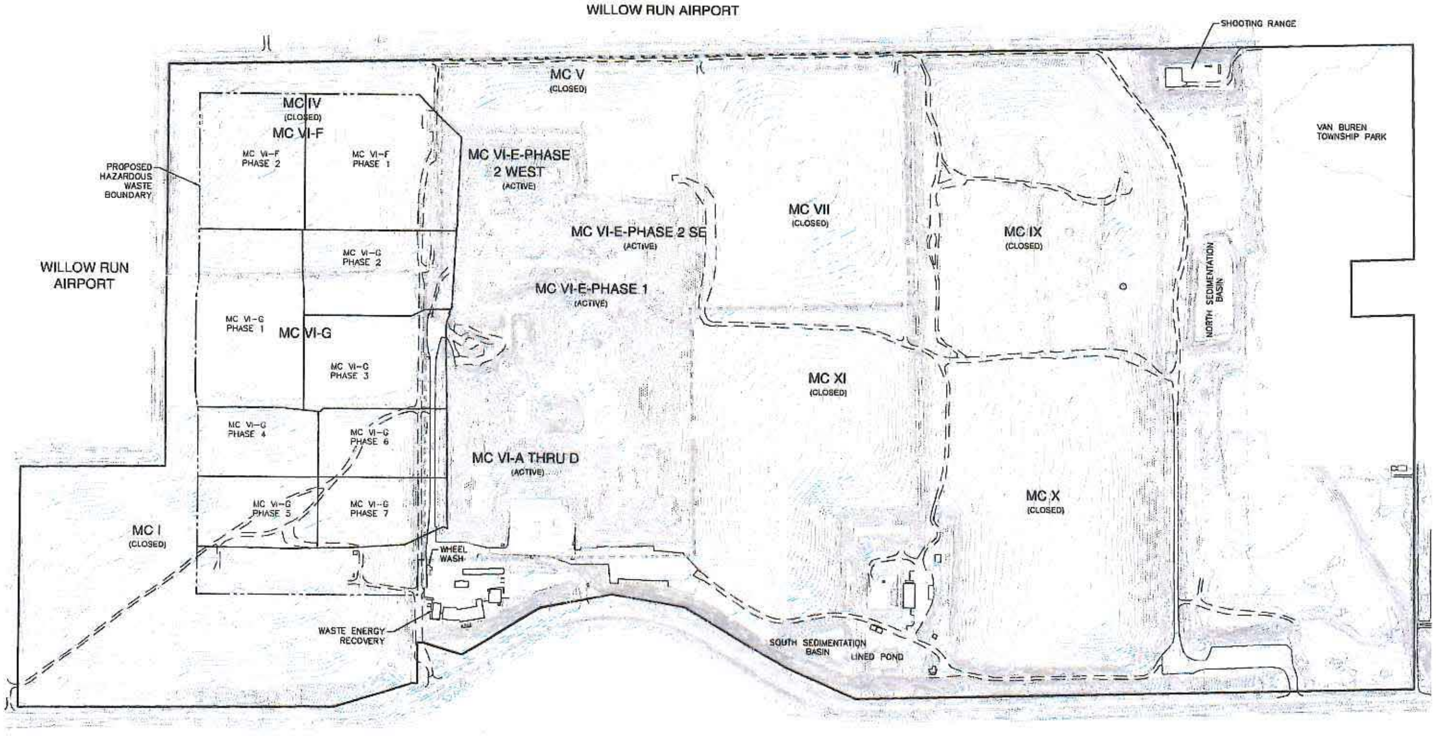




NOTE:

1. BASE MAP TAKEN FROM U.S.G.S YPSILANTI EAST AND BELLEVILLE MICHIGAN QUADRANGLES (1983).
2. ORIGINAL FIGURE INCLUDES COLOR GRAPHICS WHICH SHOULD NOT BE OMITTED IN REPRODUCTION

FIGURE: 1	SITE LOCATION MAP WAYNE DISPOSAL, INC. SITE NO. 2 - MC VI F&G VAN BUREN TWP., WAYNE COUNTY, MICHIGAN	NTH PROJECT No.: 62080376 DESIGNED BY: DLP DRAWN BY: RMLII CHECKED BY: DLP	CAD FILE NAME: 62080376-SLM PLOT DATE: 2/3/2011 DRAWING SCALE: AS SHOWN INCEPTION DATE: 02/16/09	**NTH Consultants, Ltd.** Infrastructure Engineering and Environmental Services



NOTE:

THE BASE MAP WAS CREATED USING AN AERIAL SURVEY TAKEN IN 2001 BY AIR-LAND SURVEY, AND PROVIDED BY WDI, A SURVEY BY MCLLC IN OCTOBER 2007 AND A GROUND SURVEY BY WDI IN OCTOBER 2008.

N

0 150' 300' 600'
SCALE

LEGEND

	EXISTING CONTOUR (2 FT INTERVAL)
— — — —	EXISTING SITE ROAD
━━━━	PROPERTY BOUNDARY
────	PHASE BOUNDARY
—— - - ——	PROPOSED HAZARDOUS WASTE BOUNDARY
- - - - - -	EXISTING HAZARDOUS WASTE BOUNDARY

NTH Consultants, Ltd.

Infrastructure Engineering and
Environmental Services

Farmington Hills, MI	248.553.6300
Detroit, MI	313.237.3900
Lansing, MI	517.484.6900
Grand Rapids, MI	616.957.3650
Exton, PA	610.524.2300
Philadelphia, PA	215.854.6359
Lehigh Valley, PA	484.693.1440
Cleveland, OH	216.334.4040
Indianapolis, IN	317.735.7649

REVISIONS

REV	DESCRIPTION	DATE	BY

PROJECT NAME:
WAYNE DISPOSAL, INC.
SITE NO. 2 - MC VI F&G
(WOODLOT)
DEVELOPMENT

PROJECT LOCATION:
VAN BUREN TWP., WAYNE COUNTY, MICHIGAN

NTH PROJECT NO.: 62080376	CAD FILE NAME: 62080376-FP
DESIGNED BY: DLP	INCEP DATE: 02/10/09
DRAWN BY: KRO	DRAWING SCALE: AS SHOWN
CHECKED BY: DLP	SUBMITTED DATE: 09/17/09

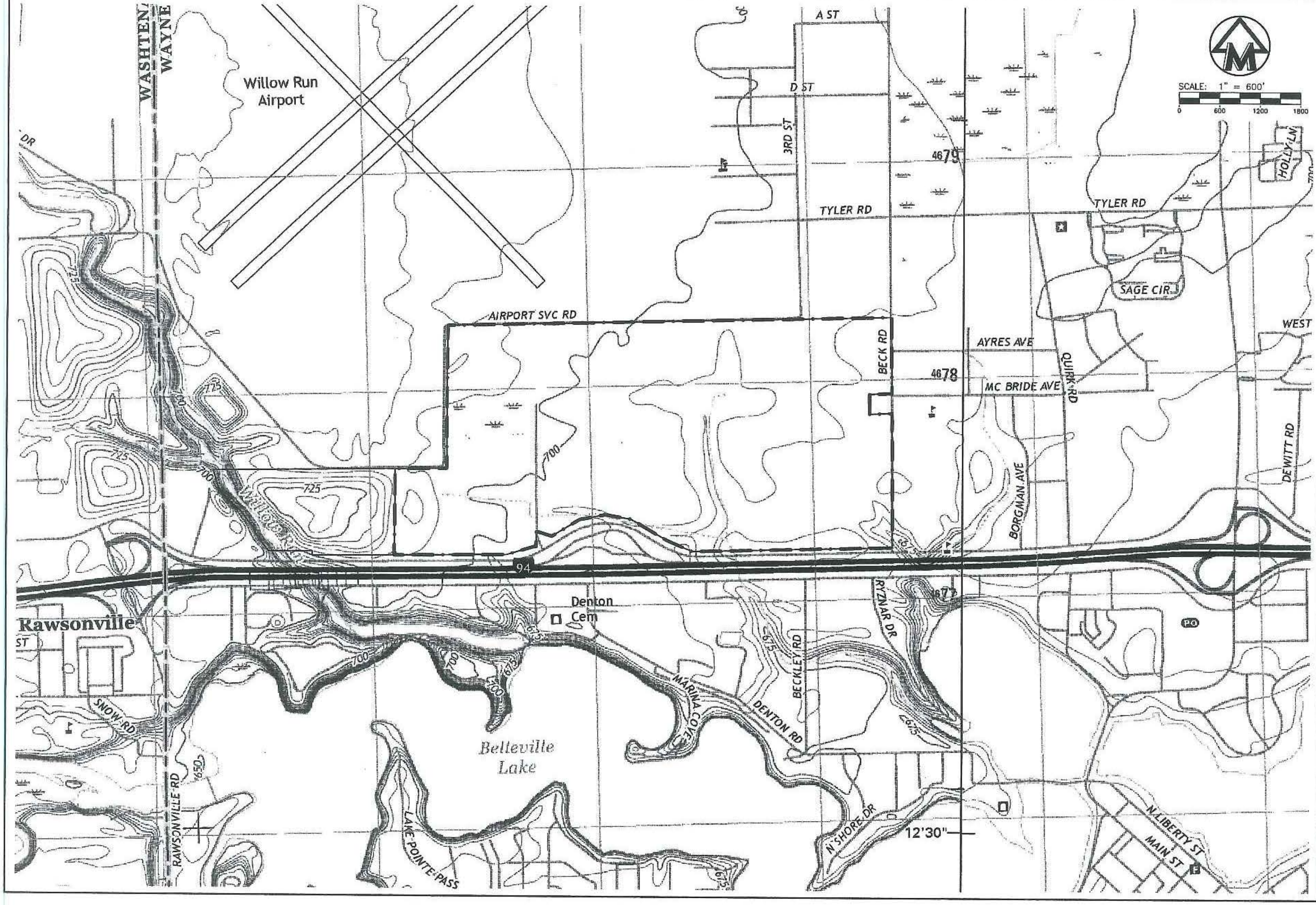
SHEET TITLE:
WDI FACILITY MAP

FIGURE
2

J:\62\62080376\Reports\Env\HR\62080376-FP.dwg Plotted: 2/3/2011 2:49 PM by Kostrowski

Wayne Disposal Inc.
2018 TSCA Permit Renewal

Attachment 2
Topography



SITE 2

2017 AERIAL MAPPING PERMIT

1

PROJ. FILE

FILENAME: OUTER STORM

DATE: 6/2/17

SCALE: 1"=500'

SHEET 1 OF 1

DRN BY: DAG

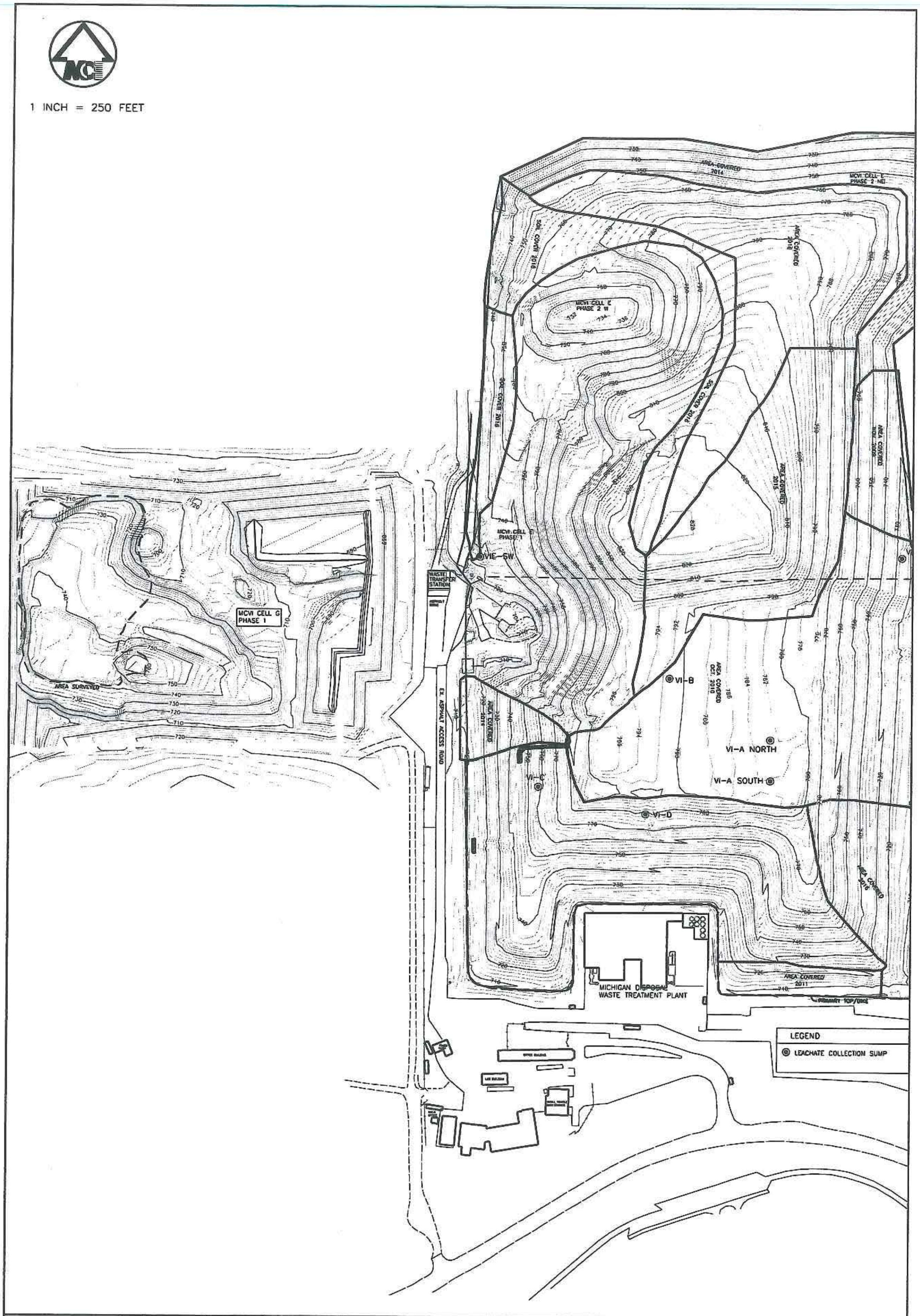
REVISIONS

A
B
C
D
E

US ecology

49350 N. I-94 SERVICE DRIVE, BELLEVILLE, MI 48111
TEL (800) 592-5489

R:\07174\DATA\Aerial Mapping for Permit 2017\2017 Aerial Mapping Permit.dwg, 01, 6/2/2017 3:49:55 PM, dwg, 01-Size-KP.pd



JOB No. **04358**		DATE: 1/5/18
REVISIONS:	REV. DATE	SHEET 1 OF 1
		CADD:
		ENG: JCS
		PM:
		TECH:
		1-3-18-AS
		FBB:

WAYNE DISPOSAL SITE NO. 2

MASTER CELL VI
TOPOGRAPHY JANUARY 3, 2018

CLIENT
WAYNE DISPOSAL
36255 MI. AVE
WAYNE, MI. 48184

MIDWESTERN CONSULTING

Civil, Environmental and Transportation Engineers
Planners, Surveyors
Landscape Architects

3815 Plaza Drive
Ann Arbor, Michigan 48108
Phone: 734.995.0200
Fax 734.995.0599

Wayne Disposal Inc.
2018 TSCA Permit Renewal

Attachment 3
Acceptable Waste Types

Description of Acceptable Hazardous Wastes
Wayne Disposal, Inc., Site # 2
MID 048 090 633

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
1	D001[R]	2000000	Y	D80		
2	D002	2000000	Y	D80		
3	D003[R]	2000000	Y	D80		
4	D004	2000000	Y	D80		
5	D005	2000000	Y	D80		
6	D006	2000000	Y	D80		
7	D007	2000000	Y	D80		
8	D008	2000000	Y	D80		
9	D009	2000000	Y	D80		
10	D010	2000000	Y	D80		
11	D011	2000000	Y	D80		
12	D012	2000000	Y	D80		
13	D013	2000000	Y	D80		
14	D014	2000000	Y	D80		
15	D015	2000000	Y	D80		
16	D016	2000000	Y	D80		
17	D017	2000000	Y	D80		
18	D018	2000000	Y	D80		
19	D019	2000000	Y	D80		
20	D020	2000000	Y	D80		
21	D021	2000000	Y	D80		
22	D022	2000000	Y	D80		
23	D023	2000000	Y	D80		
24	D024	2000000	Y	D80		
25	D025	2000000	Y	D80		
26	D026	2000000	Y	D80		
27	D027	2000000	Y	D80		
28	D028	2000000	Y	D80		
29	D029	2000000	Y	D80		
30	D030	2000000	Y	D80		
31	D031	2000000	Y	D80		
32	D032	2000000	Y	D80		
33	D033	2000000	Y	D80		
34	D034	2000000	Y	D80		
35	D035	2000000	Y	D80		
36	D036	2000000	Y	D80		
37	D037	2000000	Y	D80		
38	D038	2000000	Y	D80		
39	D039[R]	2000000	Y	D80		
40	D040	2000000	Y	D80		
41	D041	2000000	Y	D80		
42	D042	2000000	Y	D80		
43	D043	2000000	Y	D80		
44	F001	2000000	Y	D80		
45	F002	2000000	Y	D80		
46	F003	2000000	Y	D80		
47	F004	2000000	Y	D80		
48	F005	2000000	Y	D80		
49	F006	2000000	Y	D80		
50	F007	2000000	Y	D80		
51	F008	2000000	Y	D80		
52	F009	2000000	Y	D80		

[R] Reacted

Description of Acceptable Hazardous Wastes
Wayne Disposal, Inc., Site # 2
MID 048 090 633

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
53	F010	2000000	Y	D80		
54	F011	2000000	Y	D80		
55	F012	2000000	Y	D80		
56	F019	2000000	Y	D80		
57	F020	2000000	Y	D80		
58	F021	2000000	Y	D80		
59	F022	2000000	Y	D80		
60	F023	2000000	Y	D80		
61	F024	2000000	Y	D80		
62	F025	2000000	Y	D80		
63	F026	2000000	Y	D80		
64	F027	2000000	Y	D80		
65	F028	2000000	Y	D80		
66	F032	2000000	Y	D80		
67	F034	2000000	Y	D80		
68	F035	2000000	Y	D80		
69	F037	2000000	Y	D80		
70	F038	2000000	Y	D80		
71	F039	2000000	Y	D80		
72	K001	2000000	Y	D80		
73	K002	2000000	Y	D80		
74	K003	2000000	Y	D80		
75	K004	2000000	Y	D80		
76	K005	2000000	Y	D80		
77	K006	2000000	Y	D80		
78	K007	2000000	Y	D80		
79	K008	2000000	Y	D80		
80	K009	2000000	Y	D80		
81	K010	2000000	Y	D80		
82	K011	2000000	Y	D80		
83	K013	2000000	Y	D80		
84	K014	2000000	Y	D80		
85	K015	2000000	Y	D80		
86	K016	2000000	Y	D80		
87	K017	2000000	Y	D80		
88	K018	2000000	Y	D80		
89	K019	2000000	Y	D80		
90	K020	2000000	Y	D80		
91	K021	2000000	Y	D80		
92	K022	2000000	Y	D80		
93	K023	2000000	Y	D80		
94	K024	2000000	Y	D80		
95	K025	2000000	Y	D80		
96	K026	2000000	Y	D80		
97	K027[R]	2000000	Y	D80		
98	K028	2000000	Y	D80		
99	K029	2000000	Y	D80		
100	K030	2000000	Y	D80		
101	K031	2000000	Y	D80		
102	K032	2000000	Y	D80		
103	K033	2000000	Y	D80		
104	K034	2000000	Y	D80		

[R] Reacted

Description of Acceptable Hazardous Wastes
Wayne Disposal, Inc., Site # 2
MID 048 090 633

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
105	K035	2000000	Y	D80		
106	K036	2000000	Y	D80		
107	K037	2000000	Y	D80		
108	K038	2000000	Y	D80		
109	K039	2000000	Y	D80		
110	K040	2000000	Y	D80		
111	K041	2000000	Y	D80		
112	K042	2000000	Y	D80		
113	K043	2000000	Y	D80		
114	K044^R	2000000	Y	D80		
115	K045^R	2000000	Y	D80		
116	K046	2000000	Y	D80		
117	K047^R	2000000	Y	D80		
118	K048	2000000	Y	D80		
119	K049	2000000	Y	D80		
120	K050	2000000	Y	D80		
121	K051	2000000	Y	D80		
122	K052	2000000	Y	D80		
123	K060	2000000	Y	D80		
124	K061	2000000	Y	D80		
125	K062	2000000	Y	D80		
126	K069	2000000	Y	D80		
127	K071	2000000	Y	D80		
128	K073	2000000	Y	D80		
129	K083	2000000	Y	D80		
130	K084	2000000	Y	D80		
131	K085	2000000	Y	D80		
132	K086	2000000	Y	D80		
133	K087	2000000	Y	D80		
134	K088	2000000	Y	D80		
135	K090	2000000	Y	D80		
136	K091	2000000	Y	D80		
137	K093	2000000	Y	D80		
138	K094	2000000	Y	D80		
139	K095	2000000	Y	D80		
140	K096	2000000	Y	D80		
141	K097	2000000	Y	D80		
142	K098	2000000	Y	D80		
143	K099	2000000	Y	D80		
144	K100	2000000	Y	D80		
145	K101	2000000	Y	D80		
146	K102	2000000	Y	D80		
147	K103	2000000	Y	D80		
148	K104	2000000	Y	D80		
149	K105	2000000	Y	D80		
150	K106	2000000	Y	D80		
151	K107	2000000	Y	D80		
152	K108	2000000	Y	D80		
153	K109	2000000	Y	D80		
154	K110	2000000	Y	D80		
155	K111	2000000	Y	D80		

^{R}Reacted

Description of Acceptable Hazardous Wastes
Wayne Disposal, Inc., Site # 2
MID 048 090 633

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
156	K112	2000000	Y	D80		
157	K113	2000000	Y	D80		
158	K114	2000000	Y	D80		
159	K115	2000000	Y	D80		
160	K116	2000000	Y	D80		
161	K117	2000000	Y	D80		
162	K118	2000000	Y	D80		
163	K123	2000000	Y	D80		
164	K124	2000000	Y	D80		
165	K125	2000000	Y	D80		
166	K126	2000000	Y	D80		
167	K131	2000000	Y	D80		
168	K132	2000000	Y	D80		
169	K136	2000000	Y	D80		
170	K141	2000000	Y	D80		
171	K142	2000000	Y	D80		
172	K143	2000000	Y	D80		
173	K144	2000000	Y	D80		
174	K145	2000000	Y	D80		
175	K147	2000000	Y	D80		
176	K148	2000000	Y	D80		
177	K149	2000000	Y	D80		
178	K150	2000000	Y	D80		
179	K151	2000000	Y	D80		
180	K156	2000000	Y	D80		
181	K157	2000000	Y	D80		
182	K158	2000000	Y	D80		
183	K159	2000000	Y	D80		
184	K161	2000000	Y	D80		
185	K169	2000000	Y	D80		
186	K170	2000000	Y	D80		
187	K171	2000000	Y	D80		
188	K172	2000000	Y	D80		
189	K174	2000000	Y	D80		
191	K176	2000000	Y	D80		
192	K177	2000000	Y	D80		
193	K178	2000000	Y	D80		
194	K181	2000000	Y	D80		
195	P001	2000000	Y	D80		
196	P002	2000000	Y	D80		
197	P003	2000000	Y	D80		
198	P004	2000000	Y	D80		
199	P005	2000000	Y	D80		
200	P006	2000000	Y	D80		
201	P007	2000000	Y	D80		
202	P008	2000000	Y	D80		
203	P009	2000000	Y	D80		
204	P010	2000000	Y	D80		
205	P011	2000000	Y	D80		
206	P012	2000000	Y	D80		
207	P013	2000000	Y	D80		
208	P014	2000000	Y	D80		

^{R}Reacted

Description of Acceptable Hazardous Wastes
Wayne Disposal, Inc., Site # 2
MID 048 090 633

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
209	P015	2000000	Y	D80		
210	P016	2000000	Y	D80		
211	P017	2000000	Y	D80		
212	P018	2000000	Y	D80		
213	P020	2000000	Y	D80		
214	P021	2000000	Y	D80		
215	P022	2000000	Y	D80		
216	P023	2000000	Y	D80		
217	P024	2000000	Y	D80		
218	P026	2000000	Y	D80		
219	P027	2000000	Y	D80		
220	P028	2000000	Y	D80		
221	P029	2000000	Y	D80		
222	P030	2000000	Y	D80		
223	P031	2000000	Y	D80		
224	P033	2000000	Y	D80		
225	P034	2000000	Y	D80		
226	P036	2000000	Y	D80		
227	P037	2000000	Y	D80		
228	P038	2000000	Y	D80		
229	P039	2000000	Y	D80		
230	P040	2000000	Y	D80		
231	P041	2000000	Y	D80		
232	P042	2000000	Y	D80		
233	P043	2000000	Y	D80		
234	P044	2000000	Y	D80		
235	P045	2000000	Y	D80		
236	P046	2000000	Y	D80		
237	P047	2000000	Y	D80		
238	P048	2000000	Y	D80		
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251	P065	2000000	Y	D80		
252	P066	2000000	Y	D80		
253	P067	2000000	Y	D80		
254	P068	2000000	Y	D80		
255	P069	2000000	Y	D80		
256	P070	2000000	Y	D80		
257	P071	2000000	Y	D80		
258	P072	2000000	Y	D80		
259	P073	2000000	Y	D80		
260	P074	2000000	Y	D80		

^{R}Reacted

Description of Acceptable Hazardous Wastes
Wayne Disposal, Inc., Site # 2
MID 048 090 633

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
261	P075	2000000	Y	D80		
262	P076	2000000	Y	D80		
263	P077	2000000	Y	D80		
264	P078	2000000	Y	D80		
265	P081	2000000	Y	D80		
266	P082	2000000	Y	D80		
267	P084	2000000	Y	D80		
268	P085	2000000	Y	D80		
269	P087	2000000	Y	D80		
270	P088	2000000	Y	D80		
271	P089	2000000	Y	D80		
272	P092	2000000	Y	D80		
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274	P094	2000000	Y	D80		
275	P095	2000000	Y	D80		
276	P096	2000000	Y	D80		
277	P097	2000000	Y	D80		
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279	P099	2000000	Y	D80		
280	P101	2000000	Y	D80		
281	P102	2000000	Y	D80		
282	P103	2000000	Y	D80		
283	P104	2000000	Y	D80		
284	P105	2000000	Y	D80		
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303	P185	2000000	Y	D80		
304	P188	2000000	Y	D80		
305	P189	2000000	Y	D80		
306	P190	2000000	Y	D80		
307	P191	2000000	Y	D80		
308	P192	2000000	Y	D80		
309	P194	2000000	Y	D80		
310	P196	2000000	Y	D80		
311	P197	2000000	Y	D80		
312	P198	2000000	Y	D80		

[R] Reacted

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
313	P199	2000000	Y	D80		
314	P201	2000000	Y	D80		
315	P202	2000000	Y	D80		
316	P203	2000000	Y	D80		
317	P204	2000000	Y	D80		
318	P205	2000000	Y	D80		
319	U001	2000000	Y	D80		
320	U002	2000000	Y	D80		
321	U003	2000000	Y	D80		
322	U004	2000000	Y	D80		
323	U005	2000000	Y	D80		
324	U006	2000000	Y	D80		
325	U007	2000000	Y	D80		
326	U008	2000000	Y	D80		
327	U009	2000000	Y	D80		
328	U010	2000000	Y	D80		
329	U011	2000000	Y	D80		
330	U012	2000000	Y	D80		
331	U014	2000000	Y	D80		
332	U015	2000000	Y	D80		
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334	U017	2000000	Y	D80		
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350	U033	2000000	Y	D80		
351	U034	2000000	Y	D80		
352	U035	2000000	Y	D80		
353	U036	2000000	Y	D80		
354	U037	2000000	Y	D80		
355	U038	2000000	Y	D80		
356	U039	2000000	Y	D80		
357	U041	2000000	Y	D80		
358	U042	2000000	Y	D80		
359	U043	2000000	Y	D80		
360	U044	2000000	Y	D80		
361	U045	2000000	Y	D80		
362	U046	2000000	Y	D80		
363	U047	2000000	Y	D80		
364	U048	2000000	Y	D80		

^{R}Reacted

Description of Acceptable Hazardous Wastes
Wayne Disposal, Inc., Site # 2
MID 048 090 633

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
365	U049	2000000	Y	D80		
366	U050	2000000	Y	D80		
367	U051	2000000	Y	D80		
368	U052	2000000	Y	D80		
369	U053	2000000	Y	D80		
370	U055	2000000	Y	D80		
371	U056	2000000	Y	D80		
372	U057	2000000	Y	D80		
373	U058	2000000	Y	D80		
374	U059	2000000	Y	D80		
375	U060	2000000	Y	D80		
376	U061	2000000	Y	D80		
377	U062	2000000	Y	D80		
378	U063	2000000	Y	D80		
379	U064	2000000	Y	D80		
380	U066	2000000	Y	D80		
381	U067	2000000	Y	D80		
382	U068	2000000	Y	D80		
383	U069	2000000	Y	D80		
384	U070	2000000	Y	D80		
385	U071	2000000	Y	D80		
386	U072	2000000	Y	D80		
387	U073	2000000	Y	D80		
388	U074	2000000	Y	D80		
389	U075	2000000	Y	D80		
390	U076	2000000	Y	D80		
391	U077	2000000	Y	D80		
392	U078	2000000	Y	D80		
393	U079	2000000	Y	D80		
394	U080	2000000	Y	D80		
395	U081	2000000	Y	D80		
396	U082	2000000	Y	D80		
397	U083	2000000	Y	D80		
398	U084	2000000	Y	D80		
399	U085	2000000	Y	D80		
400	U086	2000000	Y	D80		
401	U087	2000000	Y	D80		
402	U088	2000000	Y	D80		
403	U089	2000000	Y	D80		
404	U090	2000000	Y	D80		
405	U091	2000000	Y	D80		
406	U092	2000000	Y	D80		
407	U093	2000000	Y	D80		
408	U094	2000000	Y	D80		
409	U095	2000000	Y	D80		
410	U096	2000000	Y	D80		
411	U097	2000000	Y	D80		
412	U098	2000000	Y	D80		
413	U099	2000000	Y	D80		
414	U101	2000000	Y	D80		
415	U102	2000000	Y	D80		
416	U103	2000000	Y	D80		

^{R}Reacted

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
417	U105	2000000	Y	D80		
418	U106	2000000	Y	D80		
419	U107	2000000	Y	D80		
420	U108	2000000	Y	D80		
421	U109	2000000	Y	D80		
422	U110	2000000	Y	D80		
423	U111	2000000	Y	D80		
424	U112	2000000	Y	D80		
425	U113	2000000	Y	D80		
426	U114	2000000	Y	D80		
427	U115	2000000	Y	D80		
428	U116	2000000	Y	D80		
429	U117	2000000	Y	D80		
430	U118	2000000	Y	D80		
431	U119	2000000	Y	D80		
432	U120	2000000	Y	D80		
433	U121	2000000	Y	D80		
434	U122	2000000	Y	D80		
435	U123	2000000	Y	D80		
436	U124	2000000	Y	D80		
437	U125	2000000	Y	D80		
438	U126	2000000	Y	D80		
439	U127	2000000	Y	D80		
440	U128	2000000	Y	D80		
441	U129	2000000	Y	D80		
442	U130	2000000	Y	D80		
443	U131	2000000	Y	D80		
444	U132	2000000	Y	D80		
445	U133	2000000	Y	D80		
446	U134	2000000	Y	D80		
447	U135	2000000	Y	D80		
448	U136	2000000	Y	D80		
449	U137	2000000	Y	D80		
450	U138	2000000	Y	D80		
451	U140	2000000	Y	D80		
452	U141	2000000	Y	D80		
453	U142	2000000	Y	D80		
454	U143	2000000	Y	D80		
455	U144	2000000	Y	D80		
456	U145	2000000	Y	D80		
457	U146	2000000	Y	D80		
458	U147	2000000	Y	D80		
459	U148	2000000	Y	D80		
460	U149	2000000	Y	D80		
461	U150	2000000	Y	D80		
462	U151	2000000	Y	D80		
463	U152	2000000	Y	D80		
464	U153	2000000	Y	D80		
465	U154	2000000	Y	D80		
466	U155	2000000	Y	D80		
467	U156	2000000	Y	D80		
468	U157	2000000	Y	D80		

[R] Reacted

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
469	U158	2000000	Y	D80		
470	U159	2000000	Y	D80		
471	U160	2000000	Y	D80		
472	U161	2000000	Y	D80		
473	U162	2000000	Y	D80		
474	U163	2000000	Y	D80		
475	U164	2000000	Y	D80		
476	U165	2000000	Y	D80		
477	U166	2000000	Y	D80		
478	U167	2000000	Y	D80		
479	U168	2000000	Y	D80		
480	U169	2000000	Y	D80		
481	U170	2000000	Y	D80		
482	U171	2000000	Y	D80		
483	U172	2000000	Y	D80		
484	U173	2000000	Y	D80		
485	U174	2000000	Y	D80		
486	U176	2000000	Y	D80		
487	U177	2000000	Y	D80		
488	U178	2000000	Y	D80		
489	U179	2000000	Y	D80		
490	U180	2000000	Y	D80		
491	U181	2000000	Y	D80		
492	U182	2000000	Y	D80		
493	U183	2000000	Y	D80		
494	U184	2000000	Y	D80		
495	U185	2000000	Y	D80		
496	U186	2000000	Y	D80		
497	U187	2000000	Y	D80		
498	U188	2000000	Y	D80		
499	U189	2000000	Y	D80		
500	U190	2000000	Y	D80		
501	U191	2000000	Y	D80		
502	U192	2000000	Y	D80		
503	U193	2000000	Y	D80		
504	U194	2000000	Y	D80		
505	U196	2000000	Y	D80		
506	U197	2000000	Y	D80		
507	U200	2000000	Y	D80		
508	U201	2000000	Y	D80		
509	U202	2000000	Y	D80		
510	U203	2000000	Y	D80		
511	U204	2000000	Y	D80		
512	U205	2000000	Y	D80		
513	U206	2000000	Y	D80		
514	U207	2000000	Y	D80		
515	U208	2000000	Y	D80		
516	U209	2000000	Y	D80		
517	U210	2000000	Y	D80		
518	U211	2000000	Y	D80		
519	U213	2000000	Y	D80		
520	U214	2000000	Y	D80		

^{R}Reacted

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
521	U215	2000000	Y	D80		
522	U216	2000000	Y	D80		
523	U217	2000000	Y	D80		
524	U218	2000000	Y	D80		
525	U219	2000000	Y	D80		
526	U220	2000000	Y	D80		
527	U221	2000000	Y	D80		
528	U222	2000000	Y	D80		
529	U223	2000000	Y	D80		
530	U225	2000000	Y	D80		
531	U226	2000000	Y	D80		
532	U227	2000000	Y	D80		
533	U228	2000000	Y	D80		
534	U234	2000000	Y	D80		
535	U235	2000000	Y	D80		
536	U236	2000000	Y	D80		
537	U237	2000000	Y	D80		
538	U238	2000000	Y	D80		
539	U239	2000000	Y	D80		
540	U240	2000000	Y	D80		
541	U243	2000000	Y	D80		
542	U244	2000000	Y	D80		
543	U246	2000000	Y	D80		
544	U247	2000000	Y	D80		
545	U248	2000000	Y	D80		
546	U249	2000000	Y	D80		
547	U271	2000000	Y	D80		
548	U278	2000000	Y	D80		
549	U279	2000000	Y	D80		
550	U280	2000000	Y	D80		
551	U328	2000000	Y	D80		
552	U353	2000000	Y	D80		
553	U359	2000000	Y	D80		
554	U364	2000000	Y	D80		
555	U367	2000000	Y	D80		
556	U372	2000000	Y	D80		
557	U373	2000000	Y	D80		
558	U387	2000000	Y	D80		
559	U389	2000000	Y	D80		
560	U394	2000000	Y	D80		
561	U395	2000000	Y	D80		
562	U404	2000000	Y	D80		
563	U409	2000000	Y	D80		
564	U410	2000000	Y	D80		
565	U411	2000000	Y	D80		
566	001S	2000000	Y	D80		
567	002S	2000000	Y	D81		
568	003S	2000000	Y	D82		
569	004S	2000000	Y	D83		
570	005S	2000000	Y	D84		
571	006S	2000000	Y	D85		
572	007S	2000000	Y	D86		

^{R}Reacted

Description of Acceptable Hazardous Wastes
Wayne Disposal, Inc., Site # 2
MID 048 090 633

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
573	001K	2000000	Y	D80		
574	002K	2000000	Y	D80		
575	001U	2000000	Y	D80		
576	002U	2000000	Y	D80		
577	003U	2000000	Y	D80		
578	004U	2000000	Y	D80		
579	005U	2000000	Y	D80		
580	006U	2000000	Y	D80		
581	007U	2000000	Y	D80		
582	008U	2000000	Y	D80		
583	009U	2000000	Y	D80		
584	011U	2000000	Y	D80		
585	012U	2000000	Y	D80		
586	013U	2000000	Y	D80		
587	014U	2000000	Y	D80		
588	015U	2000000	Y	D80		
589	016U	2000000	Y	D80		
590	017U	2000000	Y	D80		
591	020U	2000000	Y	D80		
592	021U	2000000	Y	D80		
593	022U	2000000	Y	D80		
594	023U	2000000	Y	D80		
595	024U	2000000	Y	D80		
596	025U	2000000	Y	D80		
597	027U	2000000	Y	D80		
598	028U	2000000	Y	D80		
599	029U	2000000	Y	D80		
600	030U	2000000	Y	D80		
601	031U	2000000	Y	D80		
602	032U	2000000	Y	D80		
603	033U	2000000	Y	D80		
604	034U	2000000	Y	D80		
605	036U	2000000	Y	D80		
606	037U	2000000	Y	D80		
607	038U	2000000	Y	D80		
608	040U	2000000	Y	D80		
609	041U	2000000	Y	D80		
610	042U	2000000	Y	D80		
611	043U	2000000	Y	D80		
612	044U	2000000	Y	D80		
613	046U	2000000	Y	D80		
614	047U	2000000	Y	D80		
615	048U	2000000	Y	D80		
616	049U	2000000	Y	D80		
617	050U	2000000	Y	D80		
618	051U	2000000	Y	D80		
619	052U	2000000	Y	D80		
620	054U	2000000	Y	D80		
621	055U	2000000	Y	D80		
622	056U	2000000	Y	D80		
623	057U	2000000	Y	D80		
624	058U	2000000	Y	D80		

^{R}Reacted

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
625	059U	2000000	Y	D80		
626	061U	2000000	Y	D80		
627	063U	2000000	Y	D80		
628	064U	2000000	Y	D80		
629	065U	2000000	Y	D80		
630	068U	2000000	Y	D80		
631	070U	2000000	Y	D80		
632	071U	2000000	Y	D80		
633	072U	2000000	Y	D80		
634	073U	2000000	Y	D80		
635	074U	2000000	Y	D80		
636	075U	2000000	Y	D80		
637	076U	2000000	Y	D80		
638	077U	2000000	Y	D80		
639	078U	2000000	Y	D80		
640	079U	2000000	Y	D80		
641	080U	2000000	Y	D80		
642	082U	2000000	Y	D80		
643	083U	2000000	Y	D80		
644	086U	2000000	Y	D80		
645	088U	2000000	Y	D80		
646	089U	2000000	Y	D80		
647	090U	2000000	Y	D80		
648	092U	2000000	Y	D80		
649	093U	2000000	Y	D80		
650	094U	2000000	Y	D80		
651	095U	2000000	Y	D80		
652	096U	2000000	Y	D80		
653	097U	2000000	Y	D80		
654	098U	2000000	Y	D80		
655	099U	2000000	Y	D80		
656	100U	2000000	Y	D80		
657	101U	2000000	Y	D80		
658	102U	2000000	Y	D80		
659	103U	2000000	Y	D80		
660	104U	2000000	Y	D80		
661	106U	2000000	Y	D80		
662	108U	2000000	Y	D80		
663	110U	2000000	Y	D80		
664	111U	2000000	Y	D80		
665	112U	2000000	Y	D80		
666	113U	2000000	Y	D80		
667	114U	2000000	Y	D80		
668	115U	2000000	Y	D80		
669	116U	2000000	Y	D80		
670	117U	2000000	Y	D80		
671	118U	2000000	Y	D80		
672	119U	2000000	Y	D80		
673	120U	2000000	Y	D80		
674	121U	2000000	Y	D80		
675	122U	2000000	Y	D80		
676	124U	2000000	Y	D80		

[R] Reacted

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
677	127U	2000000	Y	D80		
678	128U	2000000	Y	D80		
679	129U	2000000	Y	D80		
680	131U	2000000	Y	D80		
681	132U	2000000	Y	D80		
682	134U	2000000	Y	D80		
683	135U	2000000	Y	D80		
684	136U	2000000	Y	D80		
685	137U	2000000	Y	D80		
686	138U	2000000	Y	D80		
687	139U	2000000	Y	D80		
688	140U	2000000	Y	D80		
689	141U	2000000	Y	D80		
690	142U	2000000	Y	D80		
691	143U	2000000	Y	D80		
692	144U	2000000	Y	D80		
693	146U	2000000	Y	D80		
694	147U	2000000	Y	D80		
695	148U	2000000	Y	D80		
696	150U	2000000	Y	D80		
697	151U	2000000	Y	D80		
698	152U	2000000	Y	D80		
699	153U	2000000	Y	D80		
700	154U	2000000	Y	D80		
701	155U	2000000	Y	D80		
702	157U	2000000	Y	D80		
703	158U	2000000	Y	D80		
704	159U	2000000	Y	D80		
705	160U	2000000	Y	D80		
706	161U	2000000	Y	D80		
707	162U	2000000	Y	D80		
708	163U	2000000	Y	D80		
709	164U	2000000	Y	D80		
710	165U	2000000	Y	D80		
711	166U	2000000	Y	D80		
712	167U	2000000	Y	D80		
713	168U	2000000	Y	D80		
714	169U	2000000	Y	D80		
715	170U	2000000	Y	D80		
716	171U	2000000	Y	D80		
717	172U	2000000	Y	D80		
718	173U	2000000	Y	D80		
719	174U	2000000	Y	D80		
720	175U	2000000	Y	D80		
721	PCBs	2000000	Y	D80		
722	CAMU-eligible	2000000	Y	D80		

[R] Reacted

Wayne Disposal Inc.
2018 TSCA Permit Renewal

Attachment 4
Groundwater Monitoring

Groundwater Sampling and Analysis Plan
Wayne Disposal Inc.

MID 048 090 633

I. Introduction

40 CFR, Part 264.97 requires the owner or operator of a hazardous waste facility to develop and follow a consistent program of groundwater sampling and analysis procedures. The program must include procedures and techniques for:

1) sample collection;
2) sample preservation and shipment;
3) analytical procedures; and
4) chain of custody control.

Some of the wells are also subject to monitoring under the TSCA requirements of 40 CFR, Part 761.75. This document has been developed to direct the efforts of Wayne Disposal, Inc.'s (WDI) groundwater monitoring personnel and thereby meet the requirements of the rules referenced above.

II. General Description

The current groundwater monitoring system for WDI consists of 28 wells, numbered 18, 19R, 20 through 22, 23AR, 24, 25, 26A, 27A, 28 through 30, 31AR, 32, 34A, 35A, 36 through 40R and 47 though 53. Wells numbered 1A through 16, 26, 27, 31 and 41 through 46 also exist at the site but do not form a part of the groundwater monitoring sampling network for the hazardous waste management area of WDI. Wells OB-21, OB-23R, OB-24, OB 34R, OB-40R and OB-48 through OB-53 are also monitored under the Toxic Substances Control Act (TSCA) per conditions contained in 40CFR 761.75. Well locations are shown on Attachment A.

For Cell VI-F&G, a two-phase monitoring system will be implemented to supplement the current monitoring program. Construction of the MC VI-F&G began in with the Woodlot (MC VI-G Phase 1). During this initial monitoring phase, a line of wells were installed south of the MC VI-G, Phase I As shown on Attachment A, this set of wells is designated as OB-49 through OB-52. In addition to the four new wells, observation wells W-1 and W-10S, which were installed as part of the hydrogeologic investigation, have been re-designated as wells OB-48 and OB-53, respectively and incorporated into the monitoring plan. Three of the new wells (OB-50, OB-51 and OB-52) were installed in the lower sand aquifer and one (OB-49) was installed in the bedrock.

When construction of cells south of the these wells begins, these initial phase wells will be abandoned, and additional wells will be installed (or re-designated) at the downgradient (i.e., south) side of MC 1, which will be incorporated into the Part 111 groundwater monitoring program for MC VI-F&G. This second set of wells will include existing wells OB-6, OB-8, OB-12R, and OB-13 (to be re-designated as dual Part 111/115 monitoring wells), and four new monitoring wells (OB-54, OB-55, OB-58 and OB-59).

As new wells are installed, they must be sampled four times to establish an intrawell minimum background concentration for all primary and secondary parameters prior to waste being placed in the cell (or phase of cell) that will be monitored by the new well. If possible, these four samples should be collected quarterly to provide suitable background variance. If the background samples are collected on an accelerated schedule, the background statistics should be recomputed once four samples collected quarterly are completed, assuming of course, that there is no evidence of impact by waste or waste constituents at the time.

Copies of the well logs for all of WDI's wells are included in Attachment B. As new wells are added or abandoned, Attachments A, B and E must updated and the updates submitted to the MDEQ.

III. Laboratory

Analyses of samples from the wells are conducted by a contract laboratory, Pace Analytical (Pace) of Grand Rapids, MI. Analytical arrangements and sample bottle preparation can be ordered in advance by calling Pace. Request all analyses when calling for bottles so the laboratory personnel can properly prepare the containers.

If WDI decides to contract analysis of groundwater samples to another laboratory, the change will be made only after at least two concurrent sampling/analysis events show adequate correlation of analysis results of the existing and proposed contract laboratories.

IV. Required Documentation

Documentation required for this monitoring program include:

a) A field notebook must be utilized to record all pertinent field data and sampling information during every sampling event. This must include the name(s) of sampling personnel, sample date, sample time, sample location, depth to standing water in the well, calculations for determining the volume of water to be purged from the well prior to sampling, results of any field measurements on groundwater samples and observations of sample characteristics or the sampling environment. Any odors, colors, sheens or other unusual characteristics of the samples must be described in detail. Copies of these field data notes must be included in reports sent to MDEQ.

b) During each sampling event, a Monitoring Well Inspection Log must be filled out and filed with the Site Environmental Manager. A copy of this form is included as Attachment C-2. This report must be filled out to note any conditions of the monitoring wells or surrounding area that needs maintenance or repairs.

c) An equipment inventory, repair and calibration log is maintained in the Engineering Field Office. This log is used to list the inventory (by serial number) of all sampling apparatus and field measurement devices. Any changes of equipment or repairs to equipment must be noted in this log, as well as daily instrument calibrations, etc.

d) Also required for the sampling process are standard chain of custody forms from Pace or any other contract laboratory used. A sample copy of this record is included herein as Attachment C-1. This sheet must be filled out fully for each sample submitted for analysis as described in Section X.

V. Standing Water Level Measurements

To obtain the an accurate measurement of static water levels for the site, 1) the levels must be obtained for all wells listed on Attachment E before any water is removed for purging or sampling, and 2) the levels must be obtained for all wells in as short a time as possible on the same day, to limit changes due to barometric pressure effects. Generally static water levels for the wells are determined at least 30 days after the wells were last sampled ensuring water levels reach static elevations.

The depth to standing water within the well casing is measured from the top of casing (TOC). The top of the well casing is exposed by removing the white plastic Well Wizard™ well heads. The surveyed point on the casing is always at the edge on the north side of the casing. Additionally, there is a permanent mark on the north side of the casing which marks the edge from which water levels are to be taken. The TOC elevations shall be surveyed at least once every two years to verify accuracy. Removal of the well head is necessary for determination of the standing water level. The depth to water is measured using an electric water level indicator. Attachment D describes the operating procedures for the water level indicator, which is used for this purpose.

When using the water level indicator, make certain that the probe and submersed portion of the cable are cleaned with distilled water and a clean cloth, followed by a distilled water rinse. This prevents cross contamination between wells. Lower the probe into the casing slowly while watching for the light. Carefully determine the water level by raising and lowering the probe at the water surface, and monitoring the light and buzzer. Record the distance from the point on the cable at TOC to the nearest marking on the cable <u>within</u> the well casing. The markings on the cable are scaled in 0.01 foot intervals. Record the measurement to the nearest <u>0.01 foot</u>. The depth to standing water is then the distance from the probe tip at the water level to the marking on the cable. Record this depth in the field notebook.

VI. Well Purging

Before purging a well, it is necessary to determine the quantity of water contained within the well casing. This is done by subtracting the depth to standing water from the depth to the well screen. The depth to standing water must be determined just prior to beginning sample collection. The depth to the well screen for each existing well is listed on Attachment E. The difference between depth to the bottom of the screen and depth to water level is the height of water standing within the well. Multiply this height of water by 0.17 gallons per foot (for 2 inch diameter well casing).

Multiply that product by 3, the number of standing volumes to be purged, which is the minimum recommended by MDEQ. The resultant product is the total quantity to be purged from the well, in gallons. Once again,

Amt. purged (in gallons) = (Ht. of standing water) x 0.17 x 3

Record these calculations in the field notebook.

The depth to the well screen should be confirmed periodically by removing the dedicated pump assemblies and lowering the water level indicator probe to the very bottom of the well casing for a determination of the clear depth of the well (make sure that the indicator cable is cleaned between each well). In addition, well depths should be checked if a change in well yield or sample appearance (i.e. turbidity) is noted. It is very important to ensure that the pump and tubing are kept clean when removed from the well (i.e. do not place equipment on ground, rather, wrap in plastic sheeting).

Once three standing well volumes have been removed, measure and record the pH and specific conductance of the water coming from the well. Continue to record these values at a rate of once every 10 minutes. After three values of pH and specific conductance have been obtained in this manner, compare the highest and lowest values. If the difference between the highest and lowest pH value is 0.07 su or less, then the well is considered stabilized with respect to pH. If the difference between the highest and lowest specific conductance values is 18 μmhos/cm or less, then well stabilization with respect to this parameter is considered complete. If the difference between the highest and lowest values for either parameter exceeds this criteria, pump the well another 10 minutes and recheck both parameters. Perform the comparison again, using only the last three monitored values of pH and specific conductance. Once the criteria are satisfied for any three consecutive monitored values of both pH and specific conductance, then consider the well fully stabilized and proceed with sampling. Measure and record well water temperature at this time as well. Record in the field notebook all the data obtained to establish well stabilization. In the cases where an individual well cannot be purged to stabilization in a manner described above because the well becomes fully dewatered, then sample the well after completely dewatering (evacuating) the well four times. For each sampling event, the second, third and fourth well evacuations should be performed within three days of the previous well evacuation. Sampling should be accomplished as soon after the fourth well evacuation as possible, depending upon the rate at which the water level in the well recovers. Measure and record pH, specific conductance and temperature in the field at the time the sample is obtained from such a well. Fully record in the field notebook all instances of well evacuation.

At this time all wells are outfitted with the "Well Wizard"^{TM} system of dedicated pumps. This means that each well has a submersible pump within it, with the pump intake generally located within the screened interval. The control unit and cylinders of compressed nitrogen are the other components that complete this system. Because sampling immediately follows the purging step in nearly all cases, the sampling box is always included during well purging. The sample box is discussed in greater detail in the Sample Collection portion of this document.

Prior to a sampling round for the wells, replace the sampling box discharge tube. To set up the Well Wizard™ system for operation, connect the nitrogen cylinder hose to the supply port on the controller unit. Connect one end of the coiled tubing within the controller unit to the Drive Air Out port on the unit, and the other end to the smaller of the two ports on the well head assembly. Connect the water sample line from the larger of the two well head ports to the back of the sampling box. Make certain that the valve on the rear of the box directs flow out of the box and through the discharge tube, until well purging is completed.

To initiate purging, begin the flow of nitrogen from the cylinder. Measure the quantity of water purged from the well using a bucket with known volume and marked with gradations kept with this equipment. Note that all purged water should be discharged on the ground away from the well. Do not allow the purged water to re-enter the well or the well protective casing nor should you allow ponding of the water around the well. Further background on Well Wizard™ operation can be gained by referring to Attachment F. Report any problems with equipment function to the Site Environmental Manager.

VII. Sample Collection

Upon completion of the well purging step, or upon return to a well which has been evacuated four times for purging, you are ready to take samples. Make sure each sample bottle for a given monitoring well has a label (affixed by the analytical laboratory personnel) which contains our facility name, the monitoring well number, the date and the sampler's initials. If a preservative has been included by the laboratory, such a note should appear on the label.

In the past sampling programs, it has been shown that airborne artifacts from disposal operations and engine exhaust can affect the number of detected constituents and their concentrations within groundwater samples. For this reason, a controlled-atmosphere sampling box was constructed for use in the collection of groundwater samples. Nitrogen, under positive pressure, is used as the sampling atmosphere within the box, thereby minimizing the probability of impacts to sample quality by airborne artifacts. <u>All</u> groundwater samples taken from WDI wells using dedicated pumps shall be taken within the sampling box.

In preparation for sampling, connect the nitrogen cylinder to the sampling box and purge the box atmosphere with nitrogen for 20 to 30 minutes. Make certain that all sample bottles to be used at a given location are placed within the box prior to purging the box atmosphere. Remove the caps from the bottles during the purging process to expose the interior of the bottles to the nitrogen environment. A new laboratory grade tygon tube connecting the wellhead to the sampling box must be used for the collection of samples from each location. When all is ready, turn the valve on the rear of the sampling box, diverting the flow of water from the discharge tube to the sampling tube within the box.

Samples for volatile organic compounds will be filled first. No headspace is permitted in the small glass vials. This may require several attempts but it can and must be done. Make certain not to touch the inside of bottle necks or caps with your hands. Next, fill the bottles for total organic carbon, total phenolics, metals and then other miscellaneous parameters, in this order.

Fill each sample bottle to the very top and allow minimal headspace (air bubbles when capped and tipped) and take care not to spill any of the preservatives. Record the number and type of samples taken and the time of sampling on the chain of custody record.

Trip blanks (VOC vials filled with laboratory "clean" water) shall accompany the sample containers every day that samples are collected. A trip blank is provided by the laboratory for each batch of sample bottles (usually one for each cooler). These remain unopened throughout the sampling day and are submitted with the sample bottles. A field blank shall also be collected at each well sampled. A field blank is an empty (except for preservative) VOC vial that is opened in the nitrogen sampling box and filled with laboratory provided "clean" water while that well is being sampled. The purpose is to replicate the sampling environment in all ways except for the source of water in the container. Both kinds of blanks should be preserved, handled and shipped exactly as the well samples are. All of the trip blanks and a minimum of one field blank for each ten samples will be analyzed on a random basis for the primary parameters. However, if a positive result for any primary parameter is noted in a given well, the matching field blanks must be analyzed for the offending parameter(s). A complete replicate sample shall be obtained from one well, chosen randomly and labeled with an X, during each sampling round and will be analyzed for the same parameters as the sample it replicates.

VIII. Sample Preservation and Shipments

Attachment G is a tabulation of sample preservation procedures for Pace. The samples must be preserved in accordance with the procedures outlined in this attachment. For all samples the laboratory provides clean, pre-preserved bottles (where necessary). Samples to be analyzed for dissolved metals must be field filtered with a 0.45 μm in-line filter cartridge and preserved with a couple of drops of reagent grade HNO_3 to a pH of less than 2. If the samples cannot be field filtered for any reason they must be filtered and preserved immediately upon delivery to the laboratory.

When the sample collection step is completed, open the sampling box, transfer all sample bottles to a cooler and pack the cooler with ice. Make sure that after each well sampling is completed that the tubing for the sampling box, is replaced with new tubing and the chain of custody record is completed.

All collected samples and blanks must be stored in a secure location until delivery to the contract laboratory personnel. This means within sight of sampling personnel or locked in a secure location. Chain of custody records must accompany the samples at all times. The handling of these forms is covered in the Chain of Custody Control portion of this document.

IX. Analytical Procedures

The parameters to be tested for as part of the monitoring program for the uppermost aquifer wells are shown in Attachment H.

Specific analytical procedures and target detection limits, consistent with the current Policy and Procedure Document OWMRP-111/115-8 and used by Pace for this monitoring program are tabulated in Attachment I. However, when changes to analytical methods or to the detection limits contained within OWMRP-111/115-8 are published and made available, the contents of Attachment I must be updated accordingly, or MDEQ approval must be attained for any alternate target detection limits. Further, this attachment should be reviewed periodically to determine if the laboratory has made changes that should be reflected in the attachment. QA/QC frequencies, and precision and accuracy calculations are included in Pace's QA/QC manual. Changes made to detection limits, analytical methods or QA/QC in response to regulatory requirements must be included in an updated sampling and analysis plan.

Field measurements of specific conductance, pH and temperature will be performed using the equipment and procedures described in Attachment J or equipment of similar capabilities. The instruments must be calibrated prior to each day of use and the appropriate notation made in the Equipment Inventory, Repair and Calibration Log described in Section IV.

Pace's Quality Assurance Manual is listed as Attachment K. However, this manual describes the internal policies, guidelines and procedures of Pace Analytical and as it may be periodically updated is not included with this plan. WDI reviews this manual to evaluate Pace's QA/QC and standard operating procedures (including audits of the lab) to ensure that generally acceptable practices are employed. A copy of Pace's QA/QC manual can be provided to Regulators only with written approval from Pace.

X. Chain of Custody Control

Chain of Custody refers to the record of individuals and external conditions of sample handling through the time of laboratory analysis. The chain of custody record included as Attachment C is the principal document of this record. These sheets must be fully filled in with sampling information as well as the persons involved and shipment conditions during transport to the analytical laboratory. These sheets must accompany the samples to the laboratory.

When the samples are surrendered at the laboratory, each chain of custody record must be signed by the person transporting the samples as well as a representative of the receiving laboratory. The lab will make a copy of each sheet for us and keep the originals. The copy must be maintained in the files. Upon completion of a full round of sampling, transmit depth to standing water information, field monitoring data and all chain of custody records to the Site Environmental Manager.

XI. Equipment and Well Maintenance

Equipment used for the collection and analysis of groundwater samples must be maintained in working order and replaced or repaired promptly when necessary. Electrodes for pH and specific conductance should be replaced if they become difficult to calibrate or appear to malfunction. The dedicated Well Wizard^{TM} pumps and associated equipment require no routine maintenance but should be promptly replaced or repaired in the event of a malfunction. Any pump removed from a well should be thoroughly cleaned before replacement. Tubing removed from the well should be packaged and stored to prevent contamination or replaced. As outlined in Section IV, records of instrument calibration and any equipment replacement or repair must be kept in the Equipment Log maintained at the Engineering field office.

The well casings, protective covers, and Well Wizard™ pump heads should be inspected for damage at the time of each well sampling. Any damage should be noted in the field notebook and a Monitoring Well Inspection/Damage Report must be filled out and sent to the Site Environmental Manager. A copy of this form is included as Attachment C-2. It is important to note any surface erosion, standing water at the well or evidence of a damaged grout seal around the well.

In the event any damage requiring well repair becomes necessary, a Damage Incident Report will be prepared by the Site Environmental Manager. A copy of this report will be placed in the site the Groundwater Monitoring Operating Log. A proposed method of well repair will be prepared and submitted to the MDEQ for approval. Repair efforts will be undertaken after approval by the MDEQ is received. The MDEQ shall then be notified at least 24 hours prior to initiating the repair efforts. Following completion of the well repairs, as-built documentation of the repair efforts will be prepared. A copy of this shall be placed in the Groundwater Monitoring Operating Log and a copy sent to the MDEQ.

XII. Statistical Evaluation and Reporting Requirements

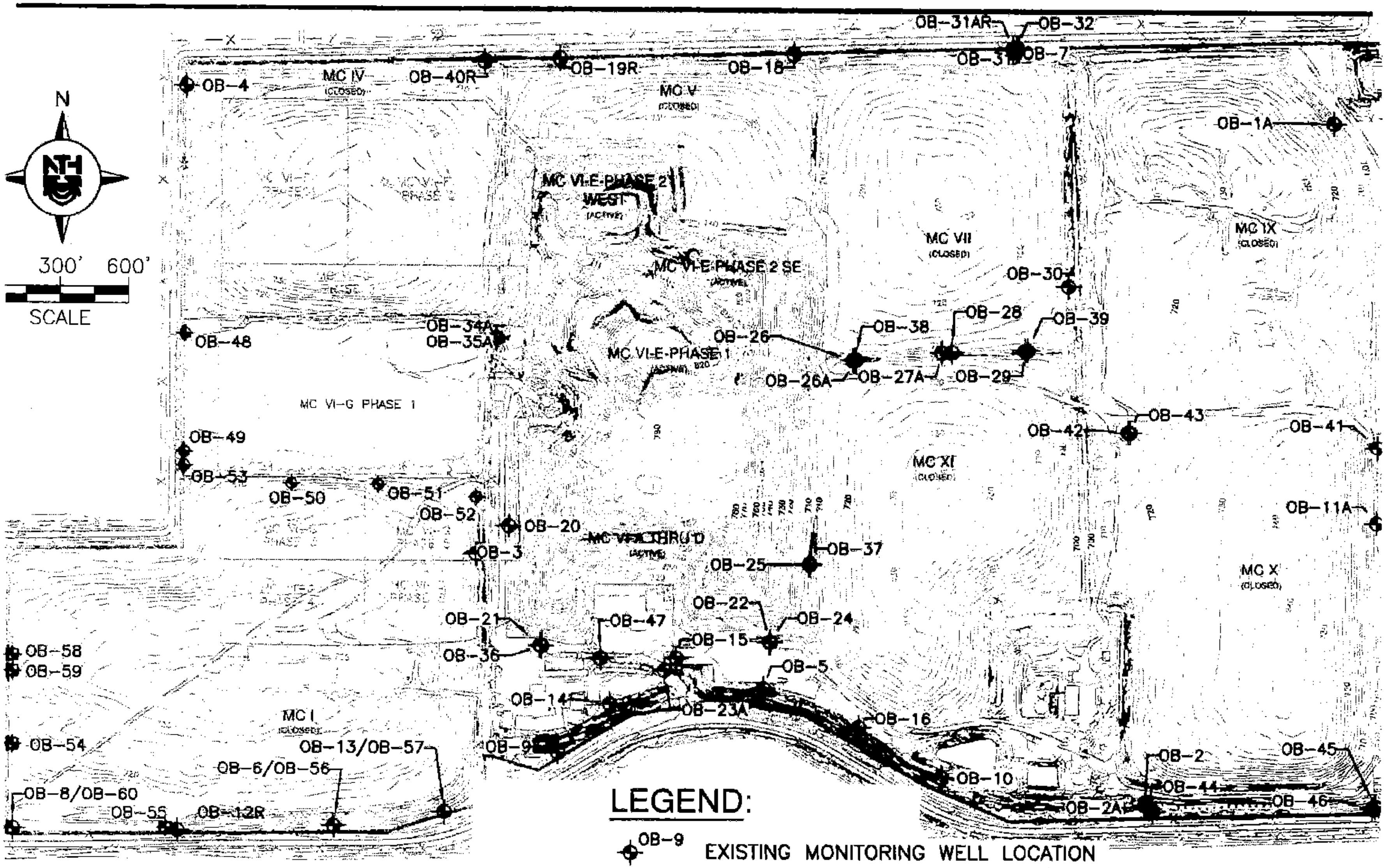
All ground water analyses for the uppermost aquifer wells must be analyzed for evidence of statistically significant increases in concentrations of all primary and secondary monitoring parameters as described in Attachment L

The analytical reports, the records of the field procedures and a report of the statistical analyses (narrative and tubular) must be submitted to the MDEQ within 60 days of completing each sampling event. This report will also include a summary of the review of QA/QC data, a narrative of the sampling event including dates and sampling personnel, and a description of any unusual events or conditions encountered. Copies of the analysis and report must be maintained in designated files at the administration office at the site. In addition, an annual report summarizing the results of groundwater monitoring results and which evaluates groundwater flow directions and rates for the uppermost aquifer must be submitted to MDEQ by March 1 of the following year.

Attachment A

Groundwater Well Location Map

(WDI/MDWTP)



LEGEND:

OB-9 EXISTING MONITORING WELL LOCATION

OB-54 PROPOSED MC VI F/G WELL LOCATIONS

710 EXISTING TOPOGRAPHIC CONTOUR

NTH PROJECT No.: 13060921-06	DESIGNED BY: DLP	CHECKED BY: ACE	DRAWING SCALE: AS SHOWN	NTH Consultants, Ltd. Infrastructure Engineering and Environmental Services	WAYNE DISPOSAL, INC. SITE NO. 2	GROUNDWATER MONITORING WELL LOCATION MAP	ATTACHMENT: A
CAD FILE NAME: 060921-WLM	DRAWN BY: KRO	INCEPTION DATE: 11/16/09	PLOT DATE: 10/15/2014		VAN BUREN TWP., WAYNE COUNTY, MICHIGAN		

J:\62\62080378\Production Sets\Env\WLM\060921-WLM.dwg

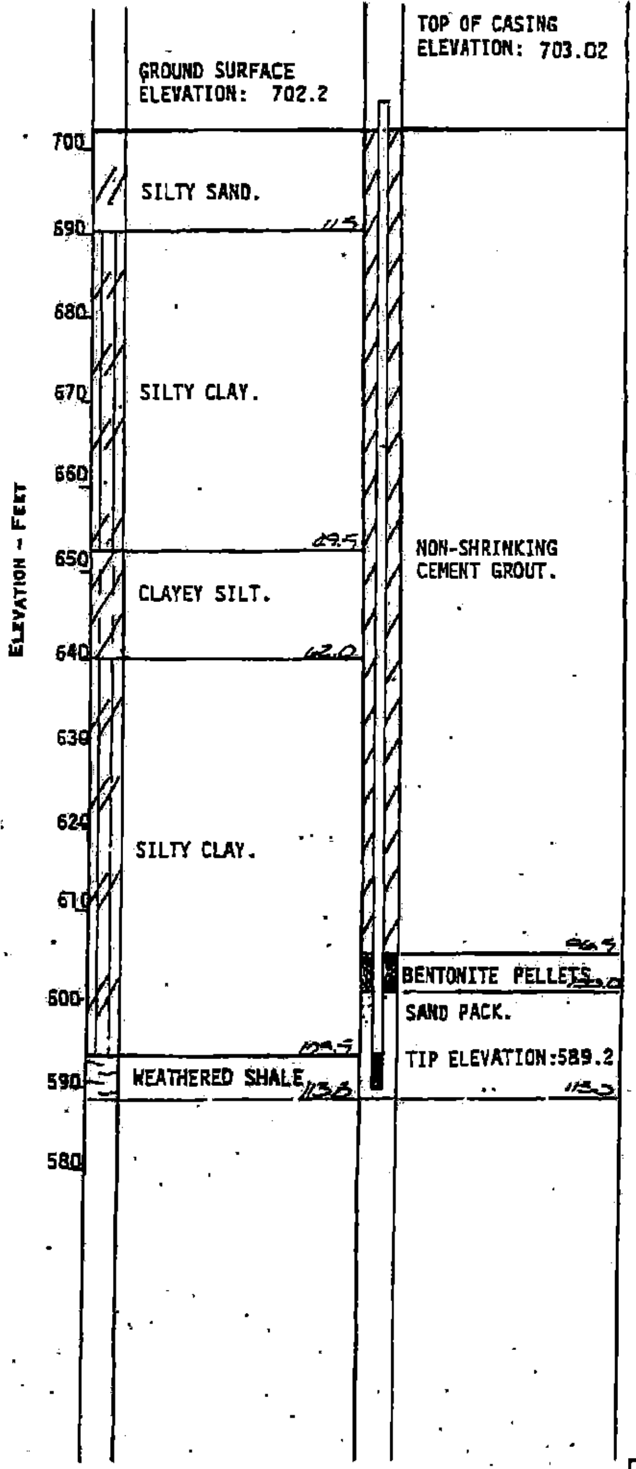
Attachment B

WDI Ground Water Monitoring Well Logs

(WDI)

LOG OF GROUNDWATER MONITORING WELL

CLASSIFICATIONS BY:
NEYER, TISEO & HINDO, LTD.



GROUNDWATER DATA

DATE	GROUND-WATER ELEV. (FEET)	COMMENTS
9-24-84	654.69	
10-22-84	653.22	

CASING – **DIAMETER:** 2.0"
– **LENGTH:** 108.0'
– **MATERIAL:** PVC

SCREEN – **DIAMETER:** 2.0"
– **LENGTH:** 5.0"
– **MESH:** .006" slot
– **MATERIAL:** PVC

WELL STARTED: 9-11-84
WELL COMPLETED: 9-11-84
INSPECTOR: J. Serwik
DRILLER: J. Blank
CONTRACTOR: American Drilling
EQUIPMENT: CME-75

NOTES:
1. For details of the subsurface strata see Log of Test Boring No. OB-18.
2. Top of casing elevations and ground surface elevations provided by Wayne Disposal, Inc.

NEYER, TISEO & HINDO, LTD.
CONSULTING ENGINEERS

GROUNDWATER MONITORING WELL No. OB-18

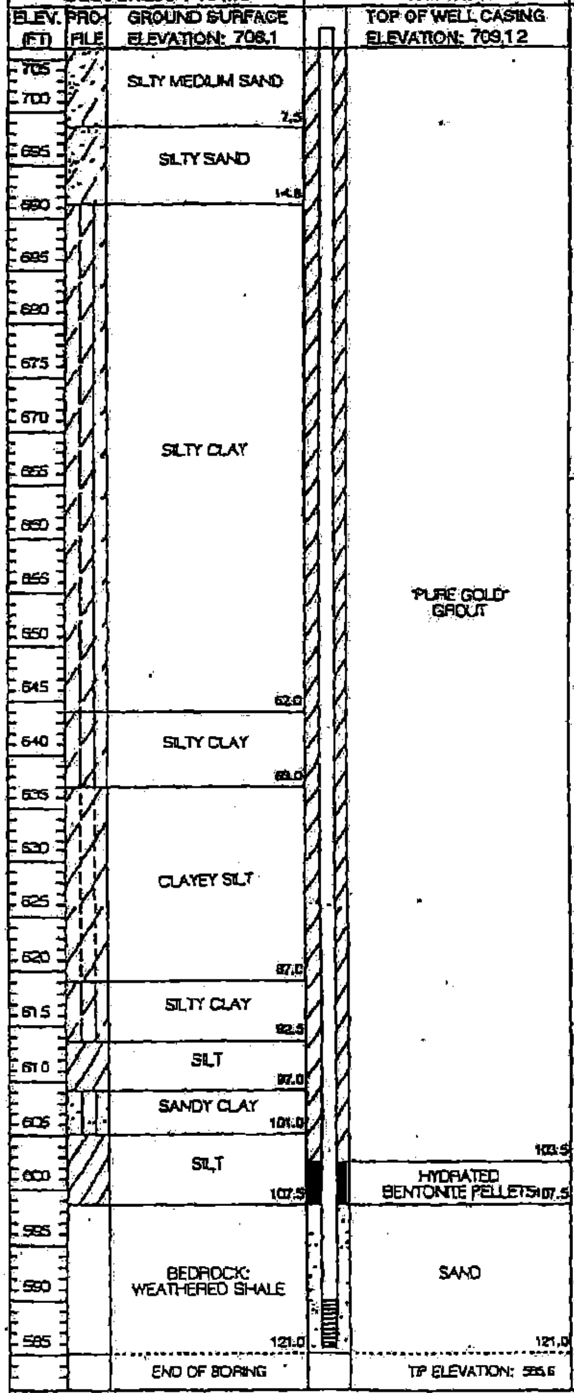
LANDFILL SITE NO. 2

NTH Consultants, Ltd.

MONITORING WELL NO. OB-19R

Project Name : WAYNE DISPOSAL LANDFILL - SITE NO. 2
NTH Proj. No: 13-3051 01-
Project Location : VAN BUREN TWP., WAYNE COUNTY, MICHIGAN
Checked By : ACE

LOG OF MONITORING WELL



GROUNDWATER DATA

Date	Ground-water Elev (ft)	Comments
12/01/94	654.50	Before Development

NOTES:

[1] FOR DETAILS OF SUBSURFACE STRATA FROM 0-90', SEE LOG OF TEST BORING OB-19; FOR 90-121', SEE LOG OF TEST BORING OB-19R

[2] TOP OF CASING & GROUND SURFACE ELEVATIONS PROVIDED BY WAYNE DISPOSAL, INC

[3] WELL LOCATION: 8873.2 N, 5324.4 E

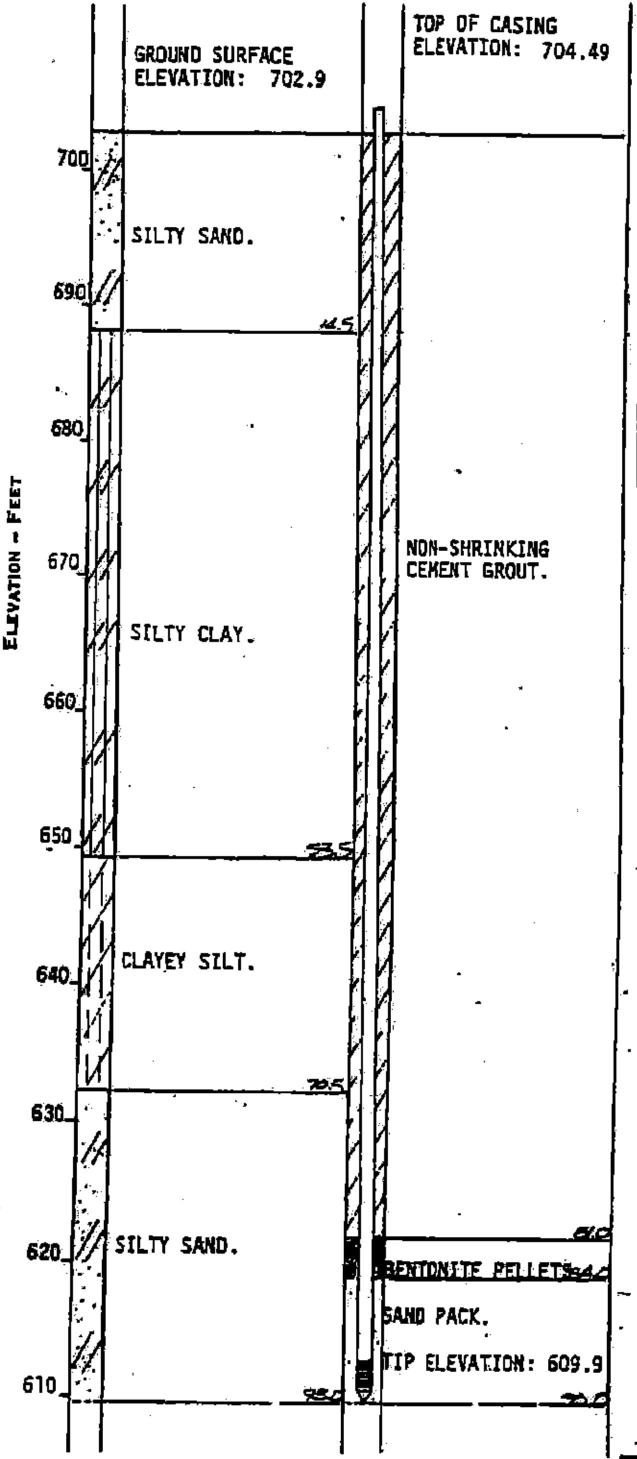
Started:	11/22/94	Casing Diameter:	2.0"
Completed:	11/22/94	Casing Length:	118.0'
Inspector:	R. LEE	Casing Type:	STAINLESS STEEL
Driller:	G. QUALLS	Screen Diameter:	2.0"
Contractor:	GEO-TEK, INC.	Screen Length:	5.0'
Equipment:	CME-850 ALL-TERRAIN DRILL RIG	Screen Mesh:	0.010"
Well Type:	MONITORING	Screen Type:	STAINLESS STEEL

Figure No. A-2

LOG OF GROUNDWATER MONITORING WELL

CLASSIFICATIONS BY:
NEYER, TISEO & HINDO, LTD.

GENERALIZED SUBSURFACE PROFILE	WELL SCHEMATIC



GROUNDWATER DATA

DATE	GROUND-WATER ELEV: (FEET)	COMMENTS
9-12-84	653.24	
9-24-84	653.13	

CASING	- DIAMETER:	2.0"
	- LENGTH:	90.0'
	- MATERIAL:	Galvanized
SCREEN	- DIAMETER:	2.0"
	- LENGTH:	3.0'
	- MESH:	.007" slot
	- MATERIAL:	Stainless Steel

WELL STARTED:	8-1-84
WELL COMPLETED:	8-2-84
INSPECTOR:	J. Serwik
DRILLER:	J. Blank
CONTRACTOR:	American Drilling
EQUIPMENT:	CME-75

NOTES:
1. For details of the subsurface stra see Log of Test Boring No. 08-20.
2. Top of casing elevations and groun surface elevations provided by Way Disposal, Inc.

NEYER, TISEO & HINDO, LTD.
CONSULTING ENGINEERS

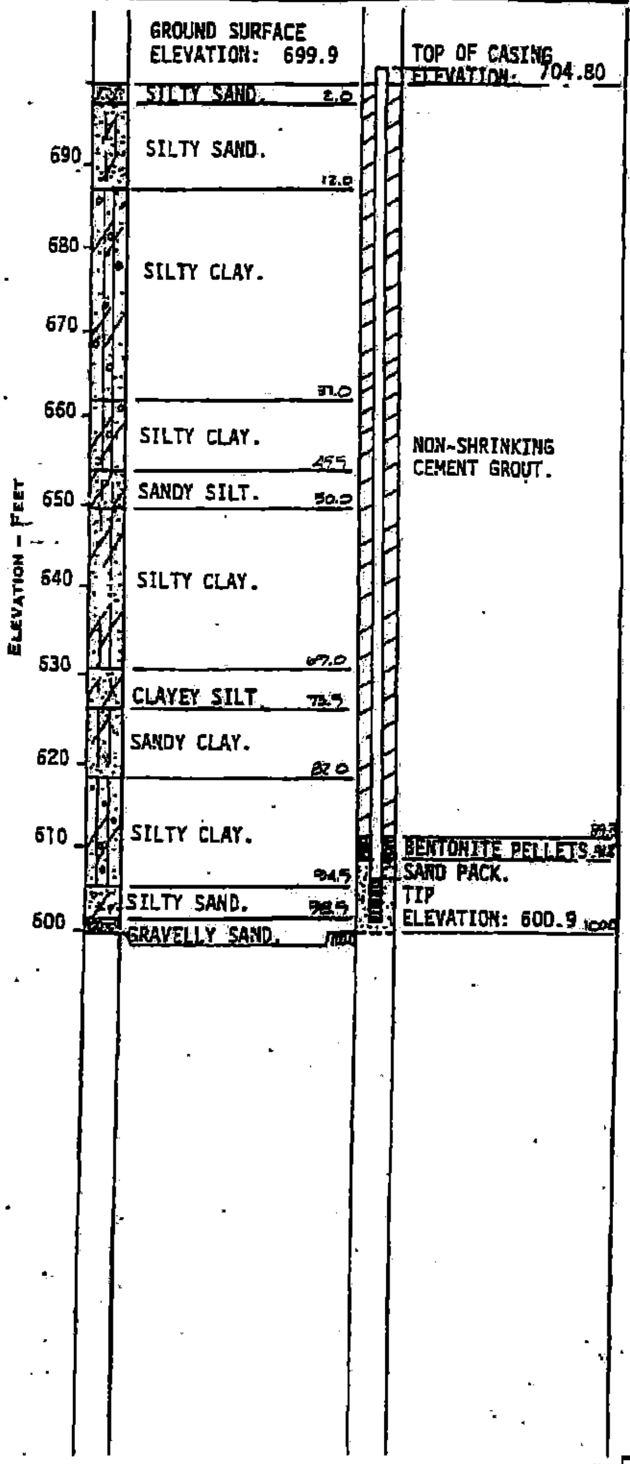
GROUNDWATER MONITORING WELL No. 08-20

WAYNE DISPOSAL LANDFILL SITE NO. 2
VAN BUREN TOWNSHIP

LOG OF GROUNDWATER MONITORING WELL

CLASSIFICATIONS BY:
NEYER, TISEO & HINDO, LTD.

GENERALIZED SUBSURFACE PROFILE	WELL SCHEMATIC



GROUNDWATER DATA

DATE	GROUND-WATER ELEV. (FEET)	COMMENTS
9-12-84	652.64	
9-24-84	652.64	
10-22-84	652.44	

CASING	– DIAMETER:	2.0"
	– LENGTH:	94.0'
	– MATERIAL:	PVC
SCREEN	– DIAMETER:	2.0"
	– LENGTH:	5.0'
	– MESH:	.006" slot
	– MATERIAL:	PVC

WELL STARTED:	7-23-84
WELL COMPLETED:	7-24-84
INSPECTOR:	J. Serwik
DRILLER:	J. Blank
CONTRACTOR:	American Drilling
EQUIPMENT:	CME-75

NOTES:

1. For details of the subsurface strat see Log of Test Boring No. OB-21.
2. Top casing elevations and ground surface elevations provided by Wayn Disposal, Inc.

NEYER, TISEO & HINDO, LTD.
CONSULTING ENGINEERS

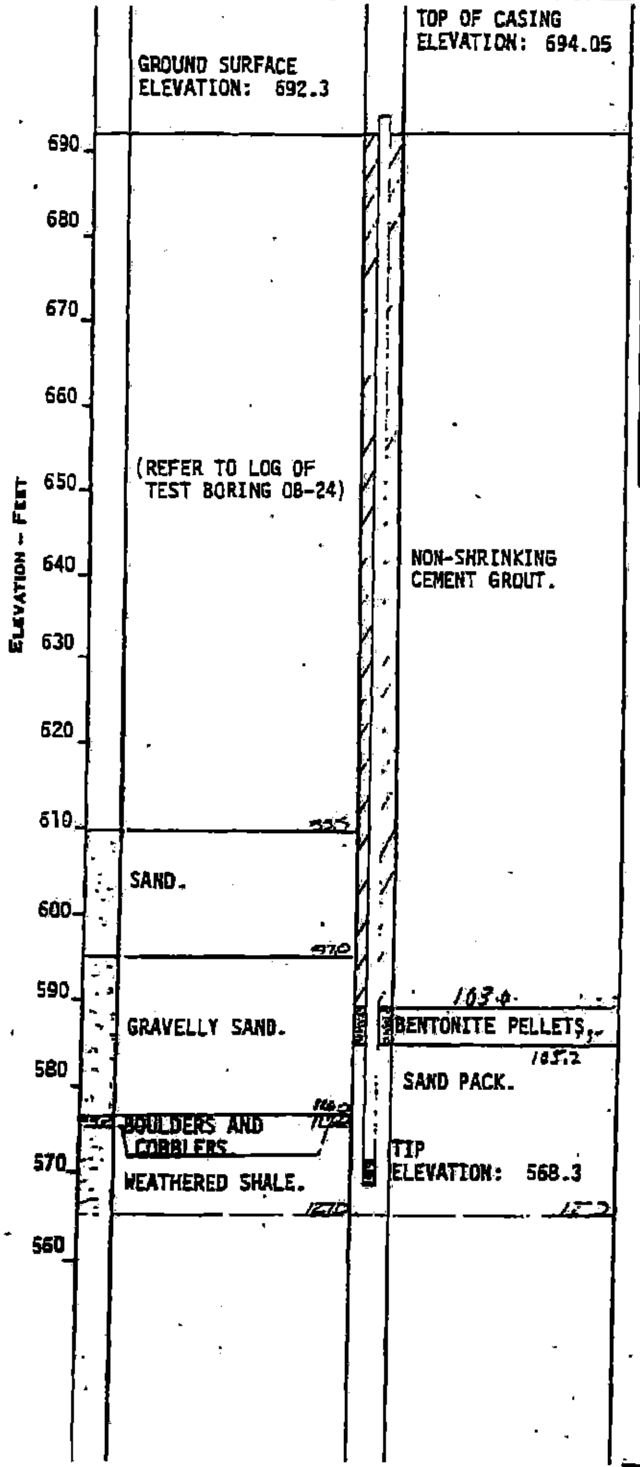
GROUNDWATER MONITORING WELL NO. OB-21

WAYNE DISPOSAL LANDFILL SITE NO. 2
VAN BUREN TOWNSHIP

LOG OF GROUNDWATER MONITORING WELL

CLASSIFICATIONS BY:
NEYER, TISEO & HINDO, LTD.

GENERALIZED SUBSURFACE PROFILE	WELL SCHEMATIC



GROUND WATER DATA

DATE	GROUND-WATER ELEV. (FEET)	COMMENTS
9-24-84	654.24	
10-22-84	653.32	

CASING – DIAMETER: 2.0"
– LENGTH: 119.0
– MATERIAL: PVC

SCREEN – DIAMETER: 2.0"
– LENGTH: 5.0'
– MESH: .006" slot
– MATERIAL: PVC

WELL STARTED:	9-14-84
WELL COMPLETED:	9-14-84
INSPECTOR:	J. Serwik
DRILLER:	J. Blank
CONTRACTOR:	American
EQUIPMENT:	CME-75

NOTES:
1. For details of the subsurface strat see Log of Test Boring No. OB-22.
2. Top of casing elevations and grounc surface elevations provided by Wayr Disposal, Inc.

NEYER, TISEO & HINDO, LTD.
CONSULTING ENGINEERS

GROUNDWATER MONITORING WELL No. OB-22
WAYNE DISPOSAL LANDFILL SITE NO. 2
VAN BUREN TOWNSHIP

Project No:

Project: Well Re-Location

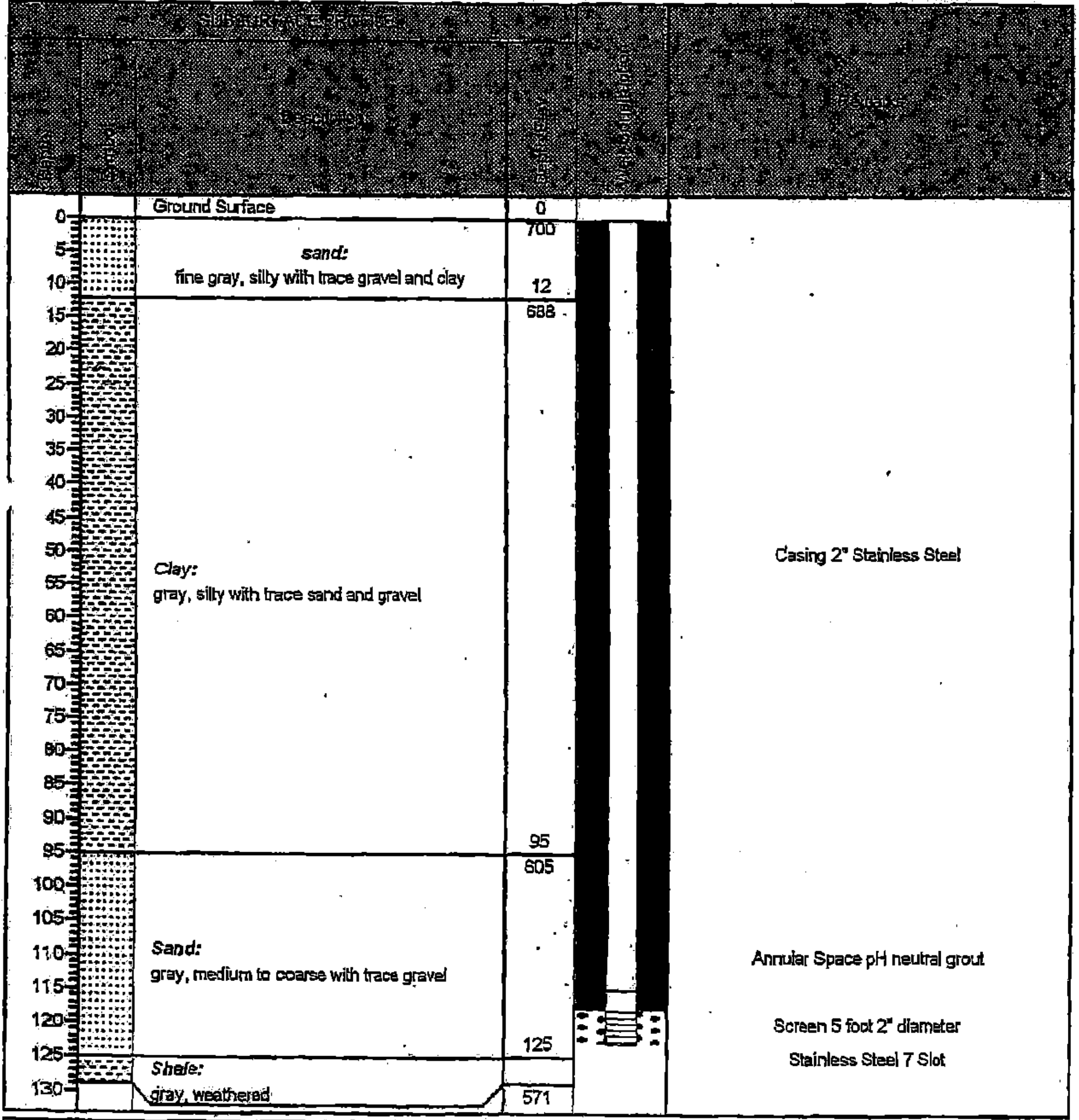
Client: Wayne Disposal, Inc.

Location: Site No. 2 Belleville, MI

Well ID: OB-23A

Enclosure:

Engineer: M. Takacs



[illegible]	Description	[illegible]	Remarks
0	Ground Surface	0 700	
	sand: fine gray, silty with trace gravel and clay	12 688	
	Clay: gray, silty with trace sand and gravel	95 605	Casing 2" Stainless Steel
	Sand: gray, medium to coarse with trace gravel	125	Annular Space pH neutral grout Screen 5 foot 2" diameter Stainless Steel 7 Slot
130	***Shale:*** gray, weathered	571	

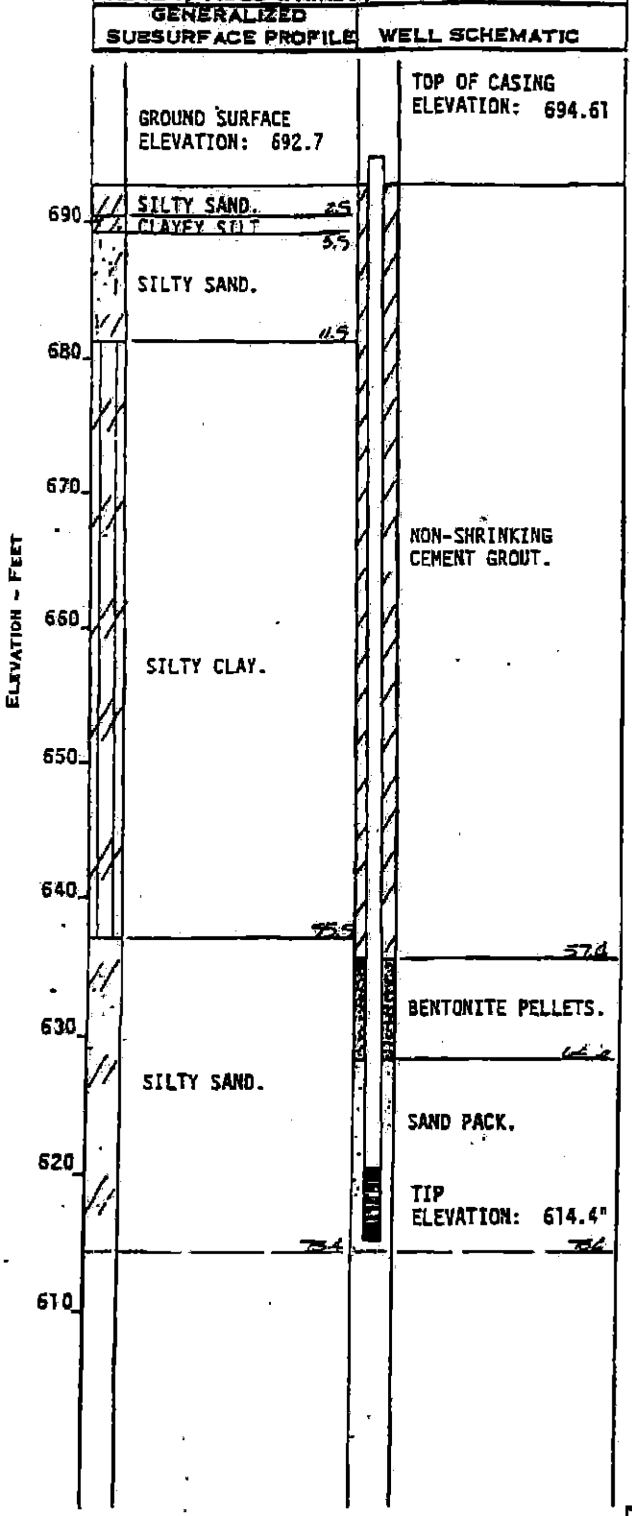
Drilled By: American Drilling

Drill Method: 6.25 inch HSA to EOB

Sheet: 1 of 1

LOG OF GROUNDWATER MONITORING WELL

Classifications By:
NEYER, TISEO & HINDO, LTD.



GROUNDWATER DATA

Date	Ground-water Elev. (Feet)	Comments
9-12-84	653.62	
9-24-84	653.67	
10-22-84	653.30	

CASING - Diameter: 2.0"
- Length: 73.3'
- Material: PVC

SCREEN - Diameter: 2.0"
- Length: 5.0'
- Mesh: .006" slot
- Material: PVC

Well Started:	7-24-84
Well Completed:	7-24-84
Inspector:	J. Serwik
Driller:	J. Blank
Contractor:	American Drilling
Equipment:	CME-75

NOTES:
1. For details of the subsurface strat see Log of Test Boring No. OB-24.
2. Top of casing elevations and ground surface elevations provided by Wayn Disposal, Inc.

NEYER, TISEO & HINDO, LTD.
CONSULTING ENGINEERS

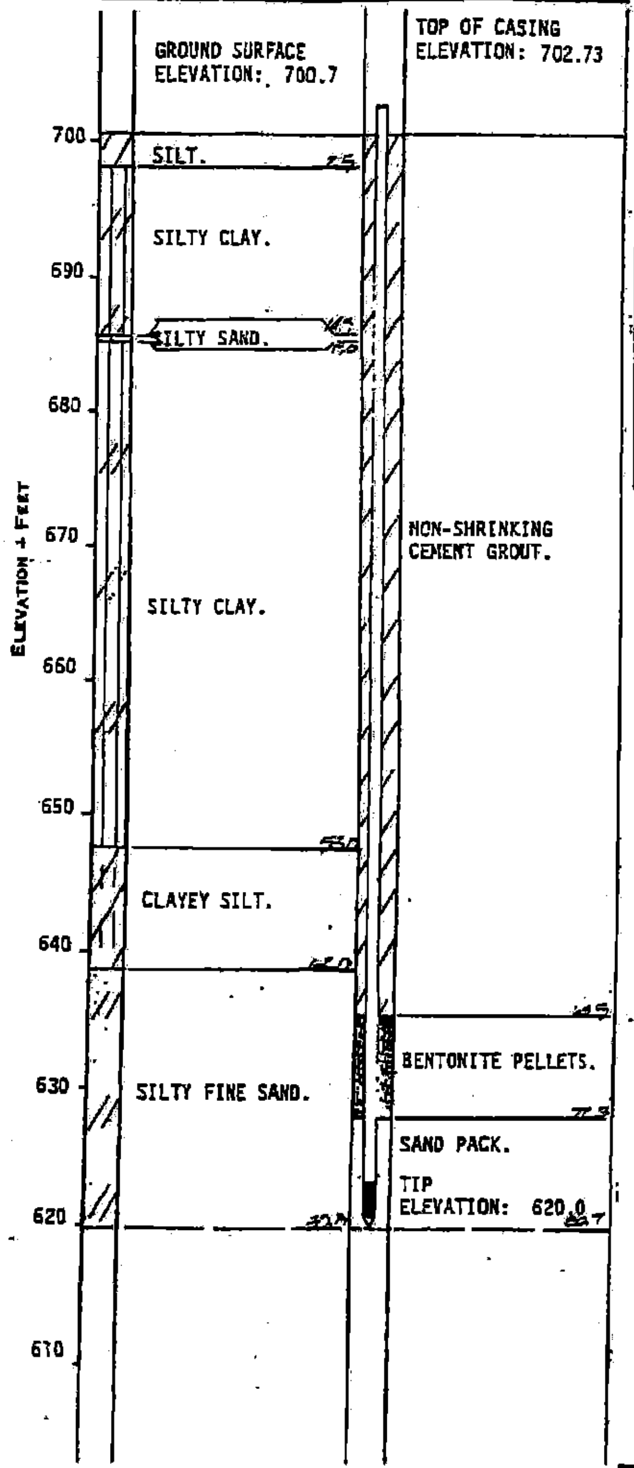
GROUNDWATER MONITORING WELL No. OB-24

WAYNE DISPOSAL LANDFILL SITE NO. 2

LOG OF GROUNDWATER MONITORING WELL

CLASSIFICATIONS BY:
NEYER, TISEO & HINDO, LTD.

GENERALIZED SUBSURFACE PROFILE | **WELL SCHEMATIC**



GROUNDWATER DATA

DATE	GROUND-WATER ELEV. (FEET)	COMMENTS
9-12-84	653.50	
9-24-84	653.86	
10-22-84	653.51	

CASING – DIAMETER: 2.0"
– LENGTH: 77.7
– MATERIAL: Galvanized

SCREEN – DIAMETER: 2.0"
– LENGTH: 3.0'
– MESH: .007" slot
– MATERIAL: Stainless Steel

WELL STARTED:	8-25-84
WELL COMPLETED:	8-25-84
INSPECTOR:	J. Serwik
DRILLER:	J. Blank
CONTRACTOR:	American Drilling
EQUIPMENT:	CME-75

NOTES:
1. For details of the subsurface strat see Log of Test Boring No. OB-25.
2. Top of casing elevations and ground surface elevations provided by Wayne Disposal, Inc.

NEYER, TISEO & HINDO, LTD.
CONSULTING ENGINEERS

GROUNDWATER MONITORING WELL NO. OB-25

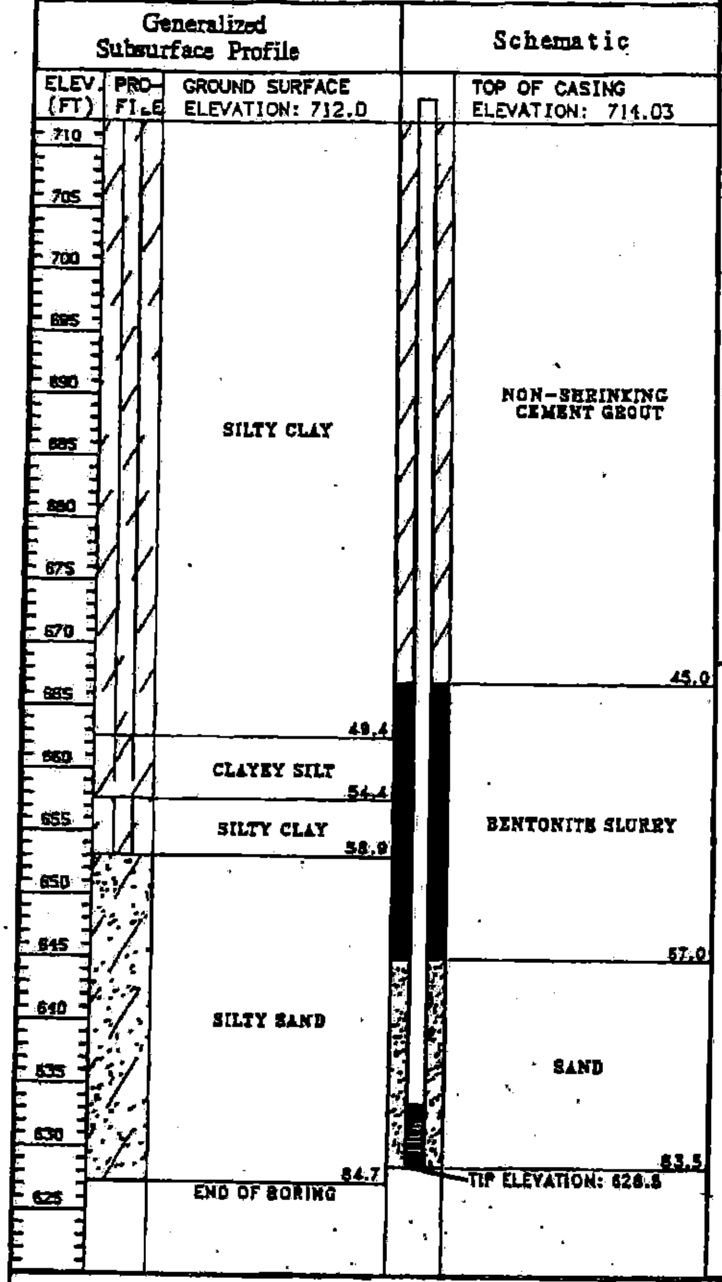
WAYNE DISPOSAL LANDFILL SITE NO. 2
VAN BUREN TOWNSHIP

NEYER, TISEO & HINDO, LTD.

MONITOR WELL NO. OB-26A

Project Name: WAYNE DISPOSAL LANDFILL – SITE NO. 2
NTH Pro. No. 94315 OW
Project Location: VAN BUREN TWP., WAYNE COUNTY, MICHIGAN
Chk. By: RLB

LOG OF MONITOR INSTALLATION



GROUNDWATER DATA

Date	Ground-water Elev.(ft)	Comments
9/23/87	650.69	
9/24/87	650.62	
9/25/87	650.42	
9/28/87	650.58	

NOTES :

[1] FOR DETAILS OF SUBSURFACE STRATA, SEE LOG OF TEST BORING NO. OB-26

[2] TOP OF CASING AND GROUND SURFACE ELEVATIONS PROVIDED BY WAYNE DISPOSAL, INC.

Started: 9/18/87
Completed: 9/21/87
Inspector: R. BURNS
Driller: S REMPALSKI
Contractor: MATECO DRILLING COMPANY
Equipment: CME-550
Observation Type: MONITORING WELL

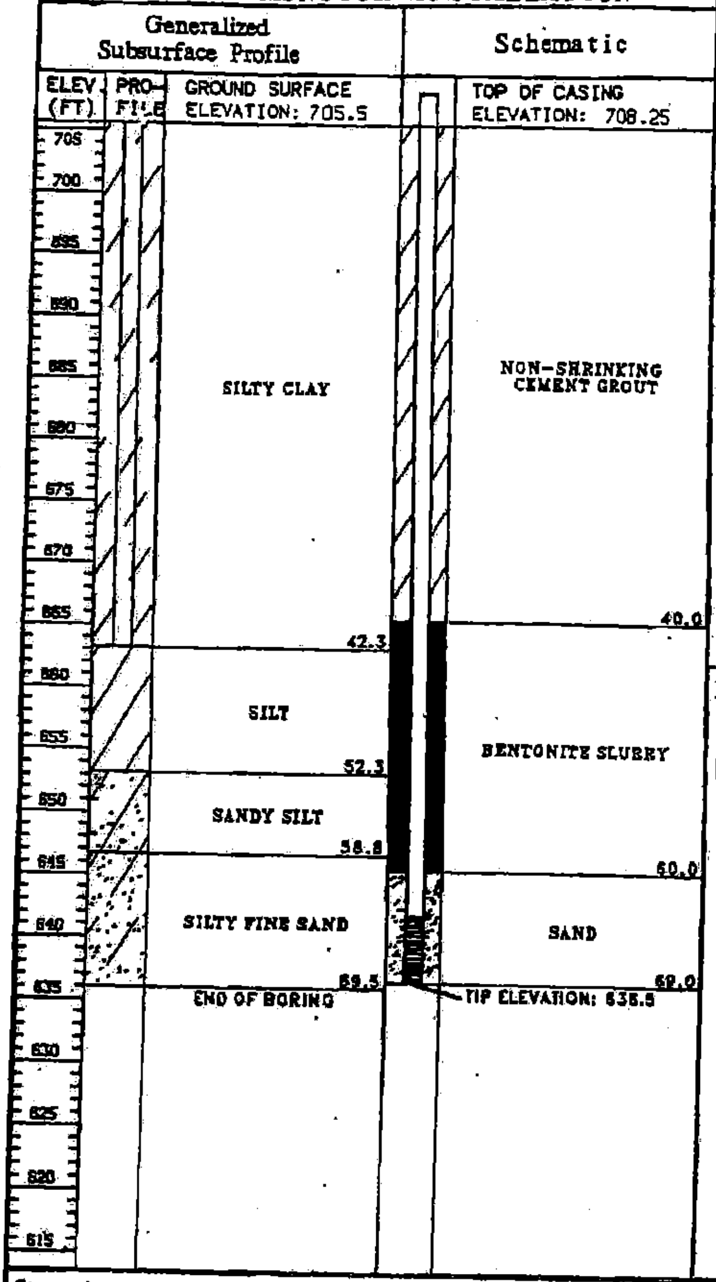
Casing Diam.: 2"
Casing Length: 80.5'
Casing Type: 60.5' GALV. / 20' SS
Screen Diam.: 2"
Screen Length: 5'
Screen Mesh: 0.01"
Screen Type: STAINLESS STEEL

NEYER, TISEO & HINDO, LTD.

MONITOR WELL NO. OB-27A

Project Name: WAYNE DISPOSAL LANDFILL – SITE NO. 2
NTH Pro. No. 94315 OW
Project Location: VAN BUREN TWP., WAYNE COUNTY, MICHIGAN
Chk. By: RLB

LOG OF MONITOR INSTALLATION



GROUNDWATER DATA

Date	Ground-water Elev.(ft)	Comments
10/7/87	658.75	
10/23/87	650.49	

NOTES :

[1] FOR DETAILS OF SUBSURFACE STRATA, SEE LOG OF TEST BORING NO. OB-27

[2] TOP OF CASING AND GROUND SURFACE ELEVATIONS PROVIDED BY WAYNE DISPOSAL, INC.

Started: 10/5/87
Completed: 10/5/87
Inspector: R. BURNS
Driller: S. REMPALSKI
Contractor: MATECO DRILLING COMPANY
Equipment: CME-550
Observation Type: MONITORING WELL

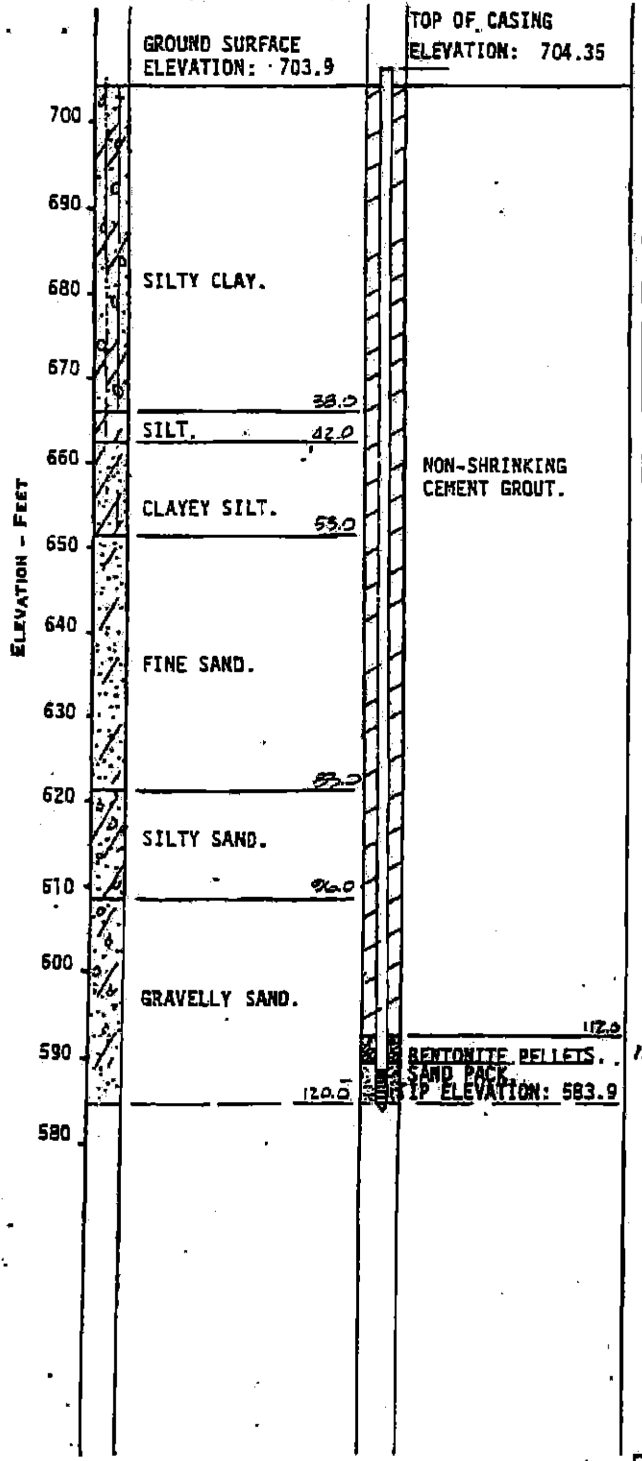
Casing Diam.: 2"
Casing Length: 67'
Casing Type: 47' GALV. / 20' SS
Screen Diam.: 2"
Screen Length: 5'
Screen Mesh: 0.01"
Screen Type: STAINLESS STEEL

Figure No. 10

LOG OF GROUNDWATER MONITORING WELL

CLASSIFICATIONS BY:
NEYER, TISEO & HINDO, LTD.

GENERALIZED SUBSURFACE PROFILE | **WELL SCHEMATIC**



115?

GROUNDWATER DATA

DATE	GROUND-WATER ELEV. (FEET)	COMMENTS
9-12-84	653.60	
9-24-84	653.69	
10-22-84	653.54	

CASING – **DIAMETER:** 2.0"
– **LENGTH:** 117.0
– **MATERIAL:** Galvanized

SCREEN – **DIAMETER:** 2.0"
– **LENGTH:** 3.0'
– **MESH:** .007" slot
– **MATERIAL:** Stainless Steel

WELL STARTED:	8-13-84
WELL COMPLETED:	8-14-84
INSPECTOR:	J. Serwik
DRILLER:	J. Blank
CONTRACTOR:	American Drilling
EQUIPMENT:	CME-75

NOTES:
1. For details of the subsurface stra see Log of Test Boring No. 28.
2. Top of casing elevations and grour surface elevations provided by Way Disposal, Inc.

NEYER, TISEO & HINDO, LTD.
CONSULTING ENGINEERS

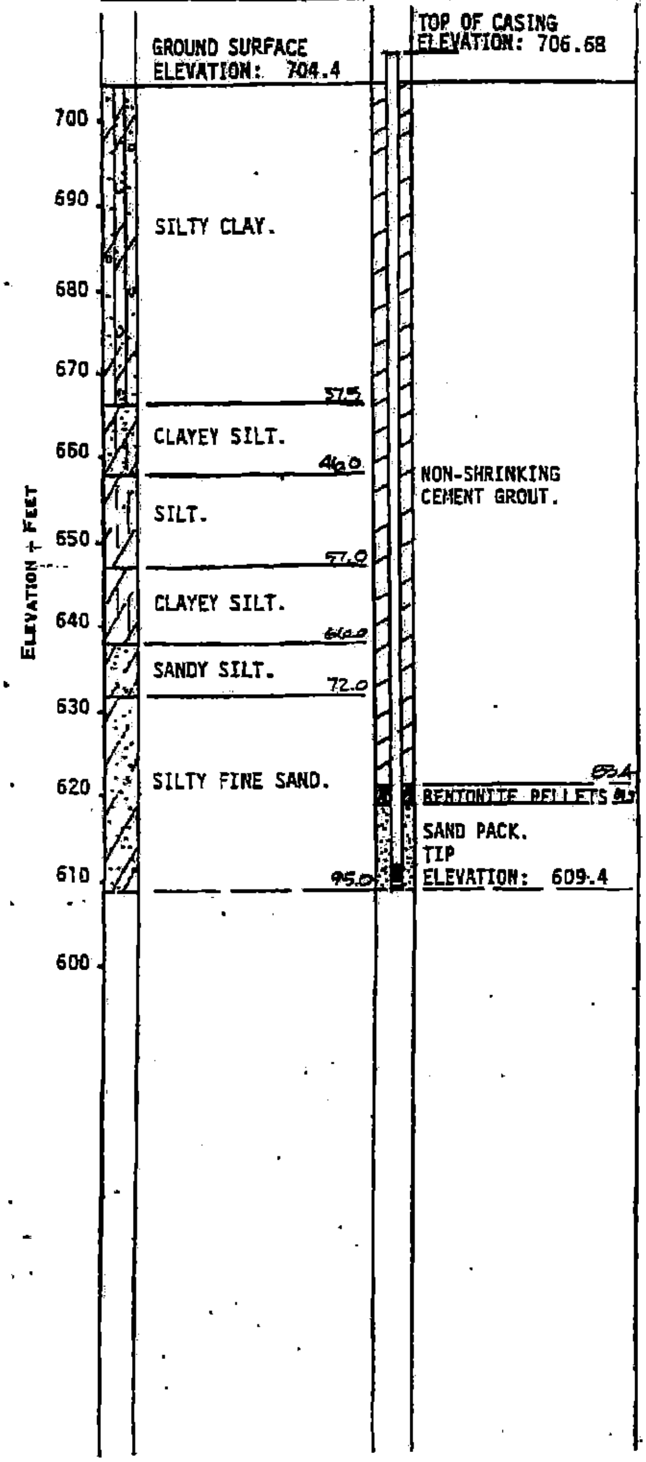
GROUNDWATER MONITORING WELL NO. OB-28

WAYNE DISPOSAL LANDFILL SITE NO. 2
VAN BUREN TOWNSHIP
WAYNE COUNTY, MICHIGAN

LOG OF GROUNDWATER MONITORING WELL

CLASSIFICATIONS BY:
NEYER, TISEO & HINDO, LTD.

GENERALIZED SUBSURFACE PROFILE	WELL SCHEMATIC



GROUNDWATER DATA

DATE	GROUND-WATER ELEV. (FEET)	COMMENTS
9-12-84	653.61	.
9-24-84	653.63	
10-22-84	653.36	

CASING	– DIAMETER:	2.0"
	– LENGTH:	90.0'
	– MATERIAL:	PVC
SCREEN	– DIAMETER:	2.0"
	– LENGTH:	5.0'
	– MESH:	.006" slot
	– MATERIAL:	PVC

WELL STARTED:	7-30-84
WELL COMPLETED:	7-30-84
INSPECTOR:	J. Serwik
DRILLER:	J. Blank
CONTRACTOR:	American Drilling
EQUIPMENT:	CME-75

NOTES:
1. For details of the subsurface stra see Log of Test Boring No. 08-29.
2. Top of casing elevations and grour surface elevations provided by Way Disposal, Inc.

NEYER, TISEO & HINDO, LTD.
CONSULTING ENGINEERS

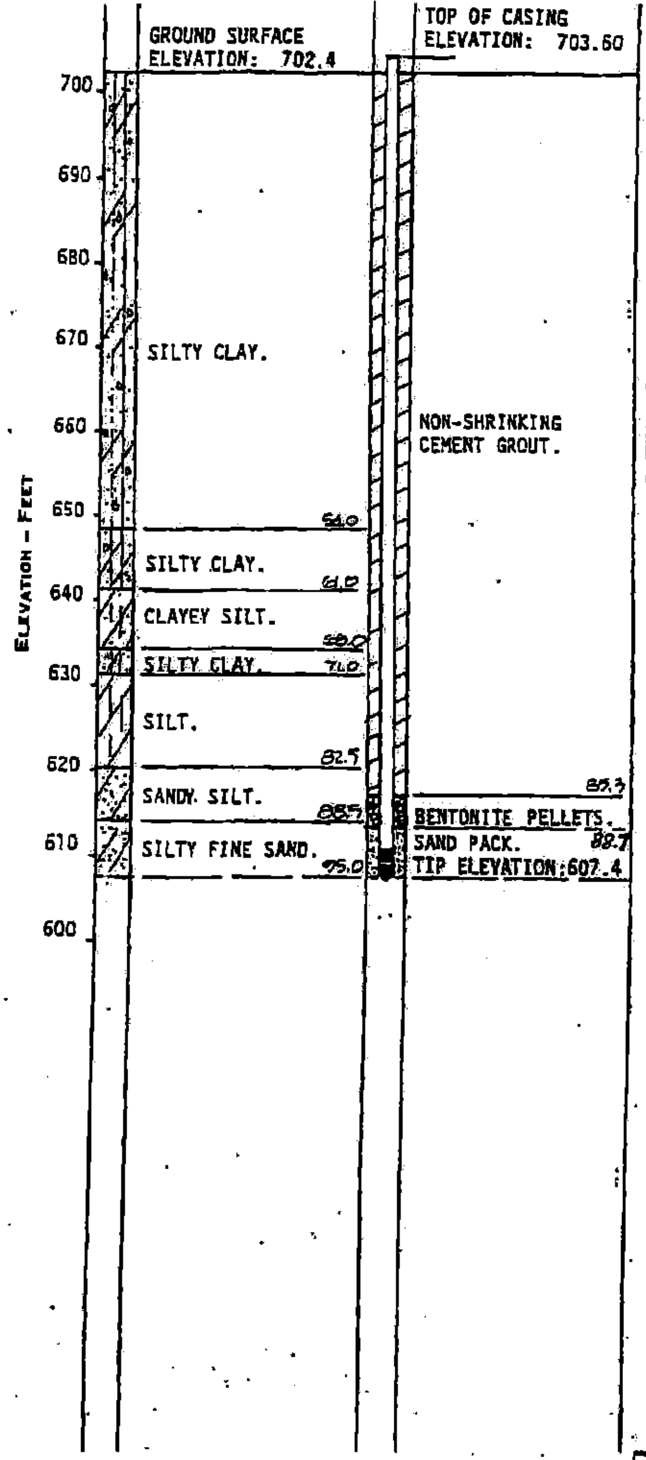
GROUNDWATER MONITORING WELL No. 08-29

WAYNE DISPOSAL LANDFILL SITE NO. 2
VAN BUREN TOWNSHIP
WAYNE COUNTY, MICHIGAN

LOG OF GROUNDWATER MONITORING WELL

CLASSIFICATIONS BY:
NEYER, TISEO & HINDO, LTD.

GENERALIZED SUBSURFACE PROFILE | WELL SCHEMATIC



GROUNDWATER DATA

DATE	GROUND-WATER ELEV. (FEET)	COMMENTS
9-12-84	653.61	
9-24-84	653.81	
10-22-84	653.38	

CASING - DIAMETER: 2.0"
- LENGTH: 92.0'
- MATERIAL: Galvanized

SCREEN - DIAMETER: 2.0"
- LENGTH: 3.0'
- MESH: .007" slot
- MATERIAL: Stainless Steel

WELL STARTED: 8-29-84
WELL COMPLETED: 8-29-84
INSPECTOR: J. Serwik
DRILLER: J. Blank
CONTRACTOR: American Drilling
EQUIPMENT: CME-75

NOTES:
1. For details of the subsurface stra
see Log of Test Boring No. OB-30.
2. Top of casing elevations and grour
surface elevations provided by Way
Disposal, Inc.

NEYER, TISEO & HINDO, LTD.
CONSULTING ENGINEERS

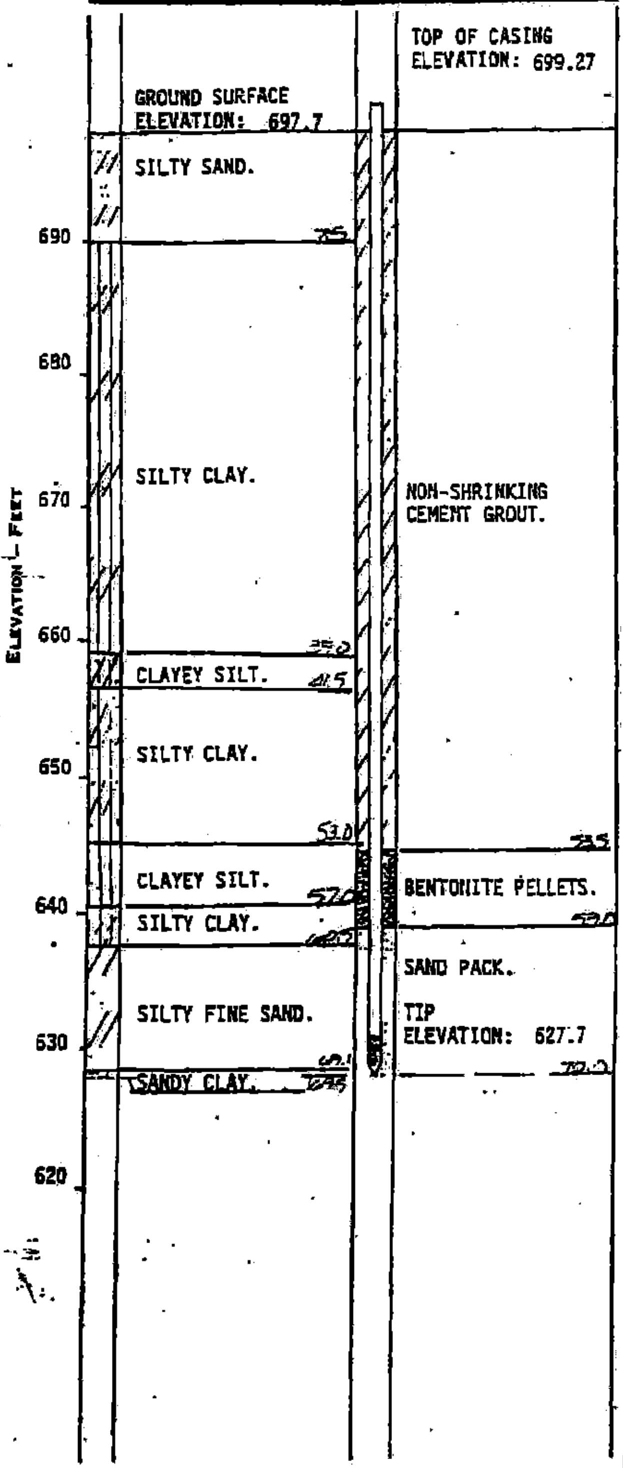
GROUNDWATER MONITORING WELL NO. OB-30

WAYNE DISPOSAL LANDFILL SITE NO. 2
VAN BUREN TOWNSHIP
WAYNE COUNTY, MICHIGAN

DATE 10-8-84

LOG OF GROUNDWATER MONITORING WELL

CLASSIFICATIONS BY:
NEYER, TISEO & HINDO, LTD.



GROUNDWATER DATA

DATE	GROUND-WATER ELEV. (FEET)	COMMENTS
9-24-84	655.60	
10-22-84	655.25	

CASING – DIAMETER: 2.0"
– LENGTH: 67.0'
– MATERIAL: Galvanized

SCREEN – DIAMETER: 2.0"
– LENGTH: 3.0'
– MESH: .007" slot
– MATERIAL: Stainless Steel

WELL STARTED: 9-18-84
WELL COMPLETED: 9-18-84
INSPECTOR: J. Serwik
DRILLER: J. Blank
CONTRACTOR: American Drilling
EQUIPMENT: CME-75

NOTES:
1. For details of the subsurface strat. see Log of Test Boring No. OB-31.
2. Top of casing elevations and ground surface elevations provided by Wayne Disposal, Inc.

NEYER, TISEO & HINDO, LTD.
CONSULTING ENGINEERS

GROUNDWATER MONITORING WELL No. OB-31

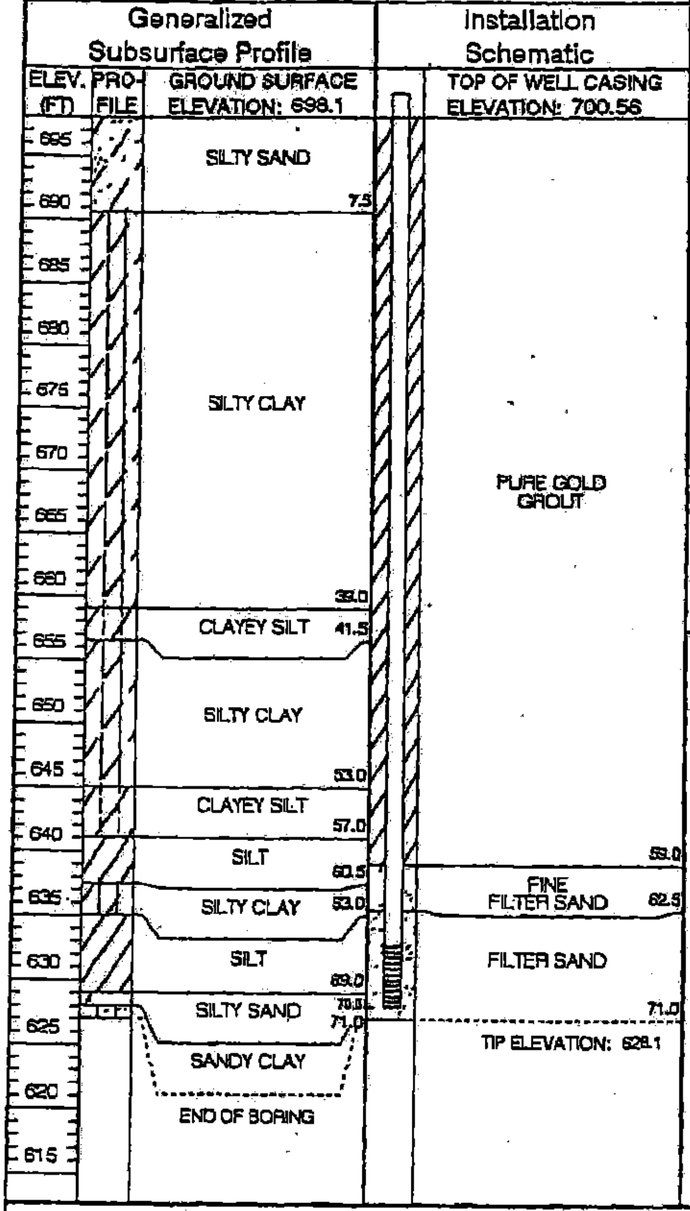
WAYNE DISPOSAL LANDFILL SITE NO. 2
VAN BUREN TOWNSHIP
WAYNE COUNTY, MICHIGAN

NTH Consultants, Ltd.

MONITORING WELL NO. OB-31AR

Project Name : WAYNE DISPOSAL, INC. - SITE NO. 2
NTH Proj. No: 13-3051 00
Project Location : VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN
Checked By : ACE

LOG OF MONITORING WELL



GROUNDWATER DATA

Date	Ground-water Elev. (ft)	Comments
02/03/93	653.91	BEFORE DEVELOPMENT
02/09/93	656.36	BEFORE DEVELOPMENT
02/25/93	656.19	

NOTES :

[1] FOR DETAILS OF SUBSURFACE STRATA, SEE LOG OF TEST BORING NO. OB-31AR.

[2] TOP OF CASING & GROUND SURFACE ELEVATIONS PROVIDED BY WAYNE DISPOSAL, INC.

[3] WELL INSTALLED TO REPLACE MONITORING WELL NO. OB-31A.

[4] CENTRALIZERS WERE USED TO MAINTAIN THE VERTICALITY OF THE WELL ASSEMBLY IN THE BOREHOLE.

FIELD MEASUREMENTS DURING DRILLING:

pH: 8.53
SPEC. COND: 361 μmhos/cm

FIELD MEASUREMENTS AFTER DEVELOPMENT:

pH: 8.21
SPEC. COND: 309 μmhos/cm

Started: 02/02/93
Completed: 02/03/93
Inspector: C. ENDLER
Driller: G. QUALLS
Contractor: GEO-TEK, INC.
Equipment: CME-750 ALL-TERRAIN DRILLING RIG
Well Type: MONITORING

Casing Diameter: 2.0"
Casing Length: 67.5'
Casing Type: STAINLESS STEEL
Screen Diameter: 2.0"
Screen Length: 5.0'
Screen Mesh: 0.007"
Screen Type: STAINLESS STEEL

Figure No. A-4

NEYER, TISEO & HINDO, LTD.

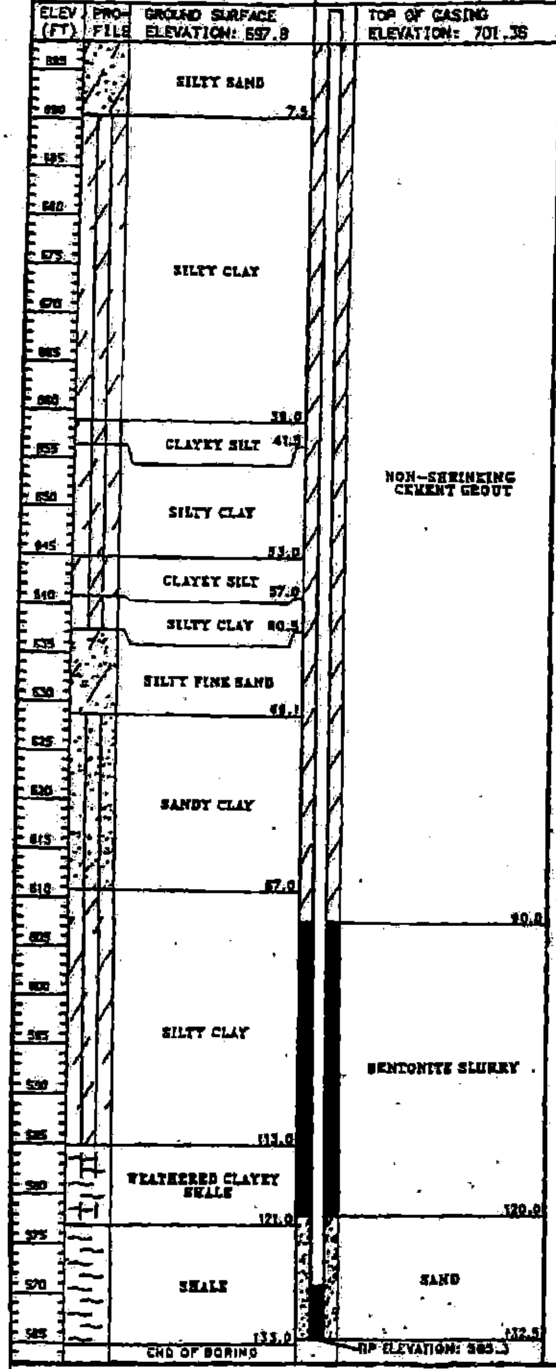
MONITOR WELL NO. OB-32

Project Name: WAYNE DISPOSAL LANDFILL – SITE NO. 2
Project Location: VAN BUREN TWP., WAYNE COUNTY, MICHIGAN

NTH Pro. No. 94515 OW
Chk. By: RLB

LOG OF MONITOR INSTALLATION

Generalized Subsurface Profile | Schematic



GROUNDWATER DATA

Date	Ground-water Elev. (ft)	Comments
7/23/87	655.70	
7/28/87	651.35	
7/29/87	651.25	
7/31/87	651.15	
8/18/87	651.00	
8/21/87	650.72	
8/25/87	650.77	
8/31/87	651.10	
9/4/87	650.78	

NOTES :

[1] FOR DETAILS OF SUBSURFACE STRATA, SEE LOG OF TEST BORING NO. OB-32.

[2] TOP OF CASING AND GROUND SURFACE ELEVATIONS PROVIDED BY WAYNE DISPOSAL, INC.

Started: 7/21/87
Completed: 7/21/87
Inspector: R. BURNS / M. TAKACS
Driller: S. REMPALSKI
Contractor: MATECO DRILLING COMPANY
Equipment: CME-550
Observation Type: MONITORING WELL

Casing Diam.: 2"
Casing Length: 127'
Casing Type: 107.5' GALV. / 20' SS
Screen Diam.: 2"
Screen Length: 5'
Screen Mesh: 0.007"
Screen Type: STAINLESS STEEL

Figure No. 12

MONITORING WELL NO: OB-34A

NTH CONSULTANTS, LTD.

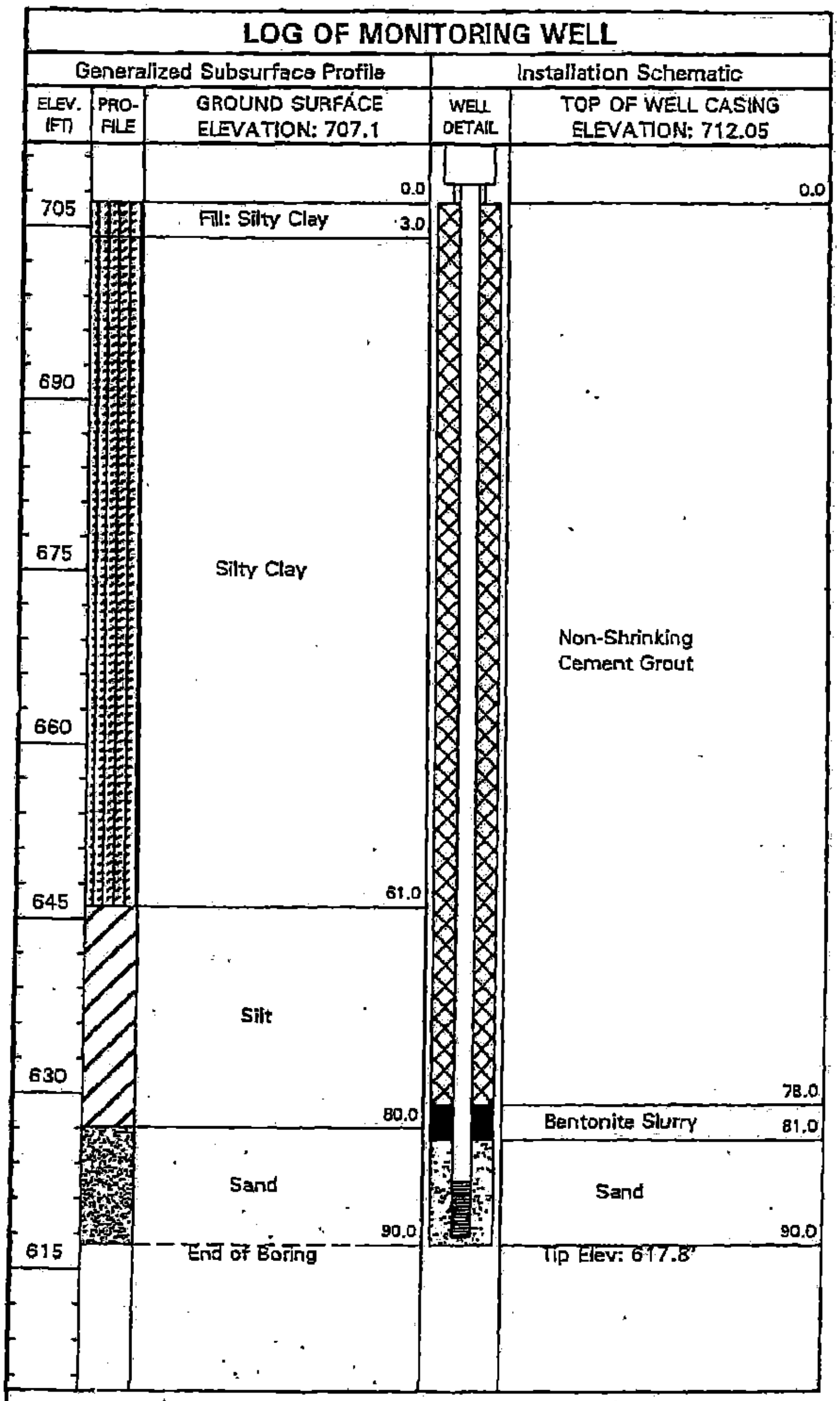
Project Name: *WAYNE DISPOSAL, INC.*

Project Location: *BELLEVILLE, MICHIGAN*

NTH Proj. No: *13-020395-01*

Checked By: RBM

LOG OF MONITORING WELL



GROUNDWATER DATA

DATE	ELEV. (ft.)	COMMENTS
06-24-03	n/a	due to use of drilling fluids

NOTES

[1] For details of subsurface strata, see Log of Test Boring OB-34A.

Started: *06/23/03*
Completed: *06/24/03*
Inspector: *K. Warning*
Contractor: *American Drilling & Testing Co.*
Driller: *R. Rumptz / H. Pace*
Equipment: *CME-750 & CME-550*
Well Type: *Monitoring*

Casing Diameter: *2.0 in*
Casing Length: *89.25 ft*
Casing Type: *Stainless Steel*
Screen Diameter: *2.0 in*
Screen Length: *5.0 ft*
Screen Mesh: *0.007 in*
Screen Type: *Stainless Steel*

FIGURE NO.

MONITORING WELL NO: OB-35A

NTH CONSULTANTS, LTD.

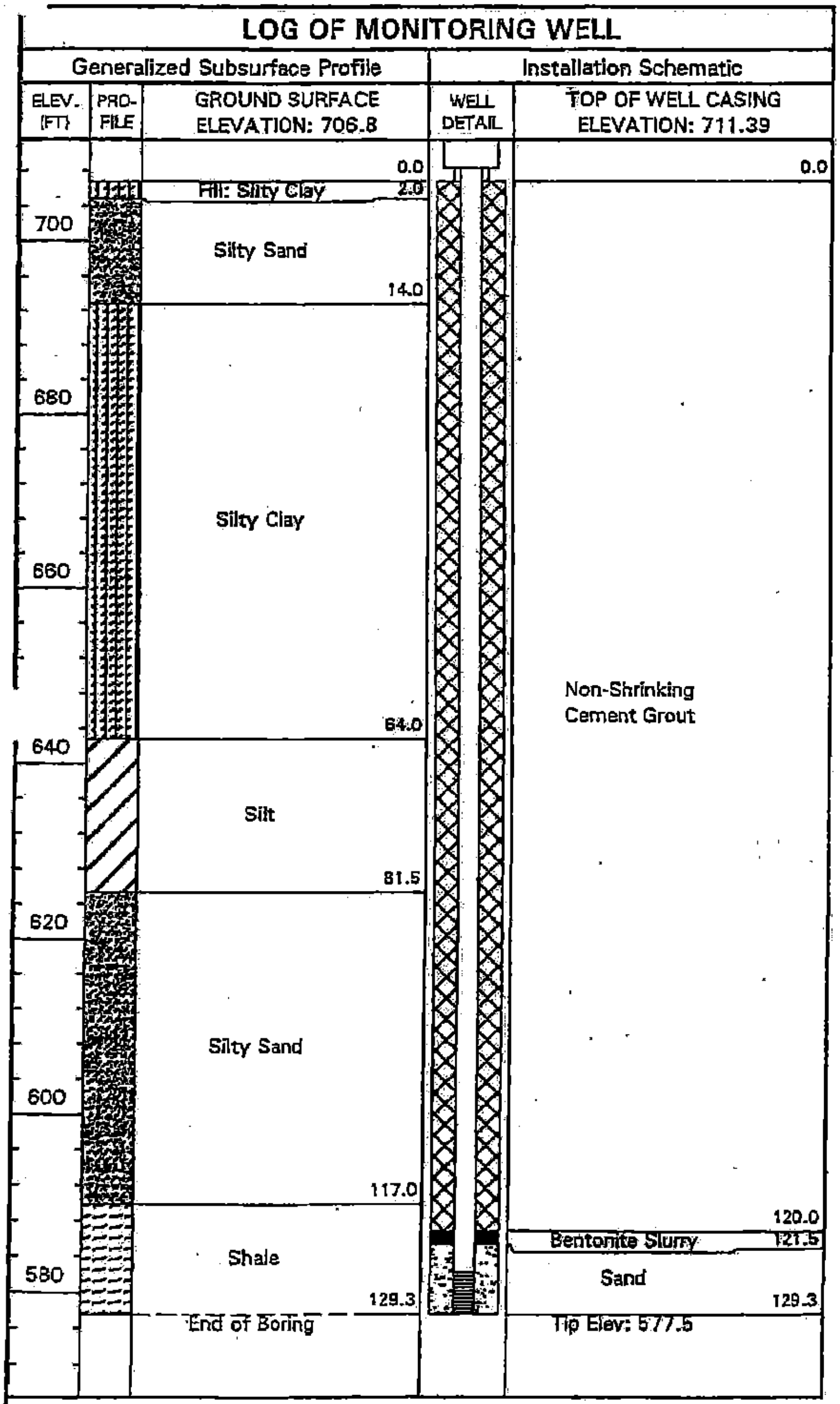
Project Name: *WAYNE DISPOSAL, INC.*

Project Location: *BELLEVILLE, MICHIGAN*

NTH Proj. No: *13-020395-01*

Checked By: RBM

LOG OF MONITORING WELL



GROUNDWATER DATA

DATE	ELEV. (ft.)	COMMENTS
06-24-03	n/a	due to use of drilling fluids

NOTES

[1] For details of subsurface strata, see Log of Test Boring OB-35A.

Started: *06/19/03*
Completed: *06/20/03*
Inspector: *K. Warning*
Contractor: *American Drilling & Testing Co.*
Driller: *R. Rumptz / H. Pace*
Equipment: *CME-750 & CME-550*
Well Type: *Monitoring*

Casing Diameter: *2.0 in*
Casing Length: *128.89 ft*
Casing Type: *Stainless Steel*
Screen Diameter: *2.0 in*
Screen Length: *5.0 ft*
Screen Mesh: *0.007 in*
Screen Type: *Stainless Steel*

FIGURE NO.

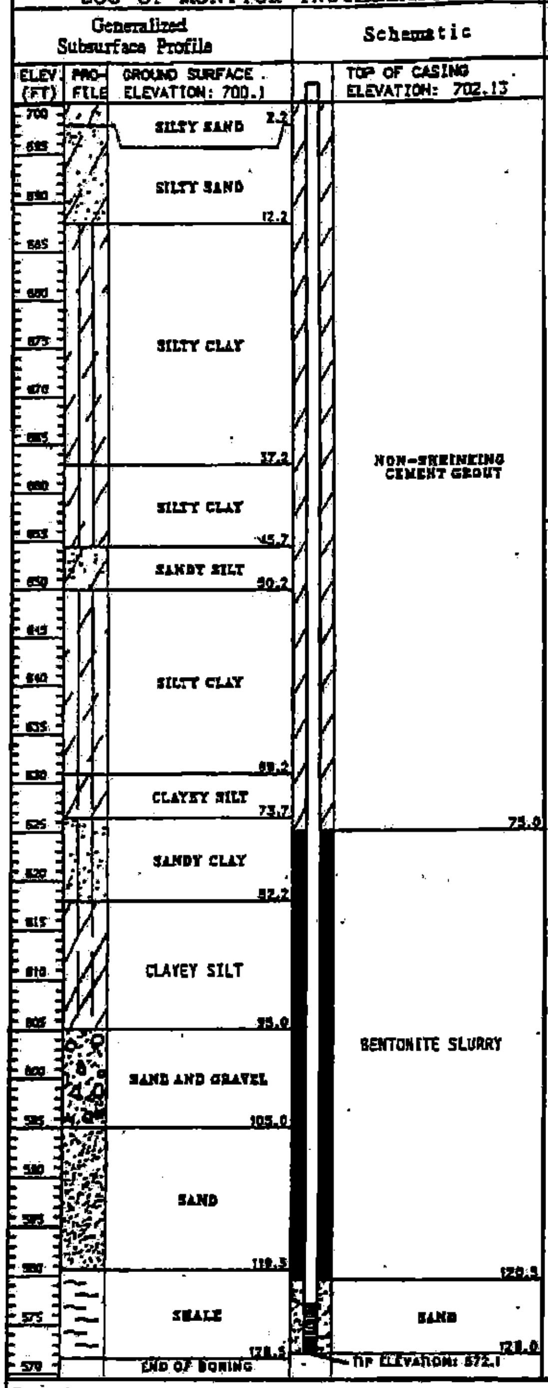
NEYER, TISEO & HINDO, LTD.

MONITOR WELL NO. OB-36

Project Name: WAYNE DISPOSAL LANDFILL - SITE NO. 2
Project Location: VAN BUREN TWP., WAYNE COUNTY, MICHIGAN

NTH Pro. No. 94315 OW
Chk. By: RLB

LOG OF MONITOR INSTALLATION



GROUNDWATER DATA

Date	Ground-water Elev.(ft)	Comments
10/22/87	649.70	

NOTES :

[1] FOR DETAILS OF SUBSURFACE STRATA, SEE LOG OF TEST BORING NO. OB-36

[2] TOP OF CASING AND GROUND SURFACE ELEVATIONS PROVIDED BY WAYNE DISPOSAL, INC.

Started:	10/1/87
Completed:	10/1/87
Inspector:	M. TAKACS / R. BURNS
Driller:	S. REMPALSKI
Contractor:	MATECO DRILLING COMPANY
Equipment:	CME-550
Observation Type:	MONITORING WELL

Casing Diam.:	2"
Casing Length:	125'
Casing Type:	70' GAVL / 55' SS
Screen Diam.:	2"
Screen Length:	5'
Screen Mesh:	0.007"
Screen Type:	STAINLESS STEEL

Figure No. 15

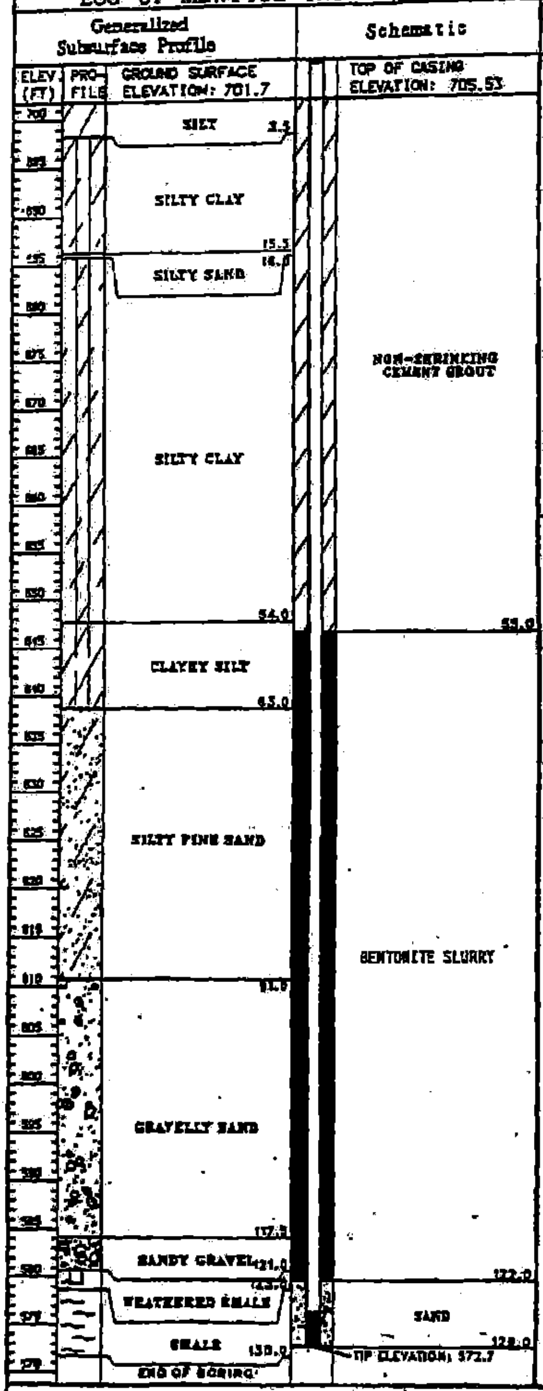
NEYER, TISEO & HINDO, LTD.

MONITOR WELL NO. OB-37

Project Name: WAYNE DISPOSAL LANDFILL – SITE NO. 2
Project Location: VAN BUREN TWP., WAYNE COUNTY, MICHIGAN

NTH Pro. No. 94315 OW
Chk. By: RLB

LOG OF MONITOR INSTALLATION



GROUNDWATER DATA

Date	Ground-water Elev.(ft)	Comments
7/25/87	663.21	
7/28/87	652.10	

NOTES :

[1] FOR DETAILS OF SUBSURFACE STRATA, SEE LOG OF TEST BORING NO. OB-37

[2] TOP OF CASING AND GROUND SURFACE ELEVATIONS PROVIDED BY WAYNE DISPOSAL, INC.

Started:	9/23/87
Completed:	9/24/87
Inspector:	R. BURNS
Driller:	S. REMPALSKI
Contractor:	MATECO DRILLING COMPANY
Equipment:	CME-550
Observation Type:	MONITORING WELL

Casing Diam.:	2"
Casing Length:	129.3'
Casing Type:	54.3' GALV. / 75' SS
Screen Diam.:	2"
Screen Length:	3.5'
Screen Mesh:	0.01"
Screen Type:	STAINLESS STEEL

Figure No. 16

NEYER, TISEO & HINDO, LTD.

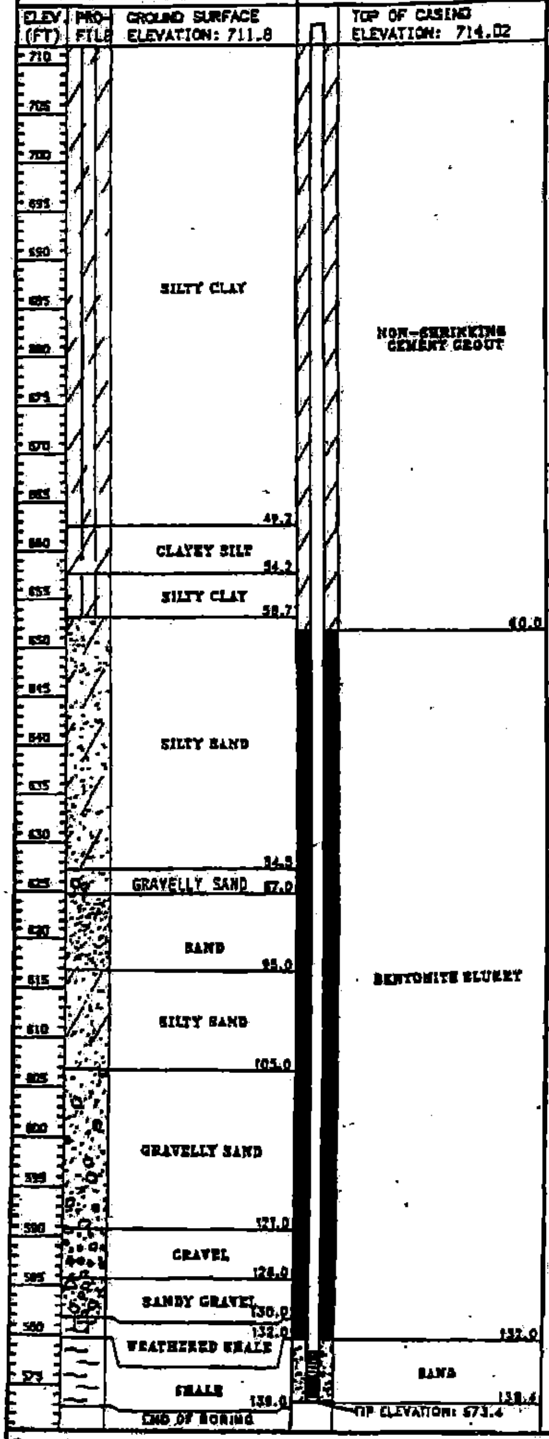
MONITOR WELL NO. OB-38

Project Name: WAYNE DISPOSAL LANDFILL - SITE NO. 2
Project Location: VAN BUREN TWP., WAYNE COUNTY, MICHIGAN

NTH Pro. No. 94315 OW
Chk. By: RLB

LOG OF MONITOR INSTALLATION

Generalized Subsurface Profile | Schematic



GROUNDWATER DATA

Date	Ground-water Elev. (ft)	Comments
9/18/87	653.12	
9/23/87	651.13	
9/24/87	651.02	
9/25/87	650.86	
9/28/87	650.70	

NOTES :

[1] FOR DETAILS OF SUBSURFACE STRATA, SEE LOG OF TEST BORING NO. OB-38

[2] TOP OF CASING AND GROUND SURFACE ELEVATIONS PROVIDED BY WAYNE DISPOSAL, INC.

Started:	9/9/87
Completed:	9/10/87
Inspector:	R. BURNS / M. TAKACS
Driller:	S. KEMPALSKI
Contractor:	MATECO DRILLING COMPANY
Equipment:	CME-550
Observation Type:	MONITORING WELL

Casing Diam.:	2"
Casing Length:	137.1'
Casing Type:	50.1' GALV. / 87' SS
Screen Diam.:	2"
Screen Length:	3.5'
Screen Mesh:	0.01"
Screen Type:	STAINLESS STEEL

Figure No. 17

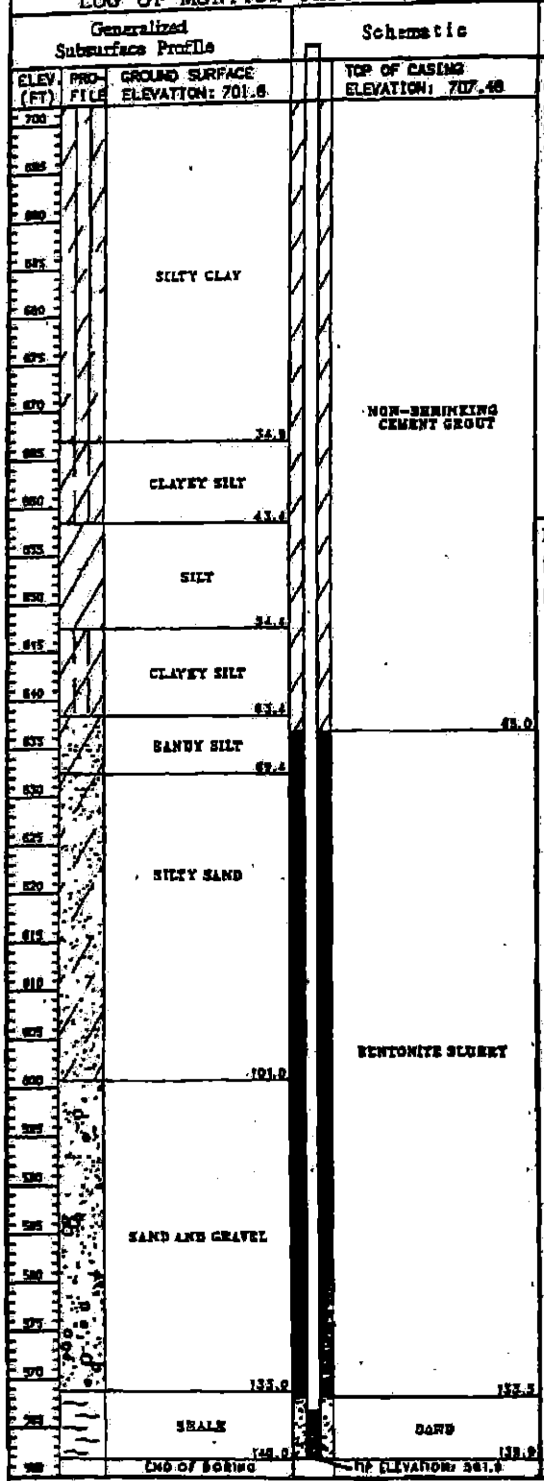
NEYER, TISEO & HINDO, LTD.

MONITOR WELL NO. OB-39

Project Name: WAYNE DISPOSAL LANDFILL – SITE NO. 2
Project Location: VAN BUREN TWP., WAYNE COUNTY, MICHIGAN

NTH Pro. No. 94315 OW
Chk. By: RLB

LOG OF MONITOR INSTALLATION



GROUNDWATER DATA

Date	Groundwater Elev. (ft)	Comments
9/1/87	652.28	
9/4/87	651.50	
9/9/87	650.88	
9/22/87	650.50	

NOTES :

[1] FOR DETAILS OF SUBSURFACE STRATA, SEE LOG OF TEST BORING NO. OB-39

[2] TOP OF CASING AND GROUND SURFACE ELEVATIONS PROVIDED BY WAYNE DISPOSAL, INC.

Started:	8/31/87
Completed:	9/1/87
Inspector:	R. BURNS
Driller:	S. REMPALSKI
Contractor:	MATECO DRILLING COMPANY
Equipment:	CME-550
Observation Type:	MONITORING WELL

Casing Diam.:	2"
Casing Length:	140.4'
Casing Type:	65.4' GALV. / 75' SS
Screen Diam.:	2"
Screen Length:	5'
Screen Mesh:	0.007"
Screen Type:	STAINLESS STEEL

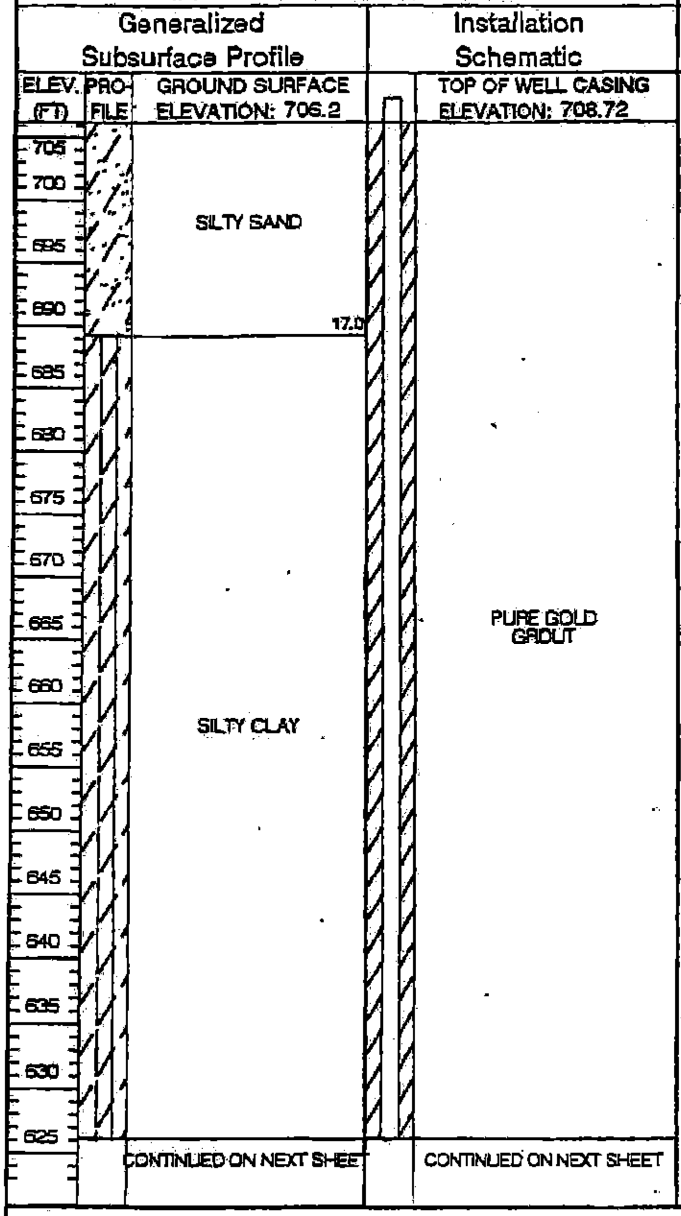
Figure No. 18

NTH Consultants, Ltd.

MONITORING WELL NO. OB-40R

Project Name : WAYNE DISPOSAL, INC. - SITE NO. 2
NTH Proj. No: 13-3051 00
Project Location : VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN
Checked By : ACE

LOG OF MONITORING WELL



GROUNDWATER DATA

Date	Ground-water Elev. (ft)	Comments
02/01/93	659.72	BEFORE DEVELOPMENT
02/09/93	658.14	BEFORE DEVELOPMENT
02/25/93	656.69	

NOTES :

[1] FOR DETAILS OF SUBSURFACE STRATA, SEE LOG OF TEST BORING NO. OB-40R.

[2] TOP OF CASING & GROUND SURFACE ELEVATIONS PROVIDED BY WAYNE DISPOSAL, INC.

[3] WELL INSTALLED TO REPLACE MONITORING WELL NO. OB-40.

[4] CENTRALIZERS WERE USED TO MAINTAIN THE VERTICALITY OF THE WELL ASSEMBLY IN THE BOREHOLE.

FIELD MEASUREMENTS DURING DRILLING:

pH: 8.10
SPEC. COND: 310 μmhos/cm

FIELD MEASUREMENTS AFTER DEVELOPMENT:

pH: 8.03
SPEC. COND: 302 μmhos/cm

Started: 01/29/93
Completed: 02/01/93
Inspector: C. ENDLER
Driller: G. QUALLS
Contractor: GEO-TEK, INC.
Equipment: CME-750 ALL-TERRAIN DRILLING RIG
Well Type: MONITORING

Casing Diameter: 2.0"
Casing Length: 93.5'
Casing Type: STAINLESS STEEL
Screen Diameter: 2.0"
Screen Length: 5.0'
Screen Mesh: 0.007"
Screen Type: STAINLESS STEEL

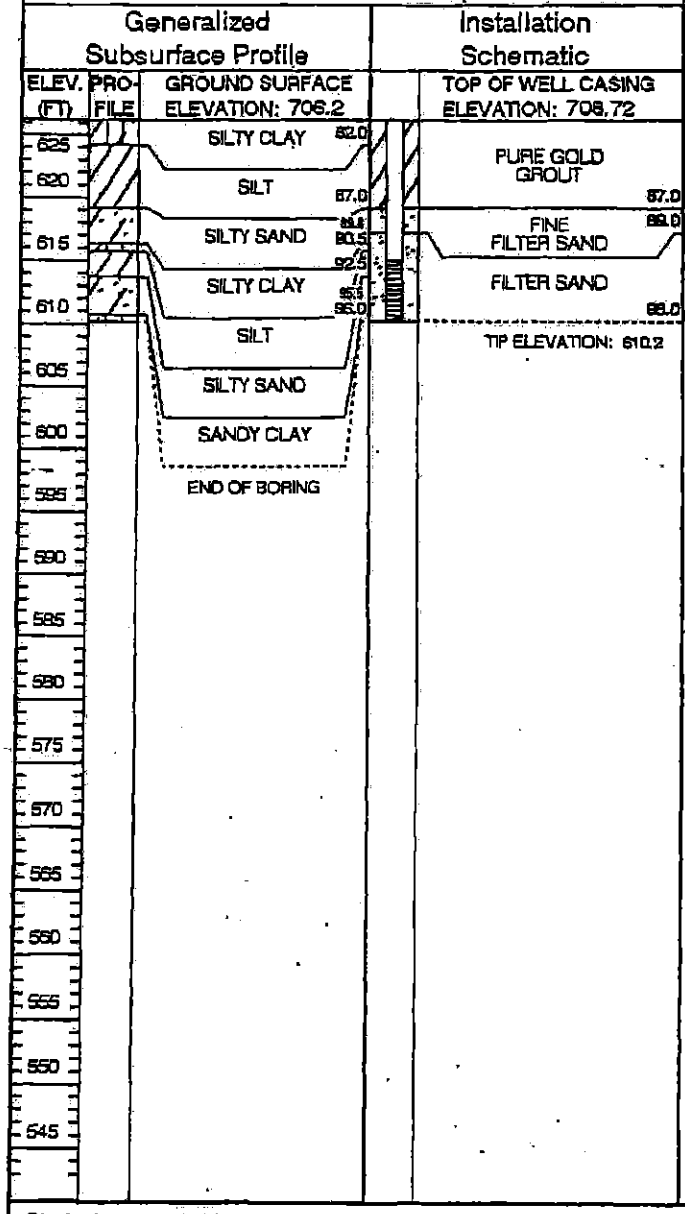
Figure No. A-6a

NTH Consultants, Ltd.

MONITORING WELL NO. OB-40R

Project Name : WAYNE DISPOSAL, INC. - SITE NO. 2
NTH Proj. No: 13-3051 00
Project Location : VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN
Checked By : ACE

LOG OF MONITORING WELL



GROUNDWATER DATA

Date	Ground-water Elev. (ft)	Comments
02/01/93	659.72	BEFORE DEVELOPMENT
02/09/93	658.14	BEFORE DEVELOPMENT
02/25/93	656.69	

NOTES :

[1] FOR DETAILS OF SUBSURFACE STRATA, SEE LOG OF TEST BORING NO. OB-40R.

[2] TOP OF CASING & GROUND SURFACE ELEVATIONS PROVIDED BY WAYNE DISPOSAL, INC.

[3] WELL INSTALLED TO REPLACE MONITORING WELL NO. OB-40.

[4] CENTRALIZERS WERE USED TO MAINTAIN THE VERTICALITY OF THE WELL ASSEMBLY IN THE BOREHOLE.

FIELD MEASUREMENTS DURING DRILLING:

pH: 8.10
SPEC. COND: 310 µmhos/cm

FIELD MEASUREMENTS AFTER DEVELOPMENT:

pH: 8.03
SPEC. COND: 302 µmhos/cm

Started: 01/29/93
Completed: 02/01/93
Inspector: C. ENDLER
Driller: G. QUALLS
Contractor: GEO-TEK, INC.
Equipment: CME-750 ALL-TERRAIN DRILLING RIG
Well Type: MONITORING

Casing Diameter: 2.0"
Casing Length: 93.5'
Casing Type: STAINLESS STEEL
Screen Diameter: 2.0"
Screen Length: 5.0'
Screen Mesh: 0.007"
Screen Type: STAINLESS STEEL

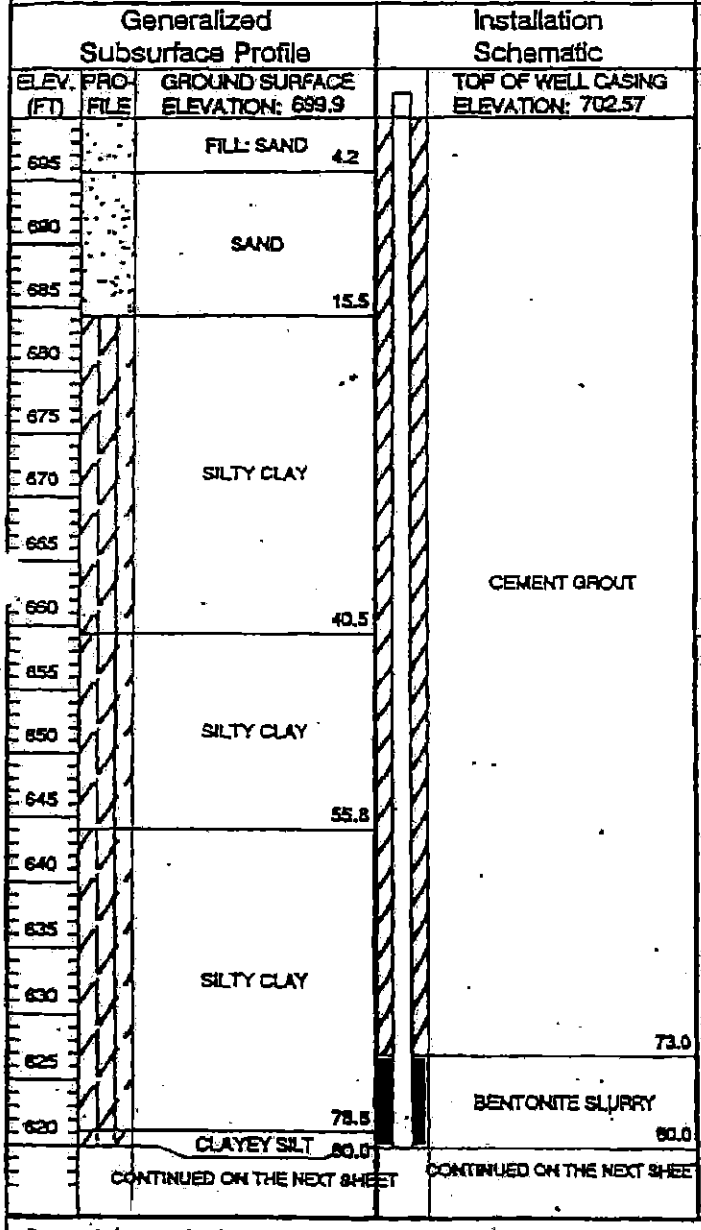
Figure No. A-6b

NTH Consultants, Ltd.

MONITORING WELL NO. OB-47

Project Name : MICHIGAN DISPOSAL, INCORPORATED NTH Proj. No: 90323 OW
Project Location : VAN BUREN TWP, WAYNE COUNTY, MICHIGAN Check By :

LOG OF MONITORING WELL



GROUNDWATER DATA

Date	Ground-water Elev.(ft)	Comments
07/12/90	652.96	
07/16/90	652.95	

NOTES :

[1] FOR DETAILS OF SUBSURFACE STRATIGRAPHY, SEE LOG OF TEST BORING OB-47.
[2] WELL DEVELOPED WITH COMPRESSED AIR ON 07/16/90.
[3] TOP OF CASING AND GROUND SURFACE ELEVATIONS DETERMINED BY WDI PERSONNEL.
[4] DEPTH TO FIRST COUPLING IS 0.3 FEET BELOW GROUND SURFACE; SECOND COUPLING IS 10.3 FEET BELOW GROUND SURFACE.

Started: 07/02/90
Completed: 07/12/90
Inspector: G. CROCKFORD
Driller: M. PUFFPAFF
Contractor: ENVIRONMENTAL DRILLING & SERVICES, INC.
Equipment: FAILING F-7
Well Type: MONITORING WELL

Casing Diameter: 2" I.D.
Casing Length: 103 FT
Casing Type: 60'-STAINLESS/43' GALVANIZED
Screen Diameter: 2"
Screen Length: 5'
Screen Mesh: .007
Screen Type: STAINLESS STEEL

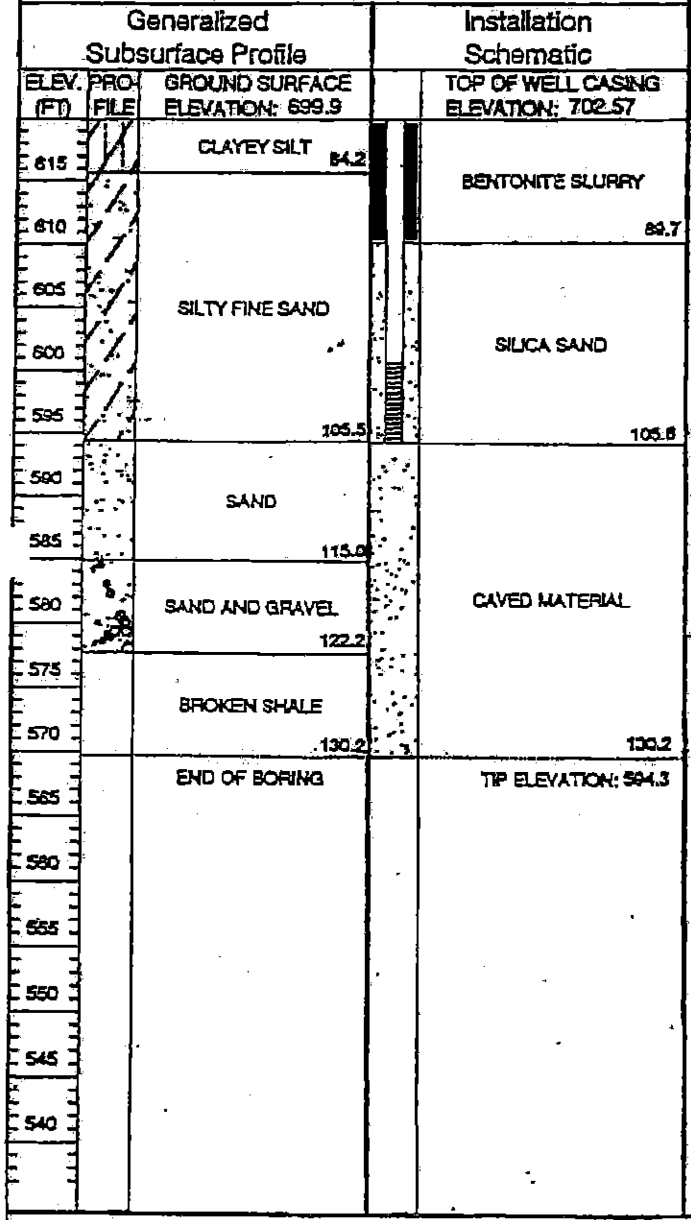
Figure No. 2

NTH Consultants, Ltd.

MONITORING WELL NO. OB-47

Project Name : MICHIGAN DISPOSAL, INCORPORATED
NTH Proj. No: 90323 OW
Project Location : VAN BUREN TWP, WAYNE COUNTY, MICHIGAN
Check By :

LOG OF MONITORING WELL



GROUNDWATER DATA

Date	Ground-water Elev.(ft)	Comments
07/12/90	652.96	
07/16/90	652.85	

NOTES :

[1] FOR DETAILS OF SUBSURFACE STRATIGRAPHY, SEE LOG OF TEST BORING OB-47.

[2] WELL DEVELOPED WITH COMPRESSED AIR ON 07/16/90.

[3] TOP OF CASING AND GROUND SURFACE ELEVATIONS DETERMINED BY WDI PERSONNEL.

[4] DEPTH TO FIRST COUPLING IS 0.3 FEET BELOW GROUND SURFACE; SECOND COUPLING IS 10.3 FEET BELOW GROUND SURFACE.

Started: 07/02/90
Completed: 07/12/90
Inspector: G. CROCKFORD
Driller: M. PUFFPAFF
Contractor: ENVIRONMENTAL DRILLING & SERVICES, INC.
Equipment: FAILING F-7
Well Type: MONITORING WELL

Casing Diameter: 2" I.D.
Casing Length: 103 FT
Casing Type: 60' STAINLESS/43' GALVANIZED
Screen Diameter: 2"
Screen Length: 5'
Screen Mesh: .007"
Screen Type: STAINLESS STEEL

Figure No. 2

OBSERVATION WELL NO: WM 08-48

NTH CONSULTANTS, LTD.

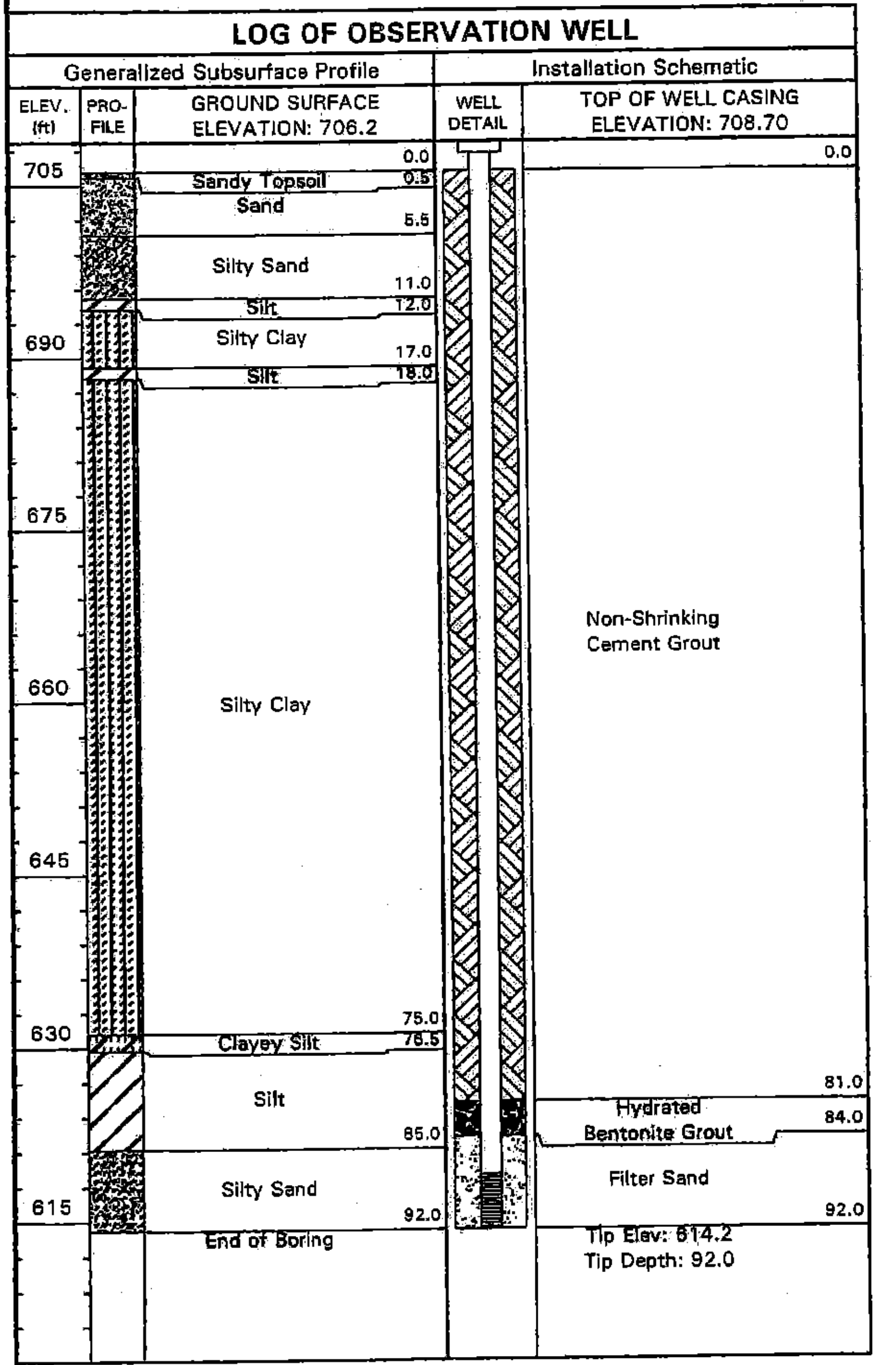
Project Name: *WAYNE DISPOSAL, INC. - WOOD LOT*

Project Location: *BELLEVILLE, MICHIGAN*

NTH Proj. No: *62-080376-01*

Checked By: dlp

LOG OF OBSERVATION WELL



Generalized Subsurface Profile

ELEV. (ft)	GROUND SURFACE ELEVATION: 706.2	Depth (ft)
		0.0
705	Sandy Topsoil	0.5
	Sand	5.5
	Silty Sand	11.0
	Silt	12.0
690	Silty Clay	17.0
	Silt	18.0
675		
660	Silty Clay	
645		
		75.0
630	Clayey Silt	76.5
	Silt	85.0
615	Silty Sand	92.0
	End of Boring	

Installation Schematic

TOP OF WELL CASING ELEVATION: 708.70	Depth (ft)
	0.0
Non-Shrinking Cement Grout	81.0
Hydrated Bentonite Grout	84.0
Filter Sand	92.0

Tip Elev: 614.2
Tip Depth: 92.0

GROUNDWATER DATA

DATE	ELEV. (ft.)	COMMENTS
12-07-08	655.21	
02-09-09	655.10	

NOTES

[1] For details of subsurface strata, see Log of Test Boring TB-W-1.

[2] Location Coordinates: E 3690.00
N 7660.02

Started: *07-16-08*
Completed: *07-16-08*
Inspector: *M. McNamara*
Contractor: *Mateco Drilling Co.*
Driller: *J. Pitsch*
Equipment: *CME-750 ATV Drill Rig*
Well Type: *Observation*

Casing Diameter: *2.0 in*
Casing Length: *89.5 ft*
Casing Type: *PVC*
Screen Diameter: *2.0 in*
Screen Length: *5.0 ft*
Screen Mesh: *0.010 in*
Screen Type: *PVC*

FIGURE NO. B-15

MONITORING WELL: MW-OB-49

Project Name: WDI Groundwater Wells
Project Location: Belleville, Michigan

NTH Consultants, Ltd.
NTH Proj. No.: 13-060921-20
Checked By: CRK

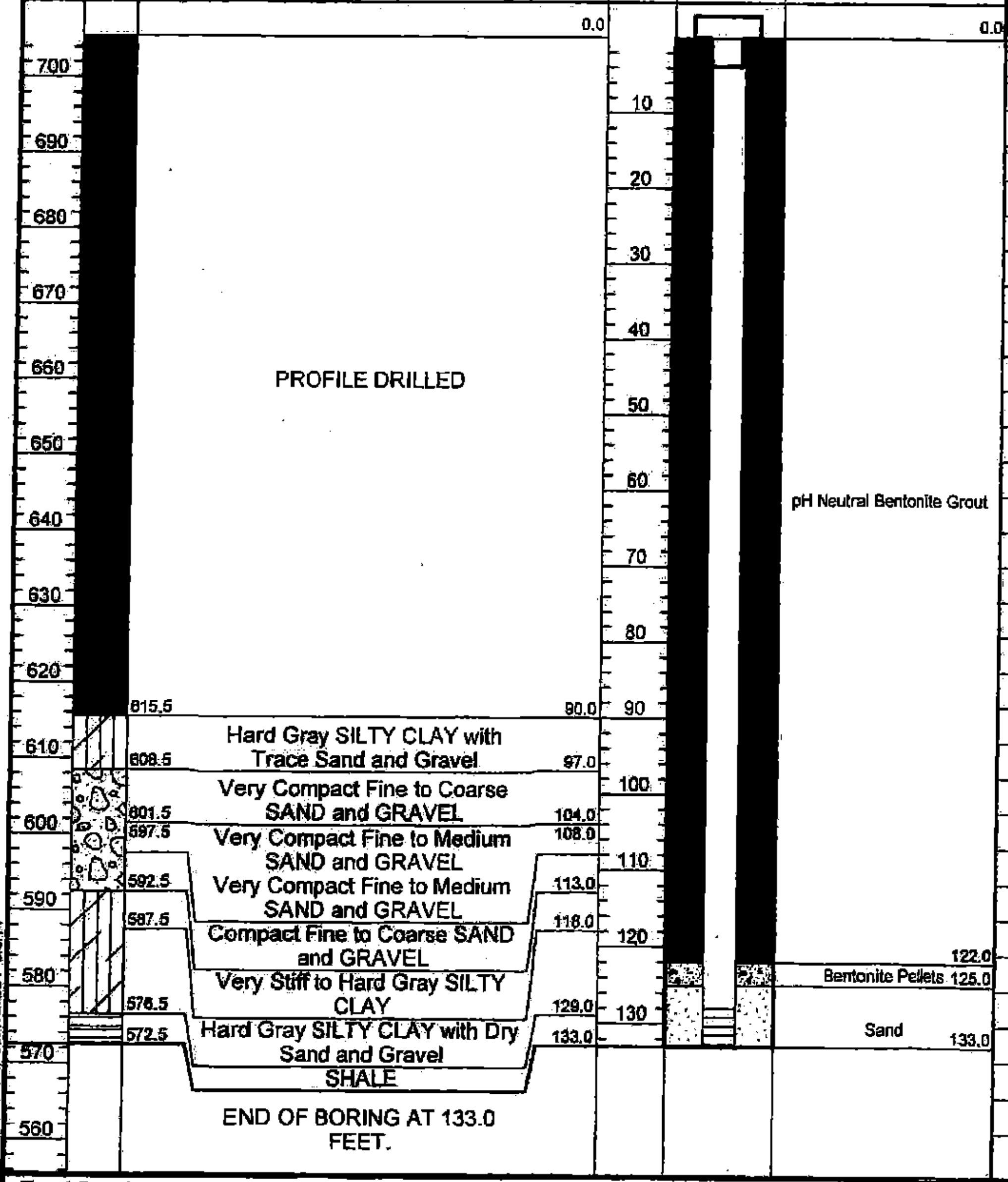
LOG OF MONITORING WELL

SUBSURFACE PROFILE

GROUND SURFACE ELEVATION: 705.5

INSTALLATION SCHEMATIC

TOP OF WELL CASING ELEVATION: 708.0 ft



ELEV		DEPTH
		0.0
	PROFILE DRILLED	
615.5		90.0
	Hard Gray SILTY CLAY with Trace Sand and Gravel	
608.5		97.0
	Very Compact Fine to Coarse SAND and GRAVEL	
601.5		104.0
597.5	Very Compact Fine to Medium SAND and GRAVEL	108.0
592.5	Very Compact Fine to Medium SAND and GRAVEL	113.0
587.5	Compact Fine to Coarse SAND and GRAVEL	118.0
	Very Stiff to Hard Gray SILTY CLAY	
576.5		129.0
572.5	Hard Gray SILTY CLAY with Dry Sand and Gravel	133.0
	SHALE	

END OF BORING AT 133.0 FEET.

GAS DATA

DATE	ELEV (FT)	Gas Reading

Total Depth: *133.0 FT*
Installation Date: *5/7/2014*
Inspector: *M. McNamara*
Contractor: *Mateco*
Driller: *Gary Swift*
Equipment: *CME-55 track mounted ATV rig with 4-1/4" I.D. HSA to EOB.*

Notes:

Casing Diameter: *2"*
Casing Length: *130'*
Casing Type: *Stainless Steel*
Tip Elevation: *572.5*
GPS Coordinates:

Screen Diameter: *2"*
Screen Length: *5'*
Screen Mesh: *0.010"*
Screen Type: *Stainless Steel*

Well Type: *MONITORING WELL*

Figure No. 6

MONITORING WELL: MW-OB-50

Project Name: WDI Groundwater Wells
Project Location: Belleville, Michigan

NTH Consultants, Ltd.
NTH Proj. No.: 13-060921-20
Checked By: CRK

LOG OF MONITORING WELL

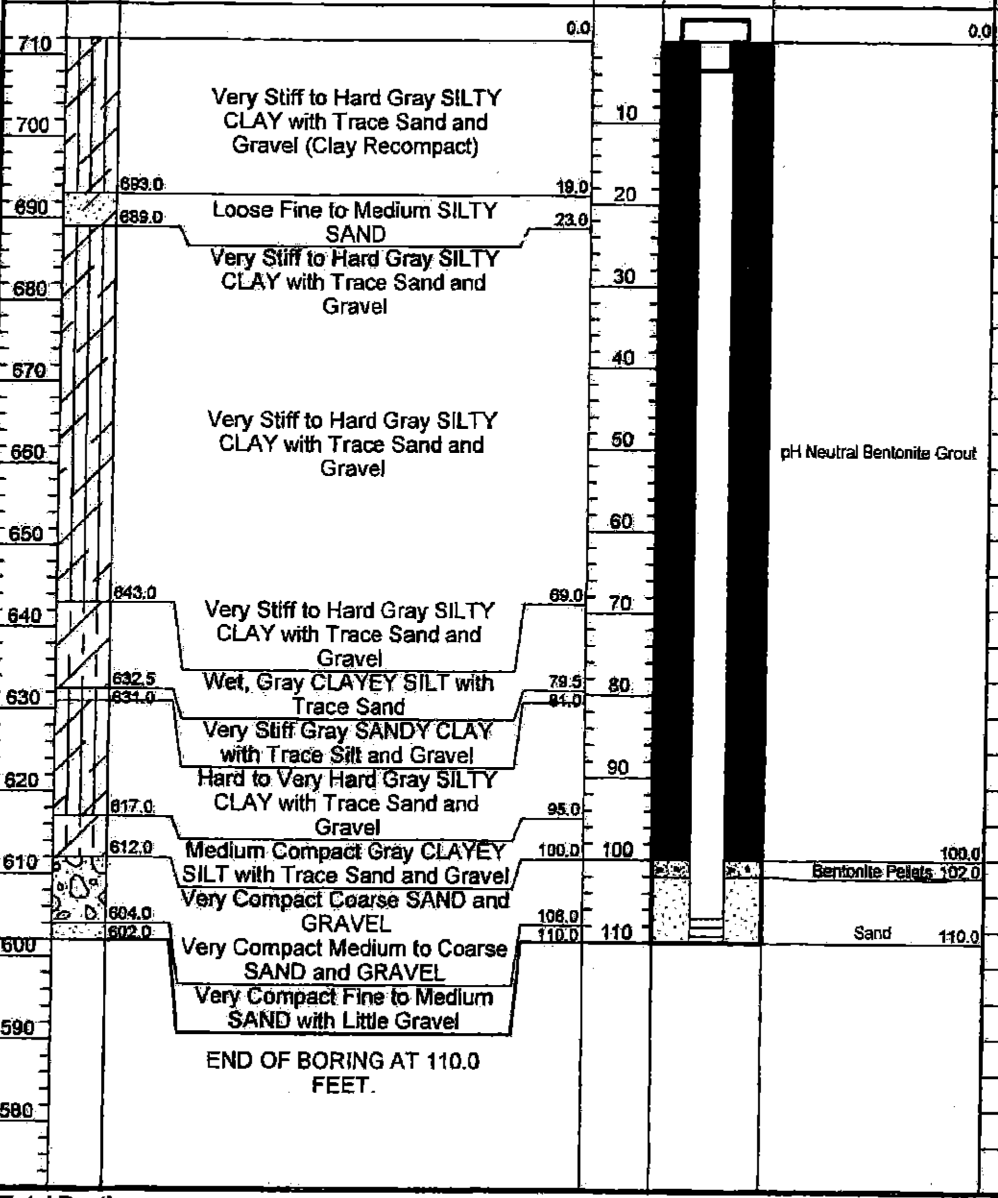
SUBSURFACE PROFILE

GROUND SURFACE ELEVATION: 712.0

INSTALLATION SCHEMATIC

Well Detail

TOP OF WELL CASING ELEVATION: 715.4 ft



ELEV		DEPTH
		0.0
	Very Stiff to Hard Gray SILTY CLAY with Trace Sand and Gravel (Clay Recompact)	
693.0		19.0
	Loose Fine to Medium SILTY SAND	
689.0		23.0
	Very Stiff to Hard Gray SILTY CLAY with Trace Sand and Gravel	
	Very Stiff to Hard Gray SILTY CLAY with Trace Sand and Gravel	
643.0		69.0
	Very Stiff to Hard Gray SILTY CLAY with Trace Sand and Gravel	
632.5		79.5
	Wet, Gray CLAYEY SILT with Trace Sand	
631.0		81.0
	Very Stiff Gray SANDY CLAY with Trace Silt and Gravel	
	Hard to Very Hard Gray SILTY CLAY with Trace Sand and Gravel	
617.0		95.0
	Medium Compact Gray CLAYEY SILT with Trace Sand and Gravel	
612.0		100.0
	Very Compact Coarse SAND and GRAVEL	
604.0		108.0
602.0		110.0
	Very Compact Medium to Coarse SAND and GRAVEL	
	Very Compact Fine to Medium SAND with Little Gravel	

END OF BORING AT 110.0 FEET.

GAS DATA

DATE	ELEV (FT)	Gas Reading

Total Depth: 110.0 FT
Installation Date: 4/29/2014
Inspector: M. McNamara
Contractor: Mateco
Driller: Gary Swift
Equipment: CME-55 track mounted ATV rig with 4-1/4" I.D. HSA to EOB.

Notes:

Casing Diameter: 2"
Casing Length: 108.43'
Casing Type: PVC
Tip Elevation: 602.43
GPS Coordinates:

Screen Diameter: 2"
Screen Length: 5'
Screen Mesh: 0.007"
Screen Type: PVC

Well Type: MONITORING WELL

Figure No. 7

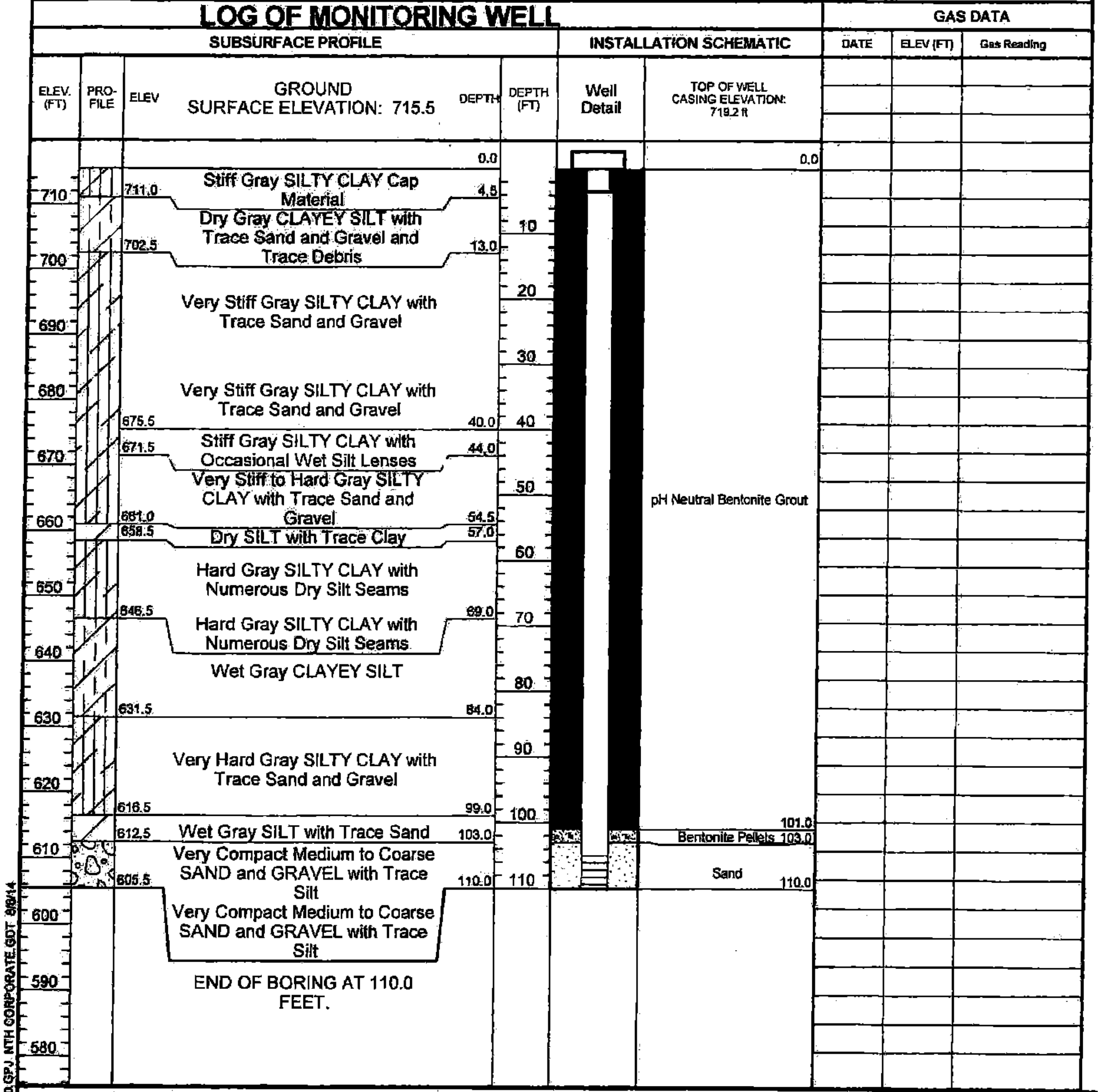
MONITORING WELL: MW-OB-51

NTH Consultants, Ltd.

Project Name: WDI Groundwater Wells
Project Location: Belleville, Michigan

NTH Proj. No.: 13-060921-20
Checked By: CRK

LOG OF MONITORING WELL



GROUND SURFACE ELEVATION: 715.5

ELEV	DESCRIPTION	DEPTH
		0.0
711.0	Stiff Gray SILTY CLAY Cap Material	4.5
702.5	Dry Gray CLAYEY SILT with Trace Sand and Gravel and Trace Debris	13.0
	Very Stiff Gray SILTY CLAY with Trace Sand and Gravel	
675.5	Very Stiff Gray SILTY CLAY with Trace Sand and Gravel	40.0
671.5	Stiff Gray SILTY CLAY with Occasional Wet Silt Lenses	44.0
661.0	Very Stiff to Hard Gray SILTY CLAY with Trace Sand and Gravel	54.5
658.5	Dry SILT with Trace Clay	57.0
	Hard Gray SILTY CLAY with Numerous Dry Silt Seams	
646.5	Hard Gray SILTY CLAY with Numerous Dry Silt Seams	69.0
631.5	Wet Gray CLAYEY SILT	84.0
616.5	Very Hard Gray SILTY CLAY with Trace Sand and Gravel	99.0
612.5	Wet Gray SILT with Trace Sand	103.0
605.5	Very Compact Medium to Coarse SAND and GRAVEL with Trace Silt	110.0
	Very Compact Medium to Coarse SAND and GRAVEL with Trace Silt	

END OF BORING AT 110.0 FEET.

Total Depth: *110.0 FT*
Installation Date: *4/24/2014*
Inspector: *M. McNamara*
Contractor: *Mateco*
Driller: *Gary Swift*
Equipment: *CME-55 track mounted ATV rig with 4-1/4" I.D. HSA to EOB.*

Notes:

Casing Diameter: *2"*
Casing Length: *108.69'*
Casing Type: *PVC*
Tip Elevation: *606.19*
GPS Coordinates:

Screen Diameter: *2"*
Screen Length: *5'*
Screen Mesh: *0.007"*
Screen Type: *PVC*

Well Type: *MONITORING WELL*

Figure No. 8

MONITORING WELL: MW-OB-52

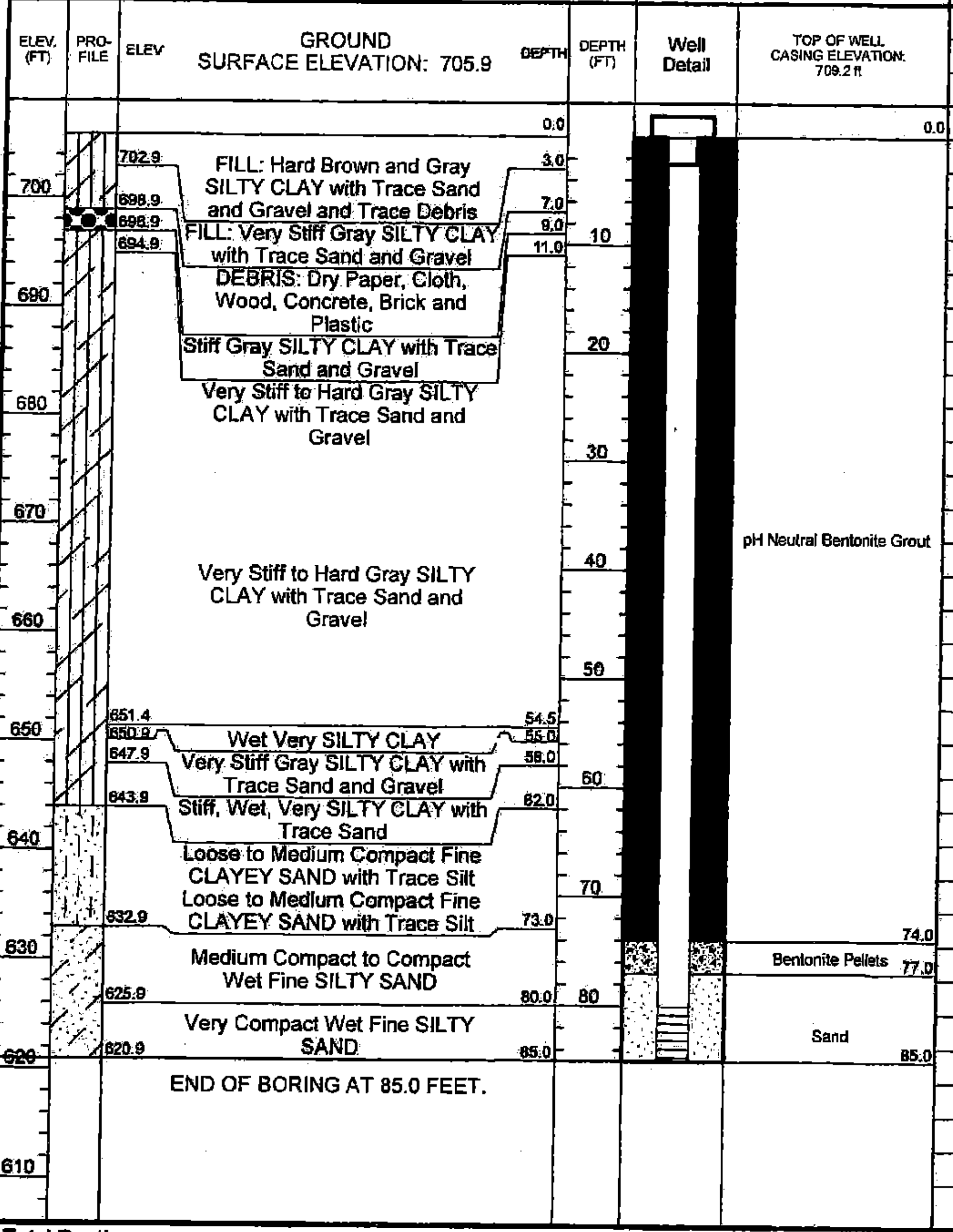
Project Name: WDI Groundwater Wells
Project Location: Belleville, Michigan

NTH Consultants, Ltd.
NTH Proj. No.: 13-060921-20
Checked By: CRK

LOG OF MONITORING WELL

SUBSURFACE PROFILE

GROUND SURFACE ELEVATION: 705.9



ELEV		DEPTH
		0.0
702.9		3.0
	FILL: Hard Brown and Gray SILTY CLAY with Trace Sand and Gravel and Trace Debris	
698.9		7.0
	FILL: Very Stiff Gray SILTY CLAY with Trace Sand and Gravel	
696.9		9.0
	DEBRIS: Dry Paper, Cloth, Wood, Concrete, Brick and Plastic	
694.9		11.0
	Stiff Gray SILTY CLAY with Trace Sand and Gravel	
	Very Stiff to Hard Gray SILTY CLAY with Trace Sand and Gravel	
	Very Stiff to Hard Gray SILTY CLAY with Trace Sand and Gravel	
651.4		54.5
	Wet Very SILTY CLAY	
650.9		55.0
	Very Stiff Gray SILTY CLAY with Trace Sand and Gravel	
647.9		58.0
	Stiff, Wet, Very SILTY CLAY with Trace Sand	
643.9		62.0
	Loose to Medium Compact Fine CLAYEY SAND with Trace Silt	
	Loose to Medium Compact Fine CLAYEY SAND with Trace Silt	
632.9		73.0
	Medium Compact to Compact Wet Fine SILTY SAND	
625.9		80.0
	Very Compact Wet Fine SILTY SAND	
620.9		85.0
	END OF BORING AT 85.0 FEET.	

GAS DATA

DATE	ELEV (FT)	Gas Reading

Total Depth: 85.0 FT
Installation Date: 5/1/2014
Inspector: M. McNamara
Contractor: Mateco
Driller: Gary Swift
Equipment: CME-55 track mounted ATV rig with 4-1/4" I.D. HSA to EOB.

Notes:

Casing Diameter: 2"
Casing Length: 83.34'
Casing Type: PVC
Tip Elevation: 620.9
GPS Coordinates:

Screen Diameter: 2"
Screen Length: 5'
Screen Mesh: 0.007"
Screen Type: PVC

Well Type: MONITORING WELL

Figure No. 9

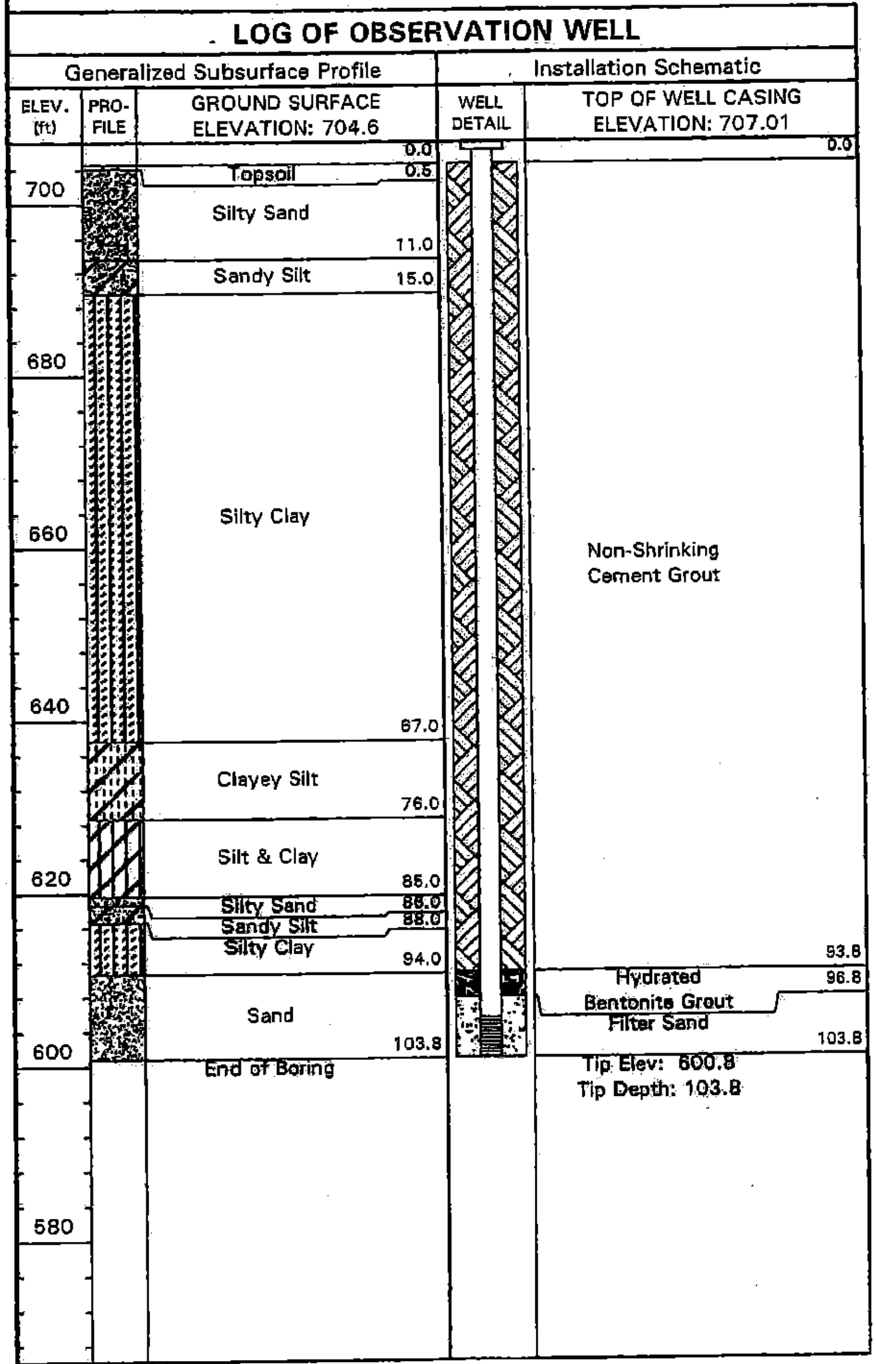
OBSERVATION WELL NO: ~~W-10B~~ OB-53

NTH CONSULTANTS, LTD.

Project Name: *WAYNE DISPOSAL, INC. - WOOD LOT*
Project Location: *BELLEVILLE, MICHIGAN*

NTH Proj. No: *62-080376-01*
Checked By: dlp

LOG OF OBSERVATION WELL



GROUNDWATER DATA

DATE	ELEV. (ft.)	COMMENTS
12-07-08	652.79	
02-09-09	652.77	

NOTES

[1] Generalized subsurface profile based on adjacent test boring TB-W-10.

[2] Location Coordinates: E 3704.07
N 7062.42

Started:	*07-12-08*
Completed:	*07-12-08*
Inspector:	*M. McNamara*
Contractor:	*Mateco Drilling Co.*
Driller:	*J. Pitsch*
Equipment:	*CME-750 ATV Drill Rig*
Well Type:	*Observation*

Casing Diameter:	*2.0 in*
Casing Length:	*101.2 ft*
Casing Type:	*PVC*
Screen Diameter:	*2.0 in*
Screen Length:	*5.0 ft*
Screen Mesh:	*0.010 in*
Screen Type:	*PVC*

FIGURE NO. B-18

Attachment C

Chain of Custody & Monitoring Well Inspection Log

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: of

Section A Required Client Information:	**Section B** Required Project Information:	**Section C** Invoice Information:
Company:	Report To:	Attention:
Address:	Copy To:	Company Name:
		Address:
Email To:	Purchase Order No.:	Pace Quote Reference:
Phone: Fax:	Project Name:	Pace Project Manager:
Requested Due Date/TAT:	Project Number:	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER ______

Site Location
STATE: ______

Section D
Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	 TIME	 COMPOSITE END/GRAB DATE	 TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved	 H_2SO_4	 HNO_3	 HCl	 NaOH	 $Na_2S_2O_3$	 Methanol	 Other	Y/N ↓ Analysis Test ↓													Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1																																
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

C-1

Instructions for completing Chain of Custody (COC)

1. **Section A and B:** Complete all Client information at top of sheet: company name, address, phone, fax, contact (the person to contact if there are questions, and who will receive the final report.), e-mail address (if available), PO#, Project Name and/or Project Number as you would like to see it appear on the report.

2. **Section C:** Invoice Information: Billing information is included in this section. This information should include the name and address of the person receiving the invoice.

3. Quote Reference should be completed if a quotation was provided by Pace Analytical. The Project Manager, and Profile No. will be completed by Pace Analytical Services.

4. **Site Location:** A separate COC must be filled out for each day of sample collection. Record the two letter postal code for the US state in which the samples were collected.

5. **Regulatory Agency:** List the program that is guiding the work to ensure proper regulations are followed.

6. **Section D:** Complete a Sample Description in the "SAMPLE ID' section as you would like it to appear on the laboratory report. The following information should also be included: the sample matrix, sample type (G (grab) or C (composite). When collecting a composite, the start time and end time should be documented in the respective boxes. The collection time for a grab (G) sample should be entered in the boxes marked 'Composite End/Grab'), Sample temp at collection (if required by state), the total number of containers, and preservative used.

7. Mark if the sample was filtered in the field by marking Y or N in 'Filtered' row by the Analysis requested.

8. Requested Analysis: List the required analysis and methods on the lines provided and place a check in the column for the samples requiring the analysis. Additional comments should be referenced in the bottom left hand corner or include attachments for extended lists of parameters.

9. The sampler should print their name in the space provided and sign their name followed by the date of the sampling event at the bottom of the COC in the spaces designated for 'SAMPLER NAME AND SIGNATURE'.

10. When relinquishing custody of the samples to a representative of the laboratory or other organization, indicate the Item Numbers of those samples being transferred; sign relinquished by, date and time, and include your affiliation.

***Important Note:**

Standard Turnaround Time is 2 Weeks/10 business days. Results will be delivered by end of business on the date due unless other arrangements have been made with your project manager.

Special Project Requirements such as Low Level Detection Limits or level of QC reported must be included on the chain of custody in the Additional Comments section.

Monitoring Well Inspection Log

Date: ____________________

Name: ____________________

Location: ____________________

Place checkmark for all items that are acceptable and provide comments (below) for those that are not.

Well ID	Well Locked	Annular Seal Intact	Ponded Water	Protective Casing	Markings Legible	Interior Casing	Pump Function
OB-1A							
OB-2A							
OB-3							
OB-4							
OB-5							
OB-6							
OB-7							
OB-8							
OB-9							
OB-10							
OB-11A							
OB-12R							
OB-13							
OB-14							
OB-15							
OB-16							
OB-18							
OB-19R							
OB-20							
OB-21							
OB-22							
OB-23A							
OB-24							
OB-25							
OB-26A							
OB-27A							
OB-28							
OB-29							
OB-30							
OB-31AR							
OB-32							
OB-34A							
OB-35A							
OB-36							

Well ID	Well Locked	Annular Seal Intact	Ponded Water	Protective Casing	Markings Legible	Interior Casing	Pump Function
OB-37							
OB-38							
OB-39							
OB-40R							
OB-41							
OB-42							
OB-43							
OB-44							
OB-45							
OB-46							
OB-47							
OB-48							
OB-49							
OB-50							
OB-51							
OB-52							
OB-53							

Details of Unacceptable Items:

Actions Required to Remedy Problems:

This form must be submitted to and retained by Site Environmental Manager

Attachment D

Operating Procedures for the Water Level Indicator

The Keck Instruments ET-89 is a portable reel mounted device used to accurately measure water levels in a borehole. Water levels are detected by a 5/8" O.D. stainless steel probe attached to a 100 FT. Tefzel coated engineer's tape. The tape is graduated in 100ths of a foot with metric divisions on the reverse side. The ET-89 relies on fluid conductivity to determine the presence of water and emits on audible signal with light. Controls include a sensitivity adjustment to eliminate false readings due to cascading water or casing effect and a battery test switch.

Operational Procedure

1. Turn the instrument "On" and check the battery voltage by pressing the "Batt Test" button. A dim red light indicates a low battery and should be replaced.
2. Lower the probe down the well to the water surface, the light and buzzer should be activated. At this point adjust the probe sensitivity counter-clockwise until the light and buzzer turn off.
3. With the probe still in contact with the water, adjust the probe sensitivity until the light and buzzer barely activate. In this setting the probe will detect water level and not be effected by condensation from the casing well.
4. Water level measurements can now be taken from the top of the casing.
5. After completion of water level measurements the device should be properly stored.

Maintenance and Cleaning Procedures

1. Remove the three faceplate screws.
2. Release the faceplate using the sensitivity knob to pull the components out of the reel.
3. Make note of the battery location on the circuit board and the position in reel cavity.
4. Remove the 9 volt battery from the connector by grasping the battery and the black connector. Replace with new battery.
5. Position the battery in the notch of the circuit board and align the battery with the recessed slot in the reel.
6. Place the faceplate in the reel and replace the three retaining screws. Do not over tighten these screws.

Decontamination and Cleaning

The ET-89 can be cleaned with any detergent or lab soap such as Liquinox that does not effect polypropylene. The reel should not be submerged at any time but can be wiped with a damp cloth.

Please call our technical staff if further assistance is required at 1-800-542-5681.

KECK INSTRUMENTS, INC

KECK TAPE GUARD

The Keck "Tape Guard" was developed to protect instrumentation, tapes and sample tubing from the wearing edges of well casing. Made of smooth flexible polystyrene, the "Tape Guard" easily adapts to any 2" or 4" well.

Instructions

Simply compress the "Tape Guard" and insert into the opening of any 2" to 4" well pipe. Allo instrumentation, tubing or tape to ride on th smooth surface of the "Tape Guard" to pre wear.

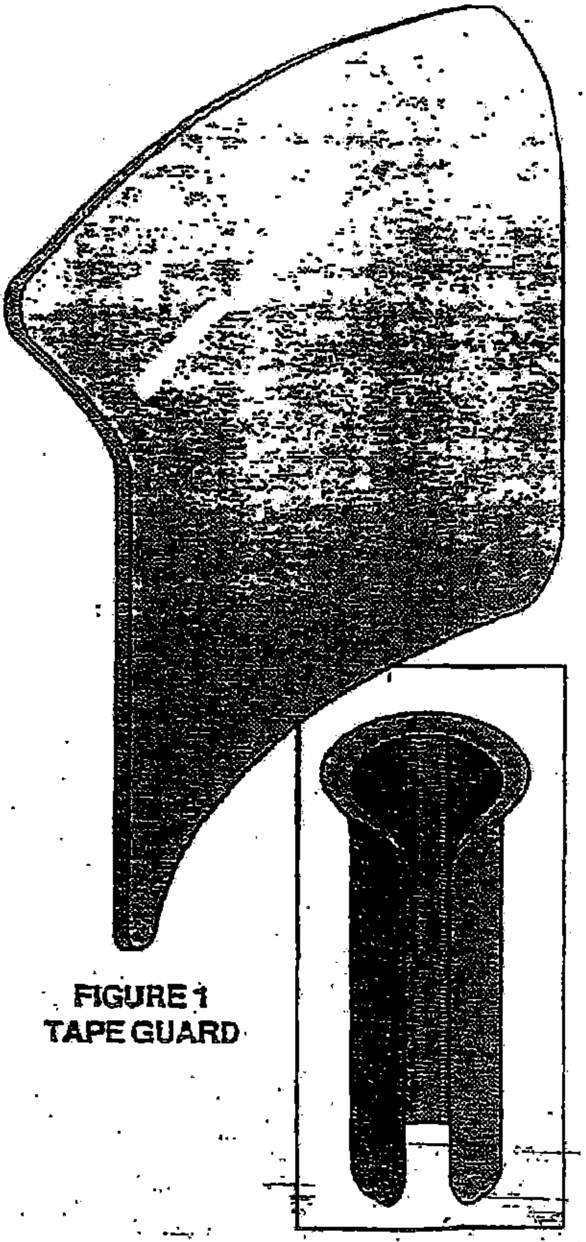


FIGURE 1
TAPE GUARD

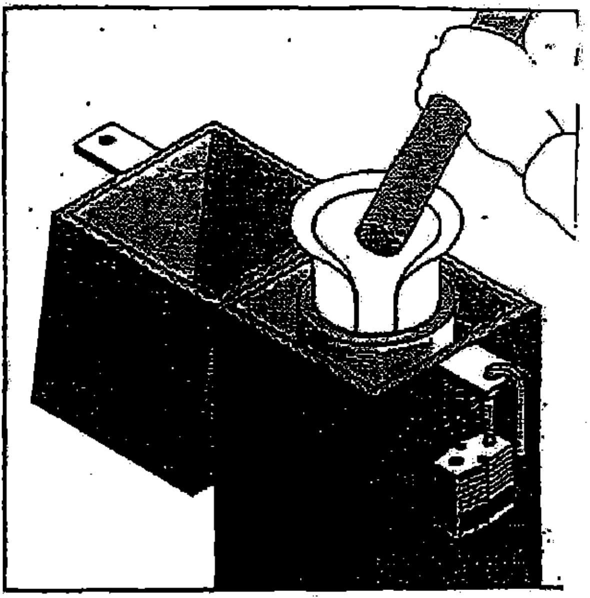


FIGURE 2
TAPE GUARD USAGE

Attachment E

Summary of Monitoring Well Information

Attachment E

MONITORING WELL INFORMATION
WAYNE DISPOSAL SITE #2 LANDFILL

WELL ID	PROGRAM(S)	T.O.C. ELEV.	SCREEN ELEV.	WELL DEPTH	DESIG.	STRATUM SCREENED	WELL PAIR
OB-1A	Part 115	705.99	579.9	126	UG	SILT/ROCK	--
OB-2A	Part 115/MCIX	701.30	587.8	114	DG	SAND	OB-44
OB-3	Part 115	708.99	577.9	131	DG	SAND	--
OB-4	Part 115	712.59	638.9	74	UG	SAND	--
OB-5	Part 115	705.20	603.8	101	DG	SAND	--
OB-6/OB-56	Part 115/Part 111*	704.75	627.1	78	DG	SAND	--
OB-7	Part 115/MCIX	703.58	627	77	UG	SILT/SAND	OB-32
OB-8/OB-60	Part 115/Part 111*	707.58	629	79	DG	SAND	--
OB-9	Part 115	701.20	614.1	87	DG	SAND	--
OB-10	Part 115	707.80	621	87	DG	SAND	--
OB-11A	Part 115/MCIX	698.99	611.4	88	DG	SAND	--
OB-12R	Part 115	707.84	620.6	87	DG	SAND	OB-55
OB-13/OB-57	Part 115/Part 111*	703.27	619.9	83	DG	SAND	--
OB-14	Part 115	702.10	600.1	102	DG	SAND	--
OB-15	Part 115	707.63	617.3	90	DG	SAND	--
OB-16	Part 115	700.83	596.5	104	DG	SAND	--
OB-18	Part 111 (MDWTP)	703.11	589.2	114	UG	CLAY/ROCK	--
OB-19R	Part 111 (MDWTP)	709.17	585.6	124	UG	ROCK	--
OB-20	Part 111/TSCA	706.28	609.9	96	DG	SAND	--
OB-21	Part 111(MDWTP)/TSCA	705.00	600.9	104	DG	SAND	OB-36
OB-22	Part 111	704.00	568.3	136	DG	SAND/ROCK	OB-24
OB-23A	Part 111(MDWTP)/TSCA	702.67	577.5	125	DG	SAND	--
OB-24	Part 111(MDWTP)/TSCA	704.59	614.4	90	DG	SAND	OB-22
OB-25	Part 111/TSCA	711.00	620	91	DG	SAND	OB-37
OB-26A	Part 111/TSCA	714.15	628.5	86	DG	SAND	OB-38
OB-27A	Part 111	708.27	636.5	72	DG	SAND	OB-28
OB-28	Part 111	709.00	583.9	125	DG	SAND	OB-27A
OB-29	Part 111	705.53	609.4	96	DG	SAND	OB-39
OB-30	Part 111	703.92	607.4	97	DG	SAND	--
OB-31AR	Part 111/MCIX	700.65	628.1	73	UG	SAND	OB-32
OB-32	Part 111/MCIX	701.49	565.3	136	UG	ROCK	OB-31A
OB-34A	Part 111/TSCA	712.04	617.8	94	DG	SAND	--
OB-35A	Part 111	711.36	577.5	134	DG	ROCK	--
OB-36	Part 111 (MDWTP)	702.13	572.1	130	DG	ROCK	OB-21
OB-37	Part 111	711.30	572.7	139	DG	ROCK	OB-25
OB-38	Part 111	714.10	573.4	141	DG	ROCK	OB-26A
OB-39	Part 111	707.55	561.9	146	DG	ROCK	OB-29
OB-40R	Part 111/TSCA	708.84	610.2	99	UG	SILT/SAND	--
OB-41	MCIX	701.89	562	140	DG	ROCK	--
OB-42	MCIX	717.25	624.4	93	DG	SAND	OB-43
OB-43	MCIX	717.46	595.1	122	DG	SAND	OB-42
OB-44	MCIX	701.27	639.5	62	DG	SAND	OB-2
OB-45	Part 115/MCIX	701.31	628	73	DG	SAND	OB-46
OB-46	MCIX	701.19	600	101	DG	SAND	OB-45
OB-47	Part 111 (MDWTP)	702.70	594.3	108	DG	SAND	--
OB-48	Part 111/TSCA	708.70	614.2	94.5	DG	SAND	--
OB-49	Part 111/TSCA	708.01	572.5	135.5	DG	ROCK	OB-53
OB-50	Part 111/TSCA	715.43	602.4	113.0	DG	SAND	--
OB-51	Part 111/TSCA	719.19	606.19	113.0	DG	SAND	--
OB-52	Part 111/TSCA	709.24	620.9	88.3	DG	SAND	--
OB-53	Part 111/TSCA	707.01	600.8	106.21	DG	SAND	OB-49
OB-54	Part 111/TSCA	To be installed				SAND	--
OB-55	Part 111/TSCA	To be installed				ROCK	OB-12R
OB-58	Part 111/TSCA	To be installed				SAND	OB-59
OB-59	Part 111/TSCA	To be installed				ROCK	OB-58

UG = Upgradient Well　　DG = Downgradient Well

* to become Part 111 well when Cell G Phase 1 wells are abandined

Attachment F

WELL WIZARD
Dedicated Sampling Systems

Installation, Operation and Maintenance User's Guide
Part No 34999

(This manual is on file at WDI and at MDEQ)

Attachment G

Sample Container and Preservation Procedures

Handling Requirements of Monitoring Parameters

Parameter	Perservation	Holding Time	Bottle Type	Minimum Volume
Total Phenolics	1,2	28 Days	Amber Glass	0.5 L
Sulfate	2	28 Days	Plastic	50 ml*
Total Alkalinity	2	14 Days	Plastic	100 ml*
Fluoride	2	28 Days	Plastic	300 ml*
Chloride	2	28 Days	Plastic	50 ml*
Nitrate/Nitrite	1,2	48 Hrs	Plastic	0.5 L
Arsenic	3,5	6 Mos	Plastic	200 ml**
Cadmium	3,5	6 Mos	Plastic	200 ml**
Calcium	3,5	6 Mos	Plastic	200 ml**
Chromium	3,5	6 Mos	Plastic	200 ml**
Iron	3,5	6 Mos	Plastic	200 ml**
Potassium	3,5	6 Mos	Plastic	200 ml**
Lead	3,5	6 Mos	Plastic	200 ml**
Magnesium	2,3,5	6 Mos	Plastic	200 ml**
Manganese	2,3,5	6 Mos	Plastic	200 ml**
Molybdenum	2,3,5	6 Mos	Plastic	200 ml**
Nickel	2,3,5	6 Mos	Plastic	200 ml**
Sodium	3,5	6 Mos	Plastic	200 ml**
Zinc	3,5	6 Mos	Plastic	200 ml**
Cyanide	2,4	14 Days	Plastic	500 ml
Copper	3,5	6 Mos	Plastic	200 ml**
pH		Immediate	Plastic	25 ml
Bicarbonate	2	14 Days	Plastic	100 ml*
Carbonate	2	14 Days	Plastic	100 ml*
TOC	2,7	28 Days	Glass	100 ml
Specific Conductivity	2	28 Days	Plastic	100 ml
Volatile Organics	2,6	14 Days	Glass	2x40 ml
PCBs	2	7 Days Ext. 40 after Ext.	Amber Glass	1000 ml

1) pH<2 with concentrated Sulfuric Acid
2) Store at 4 degrees Centigrade
3) pH<2 with nitric acid
4) pH>12 with sodium hydroxide
5) Filtered in the field using 0.45 micron membrane filters on the time of collection
6) 4 drops HCL, no headspace
7) pH<2 with hydrochloric acid

* Note: One liter for all of these parameters stored similarily

** Note: One liter for all of these parameters stored similarily

Attachment H

Ground Water Parameter List

(WDI/MDWTP)

Ground Water Monitoring Parameter List

A. Primary Parameters

Benzene	1,2 Dichlorobenzene	Xylene
1,2 Dichloroethane	1,2 Dichloroethene	Ethylbenzene
Methylene Chloride	Toluene	Trichloroethene
1,1,1 Trichloroethane	Vinyl Chloride	1,1 Dichloroethane

PCB-1016[1]	**PCB-1221**[1]	**PCB-1231**[1]
PCB-1242[1]	**PCB-1248**[1]	**PCB-1254**[1]
PCB-1260[1]		

B. Secondary Parameters

Potassium	Sodium	Nickel
Chromium(t)	Lead	Molybdenum
Sulfate	Chloride	Bicarbonate
Carbonate	Arsenic	Cyanide[4]
Nitrate	Nitrite	Fluoride
Total Phenolics	Total Organic Carbon	Iron

C. Tertiary Parameters

Calcium[2]	Magnesium[2]	Copper[2]
Manganese[2]	Zinc[2]	Cadmium[2]
Silver	Mercury	Selenium
Barium	2,4-D	Endrin
Silvex	Methoxychlor	Toxaphene

D. Field Monitoring Parameters[3]

Specific Conductance Temperature pH

Notes:

1	PCB's to be analyzed in samples from wells OB-21, OB-23, OB-24, OB-34R, OB-40R, OB-48 through OB-53 only.
2	Tertiary parameter that will be measured during detection monitoring.
3.	Parameter to be measured in field for all samples collected
4.	Amenable cyanide to be analyzed if cyanide is detected

Attachment H.

Attachment I

Analytical Methods and Target Detection Limits

Attachment I - Analytical Methods and Target Detection Limits

VOC Parameter	Detection Limit (mg/l)	Preparation Method	Analytical Method
1,1-Dichloroethane	0.001	---	EPA 8260B
1,2-Dichloroethane	0.001	---	EPA 8260B
1,2-Dichloroethene	0.001	---	EPA 8260B
1,1,1-Trichloroethane	0.001	---	EPA 8260B
Trichloroethene	0.001	---	EPA 8260B
Vinyl Chloride	0.001	---	EPA 8260B
Methylene Chloride	0.005	---	EPA 8260B
1,2-Dichlorobenzene	0.001	---	EPA 8260B
Benzene	0.001	---	EPA 8260B
Toluene	0.001	---	EPA 8260B
Ethylbenzene	0.001	---	EPA 8260B
Xylenes (Total)	0.003	---	EPA 8260B
Indicator Parameter	**Detection Limit (mg/l)**	**Preparation Method**	**Analytical Method**
Alkalinity (Total)	10	---	2320B
Bicarbonate Alkalinity	10	---	2320B
Carbonate Alkalinity	10	---	2320B
Chloride	1	---	SM 4500-Cl E-11
Cyanide (Total)	0.005	EPA 9014	EPA 9014
Fluoride	0.1	---	SM 4500-F C-11
Nitrate/Nitrite	0.01	---	SM 4500-NO3 F-11
pH	N/A	---	SM 4500-H B-11
Phenolics (Total)	0.01	EPA 420.4	EPA 420.4
Specific Conductivity	5(mmhos/cm)	---	SM 2510B-11
Sulfate	2	---	SM 4500-SO4 E-11
TOC	0.5	---	SM 5310C-11
Metals	**Detection Limit (mg/l)**	**Preparation Method**	**Analytical Method**
Arsenic	0.001	EPA 3020A	EPA 6020A
Cadmium	0.0002	EPA 3020A	EPA 6020A
Calcium	1	EPA 3010A	EPA 6010C
Chromium	0.02	EPA 3020A	EPA 6020A
Copper	0.01	EPA 3020A	EPA 6020A
Iron	0.02	EPA 3010A	EPA 6010C
Lead	0.001	EPA 3010A	EPA 6010C
Magnesium	1	EPA 3020A	EPA 6020A
Manganese	0.005	EPA 3020A	EPA 6020A
Molybdenum	0.025	EPA 3020A	EPA 6020A
Nickel	0.025	EPA 3010A	EPA 6010C
Potassium	0.1	EPA 3010A	EPA 6010C
Sodium	1	EPA 3010A	EPA 6010C
Zinc	0.01	EPA 3020A	EPA 6020A
PCB	**Detection Limit (mg/l)**	**Preparation Method**	**Analytical Method**
PCB-1016	0.0001	EPA 3510C	8082A
PCB-1221	0.0001	EPA 3510C	8082A
PCB-1232	0.0001	EPA 3510C	8082A
PCB-1242	0.0001	EPA 3510C	8082A
PCB-1248	0.0001	EPA 3510C	8082A
PCB-1254	0.0001	EPA 3510C	8082A
PCB-1260	0.0001	EPA 3510C	8082A

Attachment K

Current Laboratory's Quality Assurance Manual

(WDI/MDWTP)

(This can be requested from Pace Analytical)

Attachment L

Statistical Monitoring Plan for Ground Water Monitoring Data

(WDI/MDWTP)

Statistical Procedures for Ground Water Monitoring Program
Wayne Disposal, Inc

1.0 Introduction

The following statistical procedures are used to analyze the statistical significance of measured concentrations of ground water monitoring parameters at Wayne Disposal, Inc (WDI). This program was developed in accordance to meet the requirements of 40 CFR 264.97 and Rule 506 of the Administrative Rules for Part 111, Hazardous Waste Management, of the Natural Resources and Environmental Protection Act, 1995 PA 451, as amended.

2.0 Overview of Statistical Procedures

The statistical evaluation program for WDI is designed to signal statistically significant concentrations of monitoring parameters measured in samples collected quarterly or semi-annually from the wells in the monitoring well network. Different statistical techniques are used for different monitoring parameters depending on the nature of the data. The statistical comparisons are either intrawell (each well is compared to its own background) or based on the detection limit, which is generally the standard laboratory detection limit. When intrawell statistical comparisons are used, the statistical procedure is selected based on the degree that the background data are censored.

The monitoring parameters measured during each analysis are divided into four categories: primary parameters, secondary parameters, tertiary parameters, and field parameters (see Figure 1). The list of primary parameters is comprised of volatile organic compounds that are known to present within the waste. As these compounds do not generally occur in nature at measurable concentrations, a confirmed concentration above a statistically based detection limit for any single parameter will result in a statistically significant increase as defined by the operating license.

The secondary monitoring parameters are mainly inorganic parameters that are found in elevated concentrations within the leachate. As these parameters are naturally occurring, their presence in ground water may or may not be an indication of a release and it is often necessary to determine the significance of changes in concentration relative to estimates of the true background concentrations. In this program secondary parameters are used to detect a possible release in the following ways. First, a confirmed statistically significant change in the concentration of any two (or more) secondary parameters in a single well will result in a statistically significant increase as defined by the operating license. This approach is designed to detect relatively subtle changes in ground water quality as evidenced by several parameters at once. In addition, a confirmed, order of magnitude increase (10 times the background concentration) in the concentration any single parameter will also result in a statistically significant increase. This will ensure that a large increase in one secondary parameter is appropriately investigated.

The tertiary parameters are those parameters for which background has already been established. The tertiary parameters in this program are further subdivided into two groups: parameters that have an already established background but will not be measured during detection monitoring, and parameters that will continue to be measured during detection monitoring but will not be subjected to the statistical analyses described below. The former group is not being analyzed because they do not appear to be useful monitoring parameters. The analytical results from the latter group will be used to evaluate potential non-release related ground water quality changes, such as might be caused by well corrosion and grout contamination. These parameters will not be analyzed statistically because they are poor indicators of a release.

Field parameters are those parameters measured in the field during sample collection, mainly for the purpose of showing that ground water quality has stabilized during well purging. These parameters will not be analyzed statistically.

3.0 Description of Statistics for Detection Monitoring

The statistical tests to be used for all detection monitoring events are described in the following section. This section includes the definition and procedures for calculating "background", and the procedures for conducting the statistical analyses.

3.1 Parameters

The parameter list for the ground water monitoring program is presented on Figure 1. The following descriptions of background calculation and statistical analyses are presented separately for the primary and secondary parameters, respectively.

3.2 Background

The background statistics for all monitoring parameters are to be calculated using the methods described below. The recalculation of the moving background for secondary parameters, as described below, will also follow these procedures. For new wells, or replacement wells that cannot utilize the data from the replaced well, an interim background as defined in section 3.3 will be used for applicable secondary parameters until eight samples are collected. Then the background described below will apply.

Primary Parameters - The decision of whether or not there is a statistically significant increase in a primary parameter is essentially the decision of whether or not the parameter is present in the ground water. For all of the primary parameters the occurrence of the parameter above the laboratory's reported detection limit is considered to be a statistically significant event and re-sampling must be initiated to confirm or refute the occurrence.

Secondary Parameters - Determination of the initial intrawell background statistics was completed utilizing the first eight sampling events beginning in 1988. However, beginning at the end of 1995, each time four new analyses were completed, the oldest four measurements have been dropped from the database, the next four added, and the background statistics recomputed. This is repeated each year keeping about a six year lag between the background period and the detection monitoring samples.

If the program moves to semi-annual monitoring (such as in post-closure), the background will be updated every year until the moving background reaches the point where years with semi-annual sampling are to be included. Then the background will be updated every two years (after four new samples have been collected) and thus the moving background window will continue to lag at least six years behind.

The nature of the background statistics and the method of calculation of these statistics for the secondary parameters is based on the degree of censorship of each parameter at each well. The secondary parameter list includes parameters which are highly censored (at least half of the values are below detection limits), those which are moderately censored (more than half the values are above detection) and those which are essentially all above method detection limits (the method detection limits are defined in the operating license). Some parameters exhibit varying degrees of censorship at different wells.

If the background data for a parameter contains at least five detectable background values, but contains some non-detects, the non-detects will be alternately assigned values of zero and the detection limit. If all of the background values are above detection, the background statistics will be calculated from the background data as is. The mean and standard deviations will be calculated using the standard statistical equations for these quantities and the data will be analyzed using control charts as described below. In no case will a standard deviation of less than 10 percent of the mean be used in a statistical test. If the calculated background standard deviation is less than 10 percent of the mean, then 10 percent of the mean will be substituted for the background standard deviation.

If half or more of the intrawell background measurements are below detection limits (4 or more BDL values), then the background statistics will be calculated based on the proportion of values above method detection limits. This quantity will be used to conduct a test of proportions as described below.

3.3 Performance of Statistical Tests

The methods to be used for statistical analyses of all primary and secondary parameters that have a background as defined in Section 3.2 are described below. For new wells, the primary parameters will be evaluated as described below but the secondary parameters will be evaluated using the "interim" statistical procedures contained in Appendix A. For replacement wells, a decision must be made as to whether the existing background from the well replaced is appropriate for the new well. If it is, such as might be expected when a damaged well is replaced by a well screened in the same stratum, then the existing background can be used with the statistical tests described below. If the replacement well can not be placed in the same strata, or the old well is believed to have yielded unrepresentative results, then the replacement well is considered a new well for the purposes of statistical analyses and will be handled as described above.

Primary Parameters - For the primary parameters, any measured concentration of any parameter which is above the laboratory reported detection limit will initiate quadruplicate re-sampling for confirmation of the affected parameter(s), in accordance with the operating license. If the statistical failure is repeated, then a statistically significant increase is confirmed. If the apparent increase is not confirmed, then normal detection monitoring will be resumed.

Secondary Parameters - The statistical analysis of secondary parameters will be conducted by one of two statistical tests depending on the degree that the intrawell background data are censored. If more than half the data are above method detection limits then a control chart approach will be used. If at least half the background data are below detection limits, a test of proportions will be used to analyze the data. There is also a default provision to investigate a dramatic increase in any single parameter regardless of the results of outcome of the statistics.

If there are statistically significant increases for any two secondary parameters at any single well, and the increases represent less than a ten-fold increase over background, then WDI shall undertake the procedures identified in the operating license, including re-sampling in quadruplicate. In this case, both failures must be verified by re-sampling in order to confirm the statistical increase. If any single secondary parameter exhibits a ten-fold increase over background, then this occurrence must be verified by quadruplicate re-sampling. If the increase is confirmed then a statistically significant increase has occurred.

The statistical evaluation of moderately censored or uncensored secondary parameters will be conducted using intrawell statistical comparisons via a control chart approach. The combined Shewhart-CUSUM control chart will be used to analyze the statistical significance of the measured concentrations of secondary parameters. This approach consists of two statistical tests designed to detect different types of evidence of a release. The Shewhart limit is designed to detect a sharp increase in the concentration of a monitoring parameter in a single sample. The CUSUM limit is designed to detect gradual increases in the concentration of a parameter over time. The two techniques will be used as separate statistical tests. That is, failure of either test alone (or both) will signal a statistically significant increase for a given parameter. Therefore, if one parameter fails the CUSUM test and another exceeds the Shewhart limit, then an apparent statistically significant increase will have occurred and confirmation of both failures must be undertaken. Confirmation of an apparent failure of one of the two tests must be confirmed by an additional failure of that particular test.

The Shewhart control chart compares a detection monitoring concentration of a parameter to the intrawell background mean plus a selected number of standard deviations. The test is performed by calculating the standardized mean, Z, for the detection monitoring concentration. As individual samples are collected during each detection monitoring event, the standardized mean for each measured parameter is calculated by:

$$Z = (x_m - x_b)/s_b$$

where: x_b is the intrawell background mean

x_m is the measured concentration during detection monitoring

s_b is the standard deviation of the intrawell background

The value of Z is then simply compared to a selected value, U, which represents the number of standard deviations from the intrawell mean. The Shewhart limit (U), or upper control limit will be 4.5, as recommended in the Interim Final Guidance for Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities (USEPA, 1989). The statistical test is performed by simply comparing the value of Z to the value of U. If Z is greater than U then it is concluded that a statistically significant increase has occurred.

The Shewhart control chart will be used in the following manner. If a secondary parameter(s) exceeds the Shewhart limit and at least two secondary parameters fail a statistical test at any given well during a given sampling event, the well would be re-sampled in quadruplicate for the offending parameters, and the mean(s) of the quadruplicate analyses would be used to confirm whether the Shewhart limit(s) is exceeded. If there is confirmation, then it would be concluded that there has been a statistically significant increase. If the increase is not confirmed, any unconfirmed measurements would be dropped from the control chart and replaced with the means of the quadruplicates.

The CUSUM control chart is designed to detect a trend of increasing concentrations over time, regardless of whether the Shewhart limit is exceeded or not. In the CUSUM procedure, the cumulative sum of the values for Z - k are tabulated over time, each time a round of samples are analyzed. The value for Z is computed as described above, and k is a selected parameter. During each analysis subsequent to the background determination period, a value for Z - k is computed and added to the previous total. As long as the cumulative total of Z - k is a negative number the cumulative sum (S) remains zero. As positive values accumulate, the value for S is compared to a selected value, h. If S is greater than h, then a statistically significant event has occurred. The values used for k and h will be k = 1 and h = 5, respectively, as recommended (USEPA ,1989).

The CUSUM limit will be utilized in conjunction to the Shewhart limit and proportions test as follows. If the CUSUM limit is exceeded and at least two or more secondary parameters have failed a statistical test at any given well during any given sampling period, quadruplicate re-sampling of the well in question will be initiated. The mean values of the quadruplicate sample will then be used to re-compute S. If S again exceeds h, then the increase is confirmed. If the increase is not confirmed then the mean values of the quadruplicate sampling replace the results of the anomalous (unconfirmed) values within the CUSUM statistic for future analyses. These non-confirmed exceedances must be removed from the CUSUM control chart because their inclusion may cause additional false positive results when subsequent sample results are added to the cumulative sum.

For parameters that contain at least half non-detectable concentrations in the intrawell background database, a statistical test to determine the significance of the proportion of detectable occurrences during detection monitoring will be used. The test of proportions, which is based on the binomial distribution, is statistical test suited to this purpose. This statistical procedure analyzes the significance of an increase in the rate of detectable occurrences over time.

To implement the test of proportions, the proportion of detectable occurrences during the 8 background samples will be compared to the rate of detectable occurrences in the most recent 4 detection monitoring samples. The statistic is computed by the equation:

$$Z^* = \frac{P_m - P_b}{[\, p(1-p)(1/N_m + 1/N_b)]^{0.5}}$$

where: P_m = proportion of detectable concentrations in the last four detection monitoring samples
P_b = proportion of detectable concentrations in the eight intrawell background samples
N_m = number of detection monitoring samples (4)
N_b = number of background samples (8)
p = weighted proportion defined as:

$$p = \frac{n_m + n_b}{N_m + N_b}$$

where: n_m = number of detection monitoring samples above method detection limits
n_b = number of background samples above method detection limits

The value of Z* is then simple compared to a critical value, Z_c, obtained from standard tables for the normal variant, Z, at the desired level of significance. The test will be conducted at the 0.05 level of significance, therefore Z_c is equal to 1.645. Any value of Z* greater than Z_c signals a statistical failure for that parameter.

Each time a new detection monitoring sample is collected, the result would be added to the previous three samples for determining the proportion of detectable occurrences. Thus, both the background and detection monitoring proportions involve a moving window, with the background lagging at least six years behind the window of detection monitoring. If detection limits are lowered during the monitoring program, the proportion of detectable occurrences will be the proportion of results above the older background detection limit until the background is updated to include the new lower detection limits. For example, if the old detection limit was 20 and the new detection limit is 10, then only concentrations above 20 (even though a concentration of 11 or above is now "detectable") will be considered detectable until the moving background window is based on samples with a detection limit of 10.

WDI will use the proportions test as follows. If there is a statistically significant increase in any two secondary parameters at a particular monitoring well (i.e. two failures of the test of proportions or a combination of control chart and proportions test failures), then re-sampling in quadruplicate would be initiated to confirm the suspected increase. Confirmation would be completed if both failures are repeated.

To guard against the unlikely possibility of a large increase in a single secondary parameter going unflagged by the above statistical program, WDI will consider any concentration of a secondary parameter that is greater than 10 times the background concentration (or the reported detection limit for highly censored parameters) as a default violation of the statistical tests described above. This will ensure that clearly anomalous data are evaluated even if only a single secondary parameter is affected.

Wayne Disposal Inc.
2018 TSCA Permit Renewal

Attachment 5
Surface Water Monitoring

SURFACE WATER SAMPLING AND ANALYSIS PLAN
WAYNE DISPOSAL, INC.

REVISION 3.9 – MARCH 2018

1.0 INTRODUCTION

This Surface Water Sampling and Analysis Plan (SW SAP) identifies the procedures to be used for monitoring on-site surface water (storm water) samples from the perimeter ditches that convey on-site surface water run-off at Wayne Disposal, Inc. (WDI), Site 2 to the North, Northwest and South Sedimentation Basins. All surface water collected in these sedimentation basins is treated by sedimentation, filtration and activated carbon adsorption prior to discharge to off-site surface water (Quirk Drain). The effluent from this treatment process is discharged into Quirk Drain in accordance with an effective National Pollutant Discharge Elimination System (NPDES) permit.

The surface water monitoring program described by this SW SAP is designed to test the quality of the on-site surface water to determine if hazardous waste or hazardous waste constituents are present within the surface water. If these constituents are detected or exceed statistical limits the plan outlines the notification and response actions that WDI must take. 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 the off-site release of hazardous waste or hazardous waste constituents.

2.0 REVISIONS

WDI may revise this SW SAP and submit the revised plan to the Chief of the Waste and Office of Waste Management and Radiological Protection of the Michigan Department of Environmental Quality (OWMRP/MDEQ) for review and approval prior to implementation.

3.0 SAMPLE LOCATIONS

Surface water grab samples are currently collected from each of the eight permanent locations shown on Figure 1 designated as SS-1, SS-2, SS-5, SS-6, SS-7, SS-8, SS-9 and SS10. Location SS-3 is the effluent from the treatment system and is monitored in accordance with an NPDES permit and the TSCA Approval per 40 CFR 761.75 for the facility. SS-4 was abandoned due to changes to the drainage system at the site. Location SS-8 will be abandoned during the construction of MC VI-F. Location SS-11 will be added to the program when MC-VI-G Phase 3 is constructed. A description of each location, including its location with respect to being in “Area A” or “Area B”, is included on Table 1.

4.0 SAMPLE FREQUENCY

Each surface water sample location in the program is to be sampled once during each calendar quarter following a rain event (defined as a 0.5 inches or more in 24 hours) when enough surface water is present within the ditches to collect a representative sample. Surface water samples will not be collected within a calendar quarter if there are no significant rain events that allow for the sampling to be completed.

5.0 SAMPLE COLLECTION

Surface water grab samples for each of the required parameters are to be collected from each of the sampling locations. Samples for volatile organic compounds (VOCs) are to be collected first and require zero headspace (no air bubbles) and minimal agitation of the water sample. Samples for PCBs are collected next followed by total phenolics and then the remaining parameters. Duplicate samples must be collected at each sample location for VOCs, PCBs and metals. The duplicate samples are to be held by the laboratory as potential confirmation samples to be analyzed in the event of an apparent statistically significant increase (ASSI) using the criteria defined in Section 7.0 of this SW SAP. The duplicate sample for PCBs must be extracted when it arrives at the laboratory and the extract held in case a confirmation analysis is required.

Samples are to be collected by direct fill by dipping the bottles provided by the laboratory into the water and directly filling the containers. If site conditions do not allow for sampling in this way, a disposable plastic cup can be used to collect the sample and the sample then carefully decanted into the sample bottles. Care must be taken to ensure that any preservatives in the bottles are not spilled during sample collection. Field measurements of pH, specific conductance, temperature and dissolved oxygen are collected with calibrated field instruments at the time of sampling. WDI is to use the instructions for the use and maintenance of these instruments contained in the Groundwater Sampling and Analysis Plan for equipment used to collect field measurements under this SW SAP.

Protective gloves must be worn during sample collection and clean gloves must be used at each sample location. Care should be taken at all times when handling the samples. Samples to be analyzed for volatile organic compounds require zero-headspace, no air bubbles and minimal agitation of the sample. Samples collected for metals analyses are not to be filtered as the metals analyses are "totals" analyses. Each sample container must be carefully labeled with the sampling location, time and date, and the sampler's initials. Field Quality Assurance/Quality Control samples must include:

- One trip blank in each cooler utilized for storing and shipping samples. The trip blank must be analyzed for VOCs and PCBs.
- One field blank for each day in which samples are collected. The field blank samples are to be collected by filling an identical set of sample bottles at a given location with clean deionized water. The field blank samples must be analyzed VOCs and PCB.
- One blind duplicate for each sampling event. The duplicate must be collected by filling an identical set of sample bottles at a given location and submitting them for an identical analysis.
- One equipment blank for the disposable cups is prepared by filling the cup with water provided by the laboratory and decanting the water into the sample containers. The equipment blank must be analyzed for VOCs and PCBs.

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 (e.g. odors, sheens) encountered must be noted. A chain of custody (COC) form that lists each sample submitted to the laboratory must be fully filled out for each sampling event and each person who has custody of the samples, from sample collection through sample check-in, must sign and date the form. When the samples are delivered to the laboratory and the laboratory has signed for their receipt, a copy of this form must be retained on site.

6.0 SAMPLE ANALYSIS

One surface water grab sample from each of the required sampling locations must be analyzed for the parameters listed on Table 2 using the analytical methods and method detection limits specified in Table 2, which are consistent with Policy and Procedure Document OWMRP-111/115-8. The potential confirmation duplicate samples from each surface water sampling location must be retained at the laboratory but need only be analyzed if an ASSI is detected in the first sample using the criteria described in Section 7.0 of this SW SAP.

In some cases the laboratory may not be able to attain the method detection limits specified due to factors such as sample dilution or matrix effects. If this is the case, the laboratory report must include an explanation for not achieving the specified method detection limits.

The laboratory quality control/quality assurance manual (QA/QC Manual) describing the required internal policies, guidelines and procedures of any contract lab is used by WDI in evaluating the QA/QC standard operating procedures of any contract laboratory utilized for the purposes of this SW SAP. WDI ensures that the laboratory employs acceptable QA/QC practices.

7.0 DATA EVALUATION

The analytical data from the surface water samples is to be evaluated as follows:

- For VOCs, any reported concentration at or above the method detection limit is an apparent statistically significant increase (ASSI).
- For PCBs, the data will be evaluated as follows:
    - For samples obtained from Area B, any reported concentration at or above the method detection limit is an ASSI.
    - For samples obtained from Area A, any reported concentration at or above 0.5 mg/L is an ASSI.
- For metals and inorganic parameters, the data will be evaluated using the sign test as described in Attachment A. In addition, if a ten-fold increase in concentration is noted in any metal or inorganic parameter between sampling events in any of the individual grab samples, then there has been an ASSI.

Any PCBs or VOC detection at the NPDES discharge location (SS-3) that is monitored monthly in accordance with WDI's TSCA Approval must be reported as an ASSI as outlined in Section 8 of this document and WDI's Part 111 Operating License.

8.0 RESPONSE ACTIONS

In the event of an ASSI, WDI must verbally notify the OWMRP/MDEQ, 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 ASSI.

- If a VOC is present in a sample above its method detection limit, the duplicate sample must be analyzed.
- If a metal in any grab sample has met or exceeded ten times increase criteria identified in Section 7.0, an ASSI has occurred and the duplicate sample must be analyzed for the offending parameter(s) .
- If PCBs have met or exceeded the criteria identified in Section 7.0, an ASSI has occurred and the duplicate sample extract must be analyzed.
- If the sign test fails at any location then the sample location must be inspected closely and resampled as soon as there is water to sample and analyzed for all sign test procedures.

If the holding time for any sample or sample extract has been exceeded, the location where the ASSI sample was collected must be resampled as soon as there is water in the sample location and the sample must be analyzed.

If an ASSI is not repeated, WDI will resume routine monitoring. If the ASSI is repeated upon analyzing the second sample, a confirmed statistically significant increase (CSSI) has occurred. In the event of a CSSI, WDI must notify the OWMRP/MDEQ in accordance with the General Operating Conditions of the Operating License for Reporting Noncompliance that may endanger human health or the environment. Further, in the event of a CSSI, within 30 days of becoming aware of a CSSI, WDI must:

- Determine whether a discharge of hazardous waste and/or hazardous waste constituents to off-site surface waters is occurring, determine the source, and take immediate steps to eliminate and prevent any such discharge. WDI may demonstrate a source other than the licensed facility caused the CSSI or that the CSSI resulted from error in sampling, analysis or evaluation.
- Submit a report to the OWMRP/MDEQ documenting WDI's investigation, response, and any further response actions proposed.

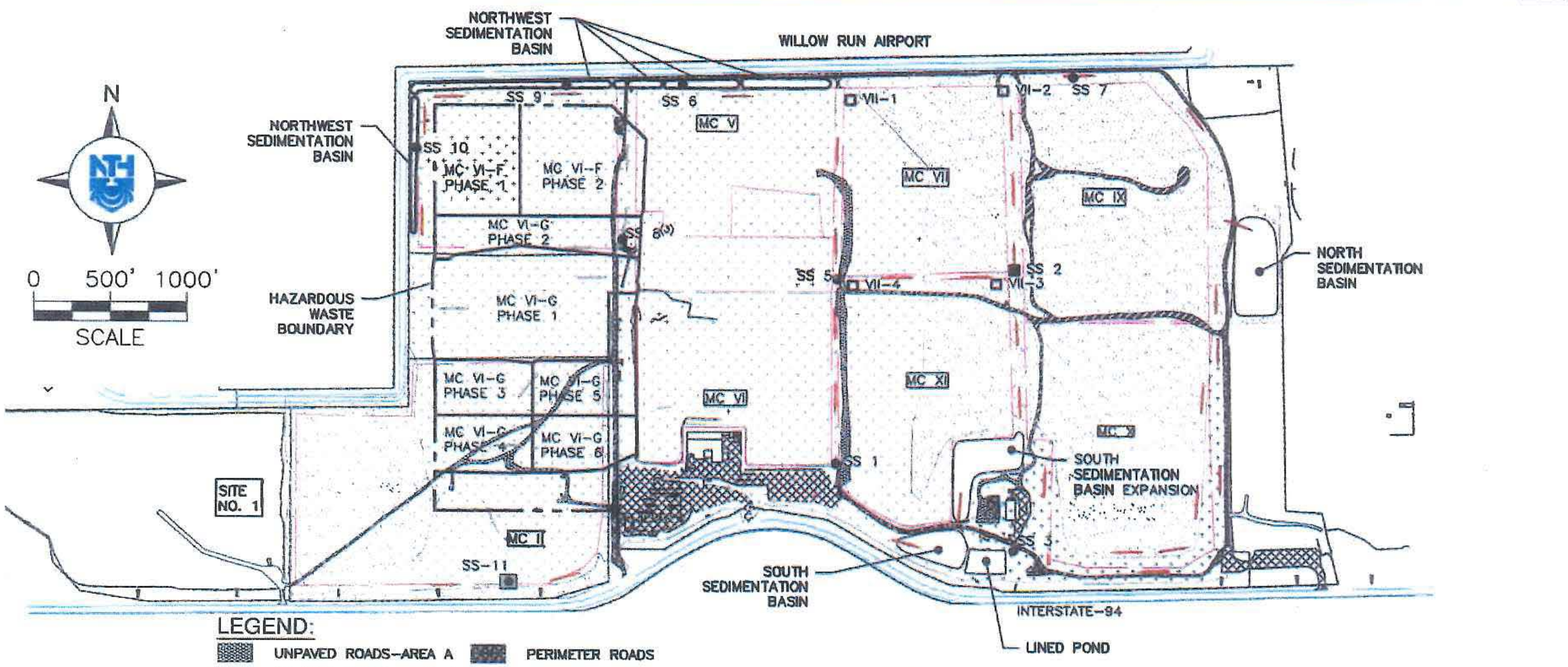
9.0 REPORTING REQUIREMENTS

For quarterly reports, the final data must be received from the laboratory, evaluated and the report transmitted to the OWMRP/MDEQ within 60 days of sampling. The report must include a narrative description of the sampling event, a map showing the locations sampled, copies of the sampling logs, a summary and discussion of the analytical data and the data statistics, a discussion of field and laboratory QA/QC, the field measurements collected (pH, specific conductance, temperature and dissolved oxygen), a description of any statistically significant events (i.e. ASSI and/or CSSI), any resampling or additional sampling conducted as a result of a CSSI, and any additional actions proposed as a result of the reported data.

In addition to the quarterly reports, an annual summary report of surface water monitoring results must be submitted to the OWMRP/MDEQ 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 statistically significant events (i.e. ASSI and/or CSSI), any resampling of additional sampling conducted as a result of a CSSI, and any additional actions proposed as a result of the reported data.

10.0 RECORD KEEPING REQUIREMENTS

All analytical data and quarterly and annual monitoring reports must be stored on site within the EHS filing system and be available for inspection as required.



LEGEND:

▩ UNPAVED ROADS-AREA A
■ PERIMETER ROADS
▨ UNPAVED ROADS-AREA B
▦ PAVED SURFACES
AREA A
AREA B
● SS 1 SURFACE WATER SAMPLING LOCATION
▣ SS 11 SURFACE WATER SAMPLING LOCATION – POST MC VI F/G CONSTRUCTION
□ VII-1 CAP DRAIN OUTLETS
— DIRECTION OF INTERIM SURFACE WATER FLOW
— DIRECTION OF SURFACE WATER FLOW – POST MC VI F/G CONSTRUCTION

NOTES:

1. ROADWAYS ARE SHOWN FOR REFERENCE ONLY AND MAY NOT REPRESENT THE ACTUAL ROADWAY DIMENSIONS.
2. ANY REVISIONS TO THIS DRAWING REQUIRE THE APPROVAL OF THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY WASTE AND HAZARDOUS MATERIALS DIVISION. APPROVED REVISIONS MUST BE ATTACHED TO THE FOLLOWING DOCUMENTS: SOIL MONITORING SAP, SURFACE WATER MONITORING SAP, TRACKOUT MANAGEMENT SOP, FUGITIVE DUST MANAGEMENT SOP.
3. SS-8 WILL BE REMOVED WHEN CELL CONSTRUCTION BEGINS IN THIS AREA.

NTH PROJECT No.: 62080376	DESIGNED BY: KRO	CHECKED BY: ACE	DRAWING SCALE: AS SHOWN	NTH Consultants, Ltd. Infrastructure Engineering and Environmental Services	WAYNE DISPOSAL, INC. SITE NO. 2	SURFACE WATER MONITORING LOCATION PLAN	FIGURE: 1
CAD FILE NAME: 080376-SWP	DRAWN BY: KRO	INCEPTION DATE: 02/16/09	PLOT DATE: 12/9/2014		VAN BUREN TWP., WAYNE COUNTY, MICHIGAN		

J:\62\62080376\Reports\Env\LIC\080376-SWP.dwg

Figure 2. Sample Collection Log for Surface Water - WDI Site #2

Sample ID:	**Sample Date:**	**Sample Time:**
Sample Location:	**Sampling Method:**	**Sampler:**

Sample Description/Comments*:

Field Measurements:

pH ________ **Specific Conductance**_________ **Temperature**_______

Sample ID:	**Sample Date:**	**Sample Time:**
Sample Location:	**Sampling Method:**	**Sampler:**

Sample Description/Comments*:

Field Measurements:

pH ________ **Specific Conductance**_________ **Temperature**_______

Sample ID:	**Sample Date:**	**Sample Time:**
Sample Location:	**Sampling Method:**	**Sampler:**

Sample Description/Comments*:

Field Measurements:

pH ________ **Specific Conductance**_________ **Temperature**_______

Sample ID:	**Sample Date:**	**Sample Time:**
Sample Location:	**Sampling Method:**	**Sampler:**

Sample Description/Comments*:

Field Measurements:

pH ________ **Specific Conductance**_________ **Temperature**_______

* Note clarity of samples and any color, sheen, odor or other relevant characteristics of the sample

Table 1. Description of Surface Water Monitoring Locations

Sampling Location	Stormwater Run-Off Source Unique to Location	Area Designation
SS-1	east side of MC VI and west side of MC XI	A
SS-2	southeast corner of MC VII, northeast corner of MC XI part of west side of MC X and southeast cover drain of MC VII	B
SS-5	east side of MC V (and VI-E), west and part of south sides of MC VII and part of north side of MC XI	A
SS-6	north side of MC-V	A
SS-7	east side of MC VII, west side of MC IX, part of north side of MC IX, and northeast cover drain of MC VII	B
SS-8	east side of MC-IV and west side of MC-V (to be abandoned for VI F&G construction)	A
SS-9	north of MCI VI-F (to be added when VI-F ditch is constructed)	A
SS-10	west of MC VI-F (to be added when VI-F ditch is constructed)	A
SS-11	south of MC-1/VI-G (to be added when cell VI-G is constructed)	A
samples collected quarterly unless no significant precipitation events for the calendar quarter		

Table 2. Surface Water Monitoring Parameters - WDI Site #2

Parameters	**MDL (mg/L)**[3]	**Sample Preparation Method**	**Analytical Method**
Indicator Parameters			
Alkalinity	20	---	SM 2320B-11
Bicarbonate	20	---	SM 2320B-11
Carbonate	2	---	SM 2320B-11
Chloride	1	---	SM 4500-Cl E-11
Nitrate	0.01	---	SM 4500-NO3 F-11
pH	0.5-12.5	---	SM 4500-H+ B-11
Specific Conductance	5 (umhos/cm)	2510B	SM 2510B-11
Sulfate	2	ASTM D516-90	SM-4500-SO4 E-11
Total Suspended Solids	4	2540D	SM-2540D-11
Total Phenolics	0.01	EPA 420.4	EPA 420.4
Total Cyanide	0.005	EPA 9410	EPA 9410
Amenable Cyanide	0.05	EPA 9410	EPA 9410
Metals			
Arsenic	0.001	EPA 3020A	EPA 6020A
Barium	0.005	EPA 3020A	EPA 6020A
Cadmium	0.0002	EPA 3020A	EPA 6020A
Calcium	1	EPA 3010A	EPA 6010C
Chromium (total)	0.001	EPA 3020A	EPA 6020A
Chromium (hexavalent)	0.005	---	EPA 7196A
Iron	0.02	EPA 3010A	EPA 6010C
Magnesium	1	EPA 3010A	EPA 6010C
Manganese	0.005	EPA 3020A	EPA 6020A
Mercury	0.0002	EPA 7470A	EPA 7470A
Selenium	0.001	EPA 3020A	EPA 6020A
Silver	0.0002	EPA 3020A	EPA 6020A
Sodium	1	EPA 3010A	EPA 6010C
Zinc	0.02	EPA 3020A	EPA 6020A
VOCs	0.001 to 0.005	---	EPA 8260B
PCBs	0.0001	EPA 3510C	EPA 8082A

EPA methods from TEST METHODS FOR EVALUATING SOLID WASTE, USEPA SW-846
SM methods from STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER
MDLs are Target Detection Limits per Op Memo OWMRP 111/115-8

Table 2. Surface Water Monitoring Parameters - WDI Site #2

Parameters	MDL (mg/L)[3]	Sample Preparation Method	Analytical Method
Organic Parameters			
Benzene	0.001	---	EPA 8260B
Bromodichloromethane	0.001	---	EPA 8260B
Bromoform	0.001	---	EPA 8260B
Bromomethane	0.005	---	EPA 8260B
Carbon Tetrachloride	0.001	---	EPA 8260B
Chlorobezene	0.001	---	EPA 8260B
Chloroethane	0.005	---	EPA 8260B
2-Choroethylvinyl ether	0.005	---	EPA 8260B
Chloroform	0.001	---	EPA 8260B
Chloromethane	0.005	---	EPA 8260B
Dibromochloromethane	0.001	---	EPA 8260B
1,2 Dichlorobenzene	0.001	---	EPA 8260B
1,3 Dichlorobenzene	0.001	---	EPA 8260B
1,4 Dichlorobenze	0.001	---	EPA 8260B
1,1 Dichloroethane	0.001	---	EPA 8260B
1,2 Dichloroethane	0.001	---	EPA 8260B
1,1 Dichloroethaene	0.001	---	EPA 8260B
trans 1,2 Dichloroethene	0.001	---	EPA 8260B
1,2 Dichloropropane	0.001	---	EPA 8260B
cis 1,3 Dichloropropene	0.001	---	EPA 8260B
trans 1,3 Dichloropropene	0.001	---	EPA 8260B
Ethyl benzene	0.001	---	EPA 8260B
Methylene chloride	0.005	---	EPA 8260B
1,1,2,2 tetrachloroethane	0.001	---	EPA 8260B
Tetrachloroethene	0.001	---	EPA 8260B
Toluene	0.001	---	EPA 8260B
1,1,1 Trichloroethane	0.001	---	EPA 8260B
1,1,2 trichloroethene	0.001	---	EPA 8260B
Trichloroethene	0.001	---	EPA 8260B
Trichlorofluoromethane	0.001	---	EPA 8260B
Vinyl chloride	0.001	---	EPA 8260B
PCBs			
PCB-1016	0.0001	EPA 3510C	EPA 8082A
PCB-1221	0.0001	EPA 3510C	EPA 8082A
PCB-1232	0.0001	EPA 3510C	EPA 8082A
PCB-1242	0.0001	EPA 3510C	EPA 8082A
PCB-1248	0.0001	EPA 3510C	EPA 8082A
PCB-1254	0.0001	EPA 3510C	EPA 8082A
PCB-1260	0.0001	EPA 3510C	EPA 8082A

EPA methods from TEST METHODS FOR EVALUATING SOLID WASTE, USEPA SW-846
SM methods from STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER
MDLs are Target Detection Limits per Op Memo OWMRP 111/115-8

Attachment A
Statistical Monitoring Plan for Surface Water Monitoring

Wayne Disposal, Inc., Site #2
MID 048 090 633

Revision 1.0, December 1994
Revision 1.1, October, 1999

Statistical Monitoring Plan for Surface Water Monitoring

WDI Site #2 Hazardous Waste Landfill
MID 048 090 633

Revision 1.0, December 94
Revision 1.1, October 99

I. Introduction

The following statistical monitoring plan provides a description of the statistical procedures to be used for identifying a statistically significant increase of monitoring parameters in the surface water monitoring program for the above referenced facility. The program is intended to determine if hazardous waste constituents may be entering the storm water run-off from non-contact areas of the facility.

II. Statistical Evaluation

The statistical program provides two procedures to be used together for each set of monitoring data. The first procedure applies to the volatile organic and PCB compounds only and is not a true statistical test. For these compounds, any occurrence above the reported detection limit (which is a statistical quantity to some degree) is considered statistically significant. The second procedure is a comparison of the overall inorganic surface water quality to the average quality during a background period by using the sign test. This procedure is described in detail below.

Statistical Sign Test - The purpose of this statistical analysis of the surface water is to determine whether the overall surface water quality during a monitoring event is statistically different compared to "background" surface water quality. To determine the statistical significance of differences between monitoring and background samples, a test know as the sign test is used. This test applies to all inorganic parameters, which will generally be present in detectable concentrations. The sign test determines if enough of these parameters are higher than the background averages to conclude that there is a statistically significant difference in water quality.

The sign test will be performed at the 0.05 significance level to determine if the number of parameters that are present in the monitoring samples in higher concentrations than the background is statistically significant. To perform the sign test, the concentration of each inorganic monitoring parameter is compared to the background concentration for that sampling event. The current background concentrations utilized for the sign test are presented on Table 2. If the monitoring concentration is higher, then a "+" is assigned to that parameter; if the background concentration is higher then a "-" is assigned for that parameter; and if the concentration are equal then a "0" is assigned for that parameter. The total number of "+" parameters and the total number if "+" and "-" parameters are then used with the binomial probability table, Table 1, attached to this plan. To determine if the number of "+"parameters is statistically significant, the table is entered at n, the total number of "+" and "-" parameters and the corresponding value for y is determined for the largest number for alpha that is less than or equal to 0.05. This number y is the smallest number of "-" parameters that can be obtained without a statistically significant increase (e.g. if there are any less "-" parameters then there will be too many "+" parameters.) So the number of pluses is statistically significant if it is greater than the total number of pluses and minuses less the quantity y determined form the table. For instance, if there are eight parameters, the largest value of y corresponding to a value of alpha less than 0.05 is 1. Therefore, 8 - 1 = 7 plus values (or 8 plus values) would result in a failure of the test.

TABLE 1
BINOMIAL DISTRIBUTION
Alpha = P[X<y] for b(X;n,0.050)

n	y	Alpha	n	y	Alpha	n	y	Alpha	n	y	Alpha
1	0	0.5000	8	0	0.0039	12	0	0.0002	15	0	0.0000
1	1	1.0000	8	1	0.0352	12	1	0.0032	15	1	0.0005
			8	2	0.1445	12	2	0.0193	15	2	0.0037
2	0	0.2500	8	3	0.3633	12	3	0.0730	15	3	0.0176
2	1	0.7500	8	4	0.6367	12	4	0.1938	15	4	0.0592
2	2	1.0000	8	5	0.8555	12	5	0.3872	15	5	0.1509
			8	6	0.9648	12	6	0.6128	15	6	0.3036
3	0	0.1250	8	7	0.9961	12	7	0.0862	15	7	0.5000
3	1	0.5000	8	8	1.0000	12	8	0.9270	15	8	0.6964
3	2	0.8750				12	9	0.9807	15	9	0.8491
3	3	1.0000	9	0	0.0028	12	10	0.9968	15	10	0.9408
			9	1	0.0195	12	11	0.9998	15	11	0.9824
4	0	0.0625	9	2	0.0898	12	12	1.0000	15	12	0.9963
4	1	0.3125	9	3	0.2539				15	13	0.9995
4	2	0.6875	9	4	0.5000	13	0	0.0001	15	14	1.0000
4	3	0.9375	9	5	0.7461	13	1	0.0017	15	15	1.0000
4	4	1.0000	9	6	0.9102	13	2	0.0112			
			9	7	0.9805	13	3	0.0461			
5	0	0.0313	9	8	0.9980	13	4	0.1334			
5	1	0.1875	9	9	1.0000	13	5	0.2905			
5	2	0.5000				13	6	0.5000			
5	3	0.8125	10	0	0.0010	13	7	0.7095			
5	4	0.9687	10	1	0.0107	13	8	0.8666			
5	5	1.0000	10	2	0.0547	13	9	0.9539			
			10	3	0.1719	13	10	0.9888			
6	0	0.0156	10	4	0.3770	13	11	0.9983			
6	1	0.1094	10	5	0.6230	13	12	0.9999			
6	2	0.3437	10	6	0.8281	13	13	1.0000			
6	3	0.6562	10	7	0.9453						
6	4	0.8906	10	8	0.9893	14	0	0.0001			
6	5	0.9844	10	9	0.9990	14	1	0.0009			
6	6	1.0000	10	10	1.0000	14	2	0.0065			
						14	3	0.0287			
7	0	0.0078	11	0	0.0005	14	4	0.0898			
7	1	0.0625	11	1	0.0059	14	5	0.2120			
7	2	0.2266	11	2	0.0327	14	6	0.3953			
7	3	0.5000	11	3	0.1133	14	7	0.6047			
7	4	0.7734	11	4	0.2744	14	8	0.7880			
7	5	0.9375	11	5	0.5000	14	9	0.9102			
7	6	0.9922	11	6	0.7256	14	10	0.9713			
7	7	1.0000	11	7	0.8867	14	11	0.9935			
			11	8	0.9673	14	12	0.9991			
			11	9	0.9941	14	13	0.9999			
			11	10	0.9995	14	14	1.0000			
			11	11	1.0000						

Table 2.
Sign Test Background Data for Surface Water
Wayne Disposal, Inc. Site No. 2

Parameter	Units	Number of Values	Mean
Arsenic	mg/l	24	0.015
Barium	mg/l	24	0.64
Cadmium	mg/l	24	0.017
Calcium	mg/l	24	304
Chromium (total)	mg/l	24	0.06
Chromium (hexavalent)	mg/l	24	0.009
Iron	mg/l	24	46.4
Magnesium	mg/l	24	66
Manganese	mg/l	24	1.19
Mercury	mg/l	24	0.0007
Selemum	mg/l	24	0.0043
Silver	mg/l	24	0.01
Sodium	mg/l	24	28
Zinc	mg/l	24	0.54
Alkalinity (total)	mg/l	24	187
Alkalinity (bircarbonate)	mg/l	24	187
Alkalinity (carbonate)	mg/l	24	18
Chloride	mg/l	24	54
Fecal Coliforms	Count/100 ml	24	9637
Nitrate	mg/l	24	0.76
pH	Stnd. Units	24	7.5
Sulfate	mg/l	24	213
Tot. Susp. Solids	mg/l	21	2797

Notes:

Background data were complied from eight quarters during period from May 1989 to April 1991

Detection Limits values are used for data which are reported to be below the method detection limit.

Wayne Disposal Inc.
2018 TSCA Permit Renewal

Attachment 6
Leachate Monitoring

LEACHATE MONITORING SAMPLING & ANALYSIS PLAN

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

1.0 INTRODUCTION

The purpose of this document is to outline the procedures for monitoring leachate in compliance with current license and permit conditions and applicable regulations. Leachate monitoring includes the collection and analysis of leachate samples and monitoring leachate levels for the purpose of ensuring that leachate is effectively removed from operating and closed hazardous waste landfill cells.

Collection and analysis of leachate samples is conducted in order to characterize the leachate for the purpose of developing or amending appropriate monitoring parameter lists for other monitoring programs such as groundwater and leak detection. The composition of the leachate over time may change during the operation of a landfill cell.

Leachate level monitoring is necessary to ensure that leachate collection systems are functioning properly so as to limit the leachate head on the liner system. CFR 40 264.301(2) states that "The Regional Administrator will specify design and operating conditions in the permit to ensure that the leachate depth over the liner does not exceed 30 cm (1 foot)". Wayne Disposal, Inc. Site #2 monitors the volume of leachate pumped from each active and closed cell at the facility. The volume of leachate pumped from each cell per month is recorded in the operating log. The following SAP describes how WDI maintains compliance with the conditions outlined above.

2.0 DESCRIPTION OF LEACHATE COLLECTION SYSTEMS

Leachate level control is a function of the design and operation of the leachate collection systems (LCS). Each LCS at WDI is designed to transmit leachate to the sump at rates sufficient to permit removal of leachate so that levels do not build up on the primary liner to a depth greater than one foot. The slope of the cell floor, permeability of granular materials, and the size and spacing of collector pipes are all taken into consideration in the design transmissivity of the LCS.

Once the leachate is conveyed to the collection sump, it must be removed at a rate sufficient to prevent leachate from backing up into the collection system to levels higher than one foot above the lowest elevation of the primary liner (the compliance elevation) , which is the liner elevation just outside of the sump. Each cell has a measured compliance elevation that is used to determine if the levels are in compliance. The pumps are set within the sump beneath the level where the leachate conveyance pipes enter the sump (see Figure 1.). These 4" or 6" diameter HDPE pipes are directly on top of the liner in the sump. The pumps are set to run automatically by either a timer system or a level sensor system. On the timer system, the pump runs until the sump is dry and then turns off. It restarts after a programmed time delay to allow enough leachate to accumulate in the sump for the pump to restart. The timed delay is adjusted as the leachate accumulation rate changes to keep the leachate head in compliance without over-using the pump. A level sensor does the same thing but uses a transducer to monitor the leachate level in the sump to trigger the pump to activate. As long as the pumps system is capable of maintaining leachate levels in the sump below the compliance elevation, then compliance with the one foot head rule is maintained. Therefore, the key to compliance is maintaining an operating collection system in each cell. Frequent inspection and swift repairs of these systems are necessary to ensure that any mechanical problems are remedied in a timely manner.

The volume of leachate pumped out of each sump is recorded on a totalizing flow meter which is placed in line in the discharge line from the pump. Leachate is conveyed to the wastewater pretreatment plant on site.

3.0 LEACHATE LEVEL AND VOLUME MEASUREMENTS

The keys to maintaining compliance with leachate level and volume record keeping requirements are frequency of inspection and maintenance of each system. To ensure proper performance of the leachate collection system, weekly inspections of the sump areas are conducted. Figure 2 is a checklist form for recording the results of this weekly inspection. The main components of this inspection are determining leachate levels in the sump, whether the pump/meter is operating correctly and the monthly volume of leachate. An outline of these procedures in the form of a flow chart is included on Figure 3. The procedures for the weekly inspection are as follows:

PUMP/METER FUNCTION

1. Turn pump on at the electrical panel
2. Listen for the sound of the pump turning on and check for meter advancement.
3. Take meter reading from flowmeter and record on form. If the meter has moved since the last reading then proceed to Step 2. If not, then proceed to step 1.b.
4. If the meter moves then proceed to step 2.
5. If meter does not move then:
    a. Determine if it is likely that the pump intake above the leachate level in sump. This can be done by visual inspection (can you see the pump above the leachate), by sound (the pump makes a distinctive noise when trying to draw in air), or by measuring the leachate head elevation. If the leachate level is below the sump intake then the inspection is completed and the results should be noted on the form.
    b. If the pump intake is below the leachate level then further investigation is necessary. Record the apparent malfunction on the inspection form and report results.

LEVEL MEASUREMENT

a. Measure the leachate level in sump from the top of the sump with an electronic water level sounding device.

b. Compare the depth to leachate with the minimum allowable depth listed on Figure 2. Determine whether the level is in compliance.

c. Record the result on the weekly inspection form.

d. Notify the Site Manager immediately if the levels are found to be above the allowable level.

REPAIRS

a. Unless a specific problem is evident from the inspection (e.g. the pump doesn't turn on), the following steps should be conducted:

    i. Remove the meter, switch back to "hand" position and check for flow.

    ii. If there is flow, then field clean the meter, replace and check for meter advancement. If the meter advances, then switch back to "auto" position. If not, take the meter in for repair or replacement.

    iii. If there is no flow, then disconnect power to pump and remove pump and pump switch from the sump. Inspect the electrical cord and the pump switch. Replace the pump and test functions. If the pump or the switch still doesn't work, remove the pump, have it power washed and get it repaired/replaced.

    iv. If the pump and meter are functional but no flow is observed then arrangements must be made to clean out the pipes.

    v. All actions taken and any repairs/replacements conducted must be reported to the Site Environmental Manager.

Every effort should be made to keep or restore leachate level compliance while maintenance or repairs are conducted. Spare parts and spare pumps should be kept in stock on site to minimize down time. In the event that leachate levels exceed compliance elevations due to equipment failure, the leachate level should be measured to determine when the levels return to compliance after repairs are completed.

The weekly inspection checklist forms are to be kept on file at the site. Any conditions noted that would require maintenance or repair should be noted on the weekly inspection form (Figure 2) and reported.

On a monthly basis, the total volume recorded on the flow meters from each sump is summarized from the Weekly Inspection Checklist for Leachate Collection Systems onto an electronic spread sheet.

In addition to these inspections, periodic maintenance of the LCS is required. In particular, leachate clean-out pipes, where present, must be jetted once every two years unless experience indicates that a more or less frequent jetting program is necessary or adequate.

4.0 LEACHATE SAMPLING AND ANALYSIS

Leachate samples are to be collected annually from each of the 18 currently operational collection sumps within Master Cells V, VI and VII as shown on Figure 4. The samples are collected during the third quarter of each year. Samples are collected by either 1) lowering a clean stainless steel sampling bucket vessel down into the sump and retrieving a sample, or 2) pumping leachate into a stainless steel bucket from a valve at the top of the riser pipe and collecting the sample using the stainless steel vessel. The stainless steel vessel and bucket must be decontaminated between each sample location with cleaning solution and a distilled water rinse.

The sample is then carefully decanted from the stainless steel vessel into appropriate sampling containers. Samples for VOC's are collected first while ensuring that no headspace is present within the sampling vials. Additional samples are then collected in order of decreasing volatility, semi-volatiles then total organic carbon then phenolics and finally metals and indicator parameters. Appropriate sample handling and container requirements are summarized on Figure 5. Metals are analyzed as "total metals" quantity; no filtration is required.

Protective gloves must be worn during sample collection and care should be taken to prevent spills on skin or clothing. Each sample container must be carefully labeled with the sampling location, time and date, identity of preservatives contained within and the sampler's initials. After collection, the samples shall be stored in a clean cooler containing ice or ice packs. The coolers containing samples must be stored in a secure location, on-site, until they are transported to the laboratory.

Field Quality Assurance/Quality Control samples must include:

- One trip blank for every ten samples collected. The trip blank must be stored in the cooler utilized for storing and shipping samples. The trip blank must be analyzed for VOCs.
- One field blank for each ten samples collected. The field blank samples are to be collected by filling an identical set of sample bottles at a given location with clean deionized water. The field blank samples must be analyzed VOCs.
- One blind duplicate for each sampling event. The duplicate must be collected by filling an identical set of sample bottles at a given location and submitting them for an identical analysis.
- One equipment blank per sampling day for each piece of non-dedicated sampling equipment utilized in the sampling process (i.e. the stainless steel bucket). The equipment blank must be collected by pouring clean deionized water into the decontaminated piece of equipment and collecting the rinsate in the appropriate jar for analysis. The equipment blank must be analyzed for VOCs.

A sample collection log (Figure 6) must be filled out at each sampling location. The log must be filled out to include the location, date, time, identity of sampler and a description of any unusual conditions encountered must be noted. A chain of custody form must be filled out for each sampling event. This form 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 this form must be retained on site.

Except as described below, each sample must be analyzed for the parameters listed on Figure 7, which also contains the analytical methods and targeted method detection limits. The detection limits listed on Table 7 (and Table 8) must be consistent with MDEQ Policy and Procedures document OWMRP-111/115-8 or approved by MDEQ, and may need to be revised as analytical methods change. Exceptions to the parameter lists are as follows: 1) The PCB's listed on Figure 5 are only analyzed in samples from Master Cell VI, and 2) In order to fully characterize the leachate, each of the leachate sumps in MC V, MC VI and MC VII must be analyzed for a modified list of 40 CFR 264 Appendix IX parameters on a rotating basis. The list is considered "modified" as dioxins and furans are analyzed at screening levels as opposed to a breakdown of the specific cogeners. Analysis of the cogeners requires the use of a specialty laboratory and the ultra-low detection limits have no practical use in this leachate characterization. Each year, two of the leachate samples must be analyzed for the modified list of Appendix IX parameters. The two cells sampled will change each year until all are sampled and then the process will be repeated throughout the operation of the facility. New cells will not be analyzed for the Appendix IX constituents until they have been producing leachate for at least one year. A list of Appendix IX parameters along with corresponding analytical methods and detection limits are presented on Figure 8. It is recognized that in most cases the detection limits shown on Figures 7 and 8 will not be attained due to sample dilutions and matrix effects.

5.0 REPORTING REQUIREMENTS

Within 60 days after each sampling event is completed, the analytical results must be submitted to MDEQ along with a summary of QA/QC data and the sampling documentation forms. In addition to the reporting requirements described above, an annual leachate report must be filed with the MDEQ by March 1 of the following year. In this report, annual leachate production rates, leachate head levels and leachate analytical results are to be evaluated and summarized. This summary must also include a description of any non-compliances and associated corrective actions and of any major maintenance or repair activities. The leachate analytical data must be evaluated with respect to the need to refine secondary collection and groundwater monitoring programs by summarizing, in table form, the rate of detection and concentration of leachate monitoring parameters. The results of this summary will be compared to groundwater and leak detection parameter lists. Any parameter that is found in more than 50% of the leachate samples and/or in concentrations greater than 1 mg/L will be considered for inclusion in the leak detection and/or groundwater monitoring program(s). WDI will recommend whether to include such a parameter based on its chemical properties and any other relevant information.

Leachate volume and head level information must be evaluated in graphical and/or tabular form, respectively. Monthly and annual volumes for each cell must be plotted to determine if there are increases in production rates that should be evaluated. The head levels must be presented to show the dates and results of head measurements and identify any periods where heads exceed the 1 foot limit as well as the duration of the exceedance and the cause and correction of the exceedance.

SCHEMATIC OF LEACHATE COLLECTION SUMP ARRANGEMENT
WAYNE DISPOSAL SITE #2 HAZARDOUS WASTE LANDFILL

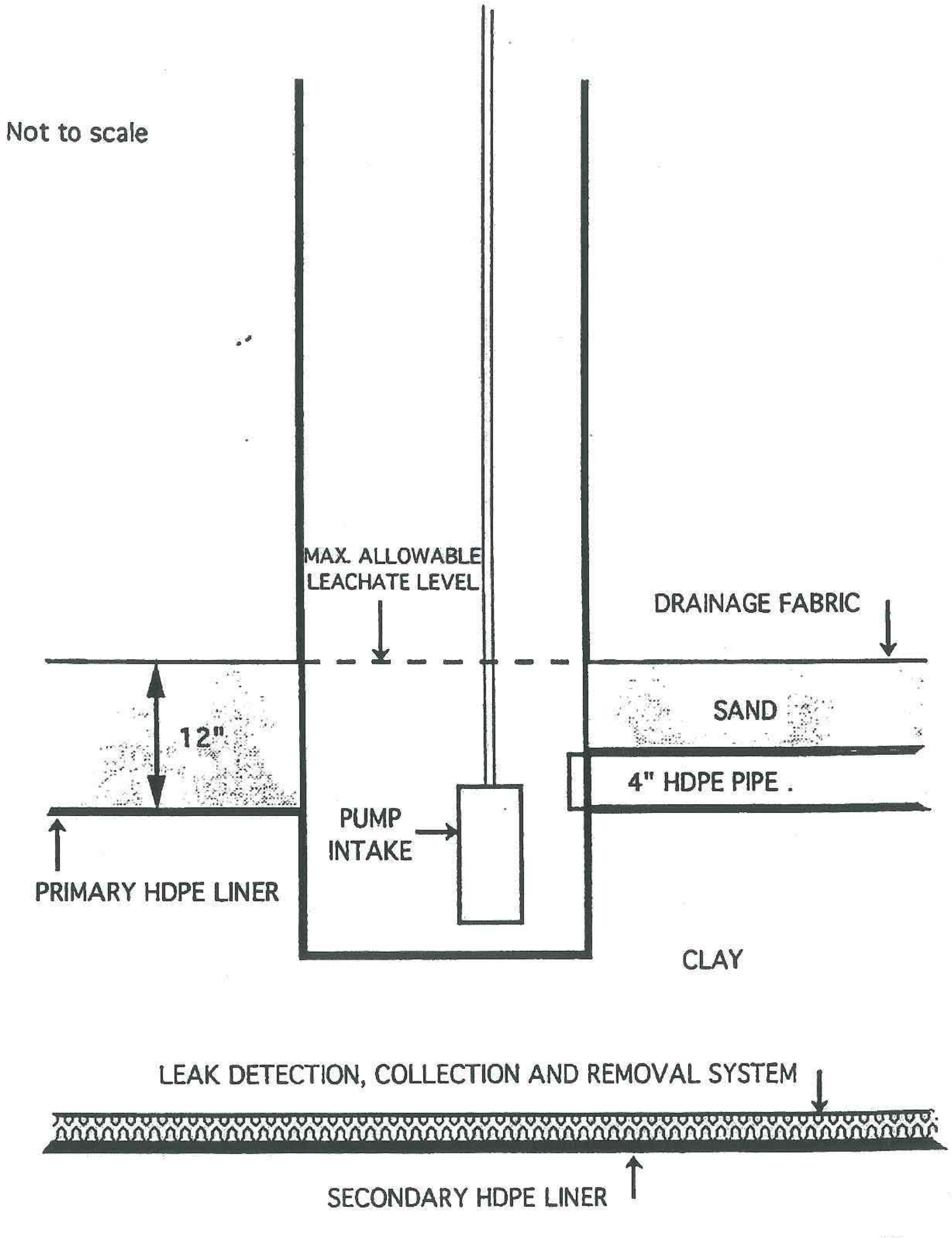


Figure 1

Figure 2

WEEKLY INSPECTION CHECKLIST FOR LEACHATE COLLECTION SYSTEM
WAYNE DISPOSAL, INC. SITE #2 HAZARDOUS WASTE LANDFILL MASTER CELLS

Inspector: ______________________________ **Date:** __________________

Cell	Meter Reading	Meter Advance?		Compliance Depth to Leachate (ft)	Actual Depth to Leachate (ft)	Level in Complaince?		Pump Functioning?		Meter Functioning?	
		Y	N			Y	N	Y	N	Y	N
V-A				68.8							
V-B				62.5							
V-C				55.9							
V-E				61.2							
VI-CONTACT				▨	▨	▨	▨				
VII-A				53.3							
VII-BN				49.3							
VII-BS				51.8							
VII-C				46.2							

Note: Report items needing immediate attention to the Site Manager

Comments/Action Taken ______________________________________

WEEKLY INSPECTION CHECKLIST FOR LEACHATE COLLECTION SYSTEM
WAYNE DISPOSAL, INC. SITE #2 HAZARDOUS WASTE LANDFILL MASTER CELLS

Inspector: ______________________ **Date:** ______________

Cell	Meter Reading	Meter Advance?		Compliance Depth to Leachate (ft)	Actual Depth to Leachate (ft)	Level in Complaince?		Pump Functioning?		Meter Functioning?	
		Y	N			Y	N	Y	N	Y	N
VI-AS				128.4							
VI-AN				127.4							
VI-B				137.2							
VI-C				102.1							
VI-D				126.6							
VI-ESW				26.0							
VI-ESE				37.0							
VI-ENW				69.8							
VI-ENE				102.7							
VI-G				225.8							

Note: Report items needing immediate attention to the Site Manager

Leachate and Contact Water Collection Systems	Yes	No
Leachate collection sump riser covers present and properly seated (if applicable)?		
Condition of leachate collection sump risers acceptable?		
Leachate depths in each collection sump in compliance?		
Pumps functioning properly?		
Condition of flow meters acceptable?		
Secondary containment monitoring sumps for leachate and contact water force mains free of liquid?		

Comments/Action Taken ______________________

____

____

____

____

Leachate and Contact Water Collection Systems

Top cover is required only if riser rim is low enough to be a fall hazard. If present, verify that cover is properly seated.

Inspect aboveground exterior and visible interior portions of risers for damage, stress (buckling) and deterioration.

Measure depth to leachate in each collection sump. If leachate head is non-compliant, immediately notify the Landfill Manager (or designee).

Inspect flow meters for damage or malfunction. Report meter readings to Landfill Manager (or designee).

Check for liquid in the secondary containment monitoring sumps for both the leachate and contact water force mains. If liquid is present, determine whether it is condensate, groundwater or leachate/contact water. If condensate, no action required. If groundwater, there is a leak in the secondary pipe. If leachate or contact water, there is a leak in the primary pipe. Any leaks must be reported to the Landfill Manager immediately and repaired.

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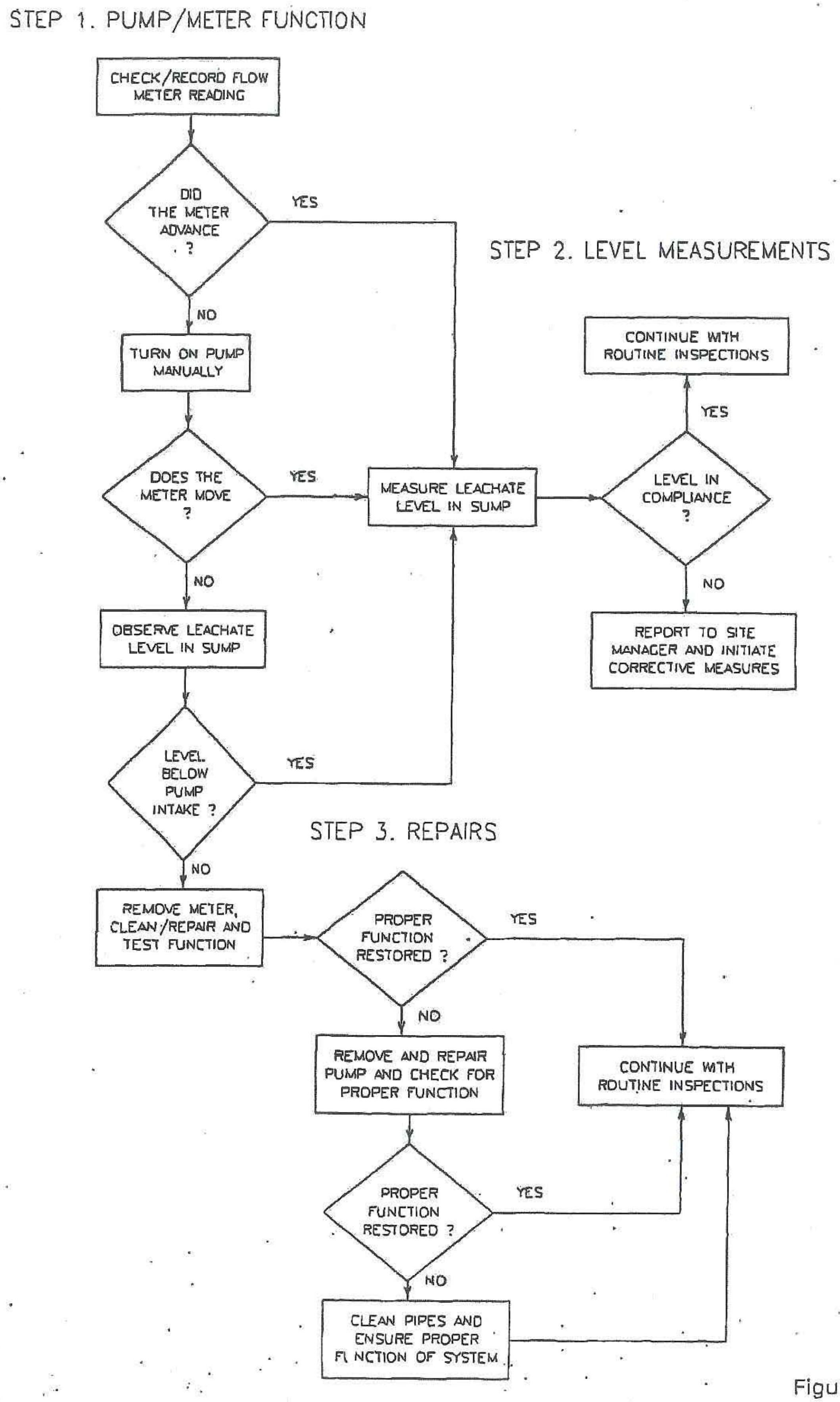
STEP 1. PUMP/METER FUNCTION
CHECK/RECORD FLOW METER READING
DID THE METER ADVANCE ?
YES
NO
TURN ON PUMP MANUALLY
DOES THE METER MOVE ?
YES
NO
OBSERVE LEACHATE LEVEL IN SUMP
LEVEL BELOW PUMP INTAKE ?
YES
NO
REMOVE METER, CLEAN/REPAIR AND TEST FUNCTION
STEP 2. LEVEL MEASUREMENTS
MEASURE LEACHATE LEVEL IN SUMP
LEVEL IN COMPLIANCE ?
YES
CONTINUE WITH ROUTINE INSPECTIONS
NO
REPORT TO SITE MANAGER AND INITIATE CORRECTIVE MEASURES
STEP 3. REPAIRS
PROPER FUNCTION RESTORED ?
YES
NO
REMOVE AND REPAIR PUMP AND CHECK FOR PROPER FUNCTION
CONTINUE WITH ROUTINE INSPECTIONS
PROPER FUNCTION RESTORED ?
YES
NO
CLEAN PIPES AND ENSURE PROPER FUNCTION OF SYSTEM

Figure 3.

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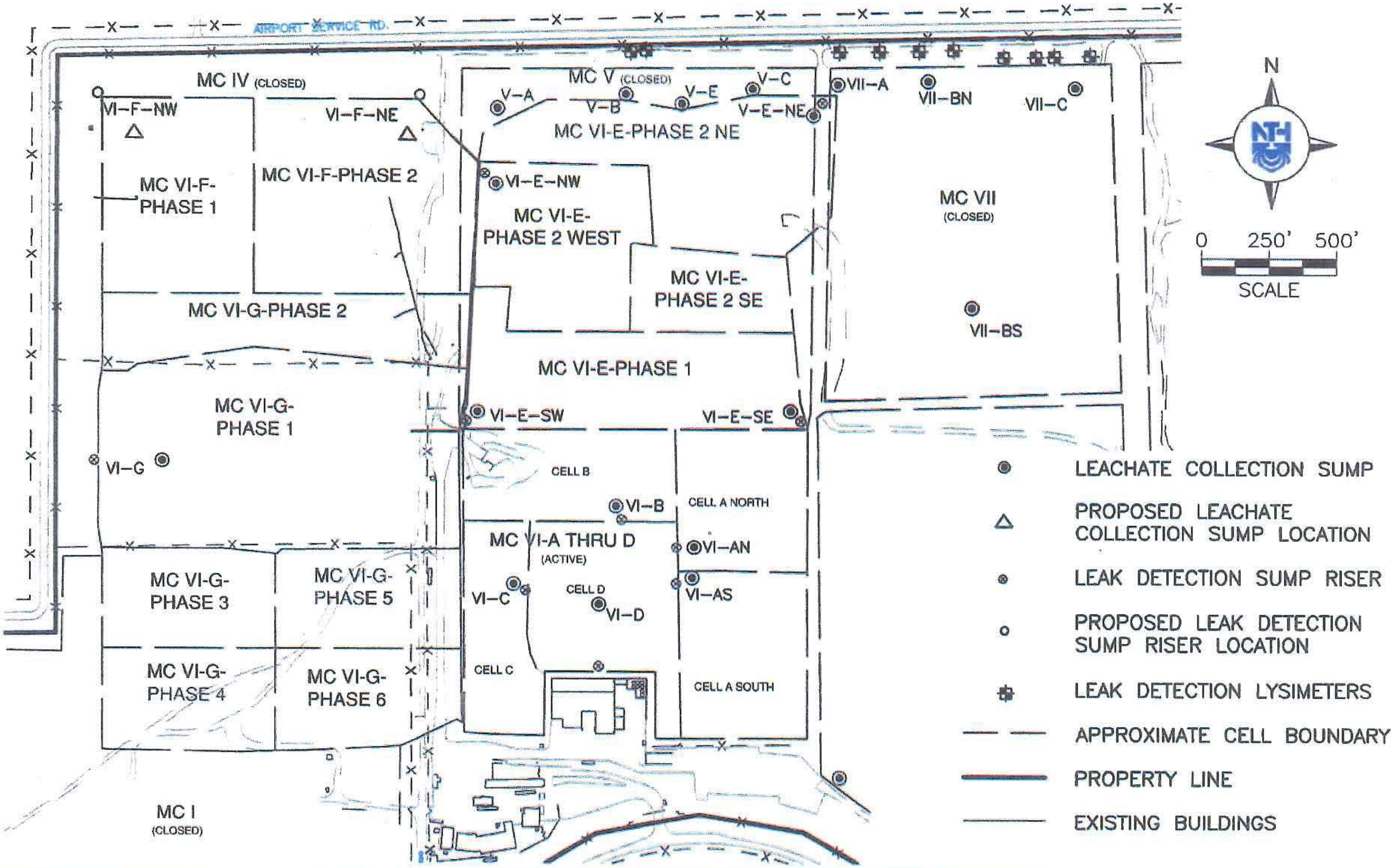


NTH PROJECT No.: 62-080376-00	DESIGNED BY: KRO	CHECKED BY: ACE	DRAWING SCALE: AS SHOWN	NTH Consultants, Ltd. Infrastructure Engineering and Environmental Services	LEACHATE COLLECTION & LEAK DETECTION LOCATIONS	FIGURE 4
CAD FILE NAME: 080376-LCS	DRAWN BY: KRO	INCEPTION DATE: 1/27/2011	PLOT DATE: 12/1/14		WAYNE DISPOSAL, INC. SITE NO. 2 VAN BUREN TWP., WAYNE COUNTY, MICHIGAN	

Figure 5. Handling Requirements of Monitoring Parameters

Parameter	Perservation	Holding Time	Bottle Type	Minimum Volume
Total Phenolics	1,2	28 Days	Amber Glass	500 ml
Sulfate	2	28 Days	Plastic	50 ml*
Alkalinity	2	14 Days	Plastic	100 ml*
Chloride	2	28 Days	Plastic	50 ml*
Total Phosphorus	1,2	28 Days	Plastic	200 ml***
Total Cyanide	4	14 Days	Plastic	500 ml
Nitrate/Nitrite	1,2	48 Hours	Plastic	500 ml
Kjeldahl Nitrogen	1,2	28 Days	Plastic	200 ml***
Aluminum	3,5	6 Mos	Plastic	200 ml**
Antimony	3,5	6 Mos	Plastic	200 ml**
Arsenic	3,5	6 Mos	Plastic	200 ml**
Barium	3,5	6 Mos	Plastic	200 ml**
Beryllium	3,5	6 Mos	Plastic	200 ml**
Cadmium	3,5	6 Mos	Plastic	200 ml**
Calcium	3,5	6 Mos	Plastic	200 ml**
Chromium	3,5	6 Mos	Plastic	200 ml**
Chromium, Hexavalent	2,5	24 Hrs	Plastic	100 ml
Cobalt	3,5	6 Mos	Plastic	200 ml**
Copper	3,5	6 Mos	Plastic	200 ml**
Iron	3,5	6 Mos	Plastic	200 ml**
Potassium	3,5	6 Mos	Plastic	200 ml**
Lead	3,5	6 Mos	Plastic	200 ml**
Magnesium	3,5	6 Mos	Plastic	200 ml**
Manganese	3,5	6 Mos	Plastic	200 ml**
Mercury	3,5	6 Mos	Plastic	200 ml**
Molybdenum	3,5	6 Mos	Plastic	200 ml**
Nickel	3,5	6 Mos	Plastic	200 ml**
Selenium	3,5	6 Mos	Plastic	200 ml**
Silver	3,5	6 Mos	Plastic	200 ml**
Sodium	3,5	6 Mos	Plastic	200 ml**
Thallium	3,5	6 Mos	Plastic	200 ml**
Tin	3,5	6 Mos	Plastic	200 ml**
Vanadium	3,5	6 Mos	Plastic	200 ml**
Zinc	3,5	6 Mos	Plastic	200 ml**
pH		Immediate	Plastic	25 ml
Bicarbonate	2	14 Days	Plastic	100 ml*
Carbonate	2	14 Days	Plastic	100 ml*
Total Organic Carbon	1,7	28 Days	Glass	100 ml
Chemical Oxygen Demand	1,2	28 Days	Glass	250 ml
Specific Conductivity	2	28 Days	Plastic	100 ml
Semi-Volatile Organics	2	14 Days	Glass/Teflon	1000 ml
Volatile Organics	2,6	14 Days	Glass/Teflon	2x40 ml
PCBs	2	7 Days-Extraction	Glass	2 L
	2	40 Days-Analysis	Glass	40 ml

1) pH<2 with concentrated Sulfuric Acid
2) Store at 4 degrees Centigrade
3) pH<2 with nitric acid
4) pH>12 with sodium hydroxide
5) Filtered using 0.45 micron membrane filters on the daily of sample collection
6) 4 drops HCL, no headspace
7) pH<2 with hydrochloric acid

* Note: One liter for all these parameters stored similarly
** Note: One liter for all these parameters stored similarly
*** Note: One liter for all these parmeters stored similarly

Figure 6. Sample Collection Log for Leachate - WDI Site #2

Sample ID:	**Sample Date:**	**Sample Time:**
Sample Location:	**Sampling Method:**	**Sampler:**
Observations/Comments*:		

Sample ID:	**Sample Date:**	**Sample Time:**
Sample Location:	**Sampling Method:**	**Sampler:**
Observations/Comments*:		

Sample ID:	**Sample Date:**	**Sample Time:**
Sample Location:	**Sampling Method:**	**Sampler:**
Observations/Comments*:		

Sample ID:	**Sample Date:**	**Sample Time:**
Sample Location:	**Sampling Method:**	**Sampler:**
Observations/Comments*:		

Sample ID:	**Sample Date:**	**Sample Time:**
Sample Location:	**Sampling Method:**	**Sampler:**
Observations/Comments*:		

* Note anything unusual in the sample or conditions of or near the riser pipe

FIGURE 7. METHODS AND DETECTION LIMITS

PARAMETER	MDL (mg/L)	METHOD
TOTAL PHENOLICS	0.01	9066
SULFATE	2	ASTM D516-90
TOTAL ALKALINITY	20	2320B
CHLORIDE	1.0	4500-Cl E
KJELDAHL NITROGEN	0.1	351.2
NITRATE/NITRITE	0.1	4500-NO3 F
TOTAL PHOSPHORUS	0.01	4500-P E
TOTAL CYANIDE	0.005	4500-CN G
ALUMINUM	0.05	6010/6020
ANTIMONY	0.001	6020
ARSENIC	0.001	6020
BARIUM	0.005	6010/6020
BERYLLIUM	0.001	6010/6020
CADMIUM	0.0002	6020
CALCIUM	1	6010
CHROMIUM	0.001	6010/6020
HEX. CHROMIUM	0.005	7196
COBALT	0.015	6010/6020
COPPER	0.001	6010/6020
IRON	0.02	6010
LEAD	0.001	6020
MAGNESIUM	1	6010
MANGANESE	0.005	6010/6020
MERCURY	0.0002	7470
MOLYBDENUM	0.025	6010/6020
NICKEL	0.002	6010/6020
POTASSIUM	0.1	6010
SELENIUM	0.001	7741/6020
SILVER	0.0002	6020/7760
SODIUM	1	6010
THALLIUM	0.002	6020/7841
TIN	0.5	6020
VANADIUM	0.002	6010/6020
ZINC	0.1	6010/6020
pH	N/A	4500-H B
BICARBONATE	10.0	2320B
CARBONATE	10.0	2320B
TOTAL ORGANIC CARBON	0.5	5310C
CHEMICAL OXYGEN DEMAND	10.0	5220D
SPEC. CONDUCTANCE	5.0	2510B
SEMI-VOLATILE ORGANICS*	**	8270
VOLATILE ORGANICS*	**	8260
PCB's	**	8082

* see attached lists of compounds

** detection limits are compound dependent

FIGURE 7 ORGANIC COMPOUNDS FOR LEACHATE MONITORING

VOLATILE ORGANIC PARAMETERS (8260)	MDL (mg/L)	SEMI-VOLATILE ORGANIC PARMETERS (8270)			
			MDL		MDL
Acetone	0.020	Acenapthene	0.001	Hexachlorobenzene	0.001
Bromodichloromethane	0.001	Acenapthylene	0.001	Hexachlorobutadiene	0.001
Bromoform	0.001	Anthracene	0.001	Hexachlorocyclopentadiene	0.010
Bromomethane	0.005	Benzidene	0.080	Hexachloroethane	0.001
Carbon Tetrachloride	0.001	Benzo(a)anthracene	0.001	Indeno (1,2,3-cd) pyrene	0.002
Chlorobenzene	0.001	Benzo(b)fluoranthene	0.001	Isophorone	0.001
Chloroethane	0.005	Benzo(k)fluoranthene	0.001	2-Methylnapthalene	0.005
2-Chloroethylvinyl Ether	0.010	Benzo(ghi)perylene	0.001	Napthalene	0.001
Chloroform	0.005	Benzoic Acid	0.050	2-Nitroaniline	0.020
Chloromethane	0.005	Benzo(a)pyrene	0.001	3-Nitoraniline	0.020
Dibromodifluoromethane	0.001	Benzyl alcohol	0.050	4-Nitroaniline	0.020
1,2 Dichlorobenzene	0.001	Bis (2-chloroethoxy) methane	0.002	Nitrobenzene	0.002
1,3 Dichlorobenzene	0.001	Bis (2-chloroethyl) ether	0.001	N-Nitrosodiphenylamine	0.002
1,4 Dichlorobenzene	0.001	Bis (2)chloroisopropyl) ether	0.001	N-Nitroso-di-n-propylamine	0.002
Dichlorodifluoromethane	0.001	Bis (2-ethylhexyl) phthalate	0.005	Phenanathrene	0.001
1,1-Dichloroethane	0.001	4-Bromo phenyl ether	0.002	Pyrene	0.001
1,2-Dichloroethane	0.001	Butyl benzyl phthalate	0.005	1,2,4-Trichlorobenzene	0.002
1,1-Dichloroethene	0.001	4-Chloroaniline	0.010	4-Chloro-3-methylphenol	0.005
1,2-Dichloroethene	0.001	2-chloronapthene	0.002	2-Chlorophenol	0.010
1,2 Dichloropropane	0.001	4-Chlorophenyl phenyl ether	0.001	2,4-Dichlorophenol	0.010
1,3 Dichloropropene	0.001	Chrysene	0.001	2,4-Dimethylphenol	0.005
1,1,2,2 Tetrachloroethane	0.001	Dibenz (a,h) anthracene	0.002	4,6-Dinitro-2-methylphenol	0.050
Tetrachloroethane	0.001	Dibenzofuran	0.004	2,4-Dinitrophenol	0.025
Tetrachloroethene	0.001	Di-n-butyl phthalate	0.005	2-Methylphenol	0.010
1,1,2-Trichloroethane	0.001	1,2-Dichlorobenzene	0.001	3-Methylphenol	0.010
1,1,1-Trichloroethane	0.001	1,3-Dichlorobenzene	0.001	4-Methylphenol	0.010
Trichloroethene	0.001	1,4-Dichlorobenzene	0.001	2-Nitrophenol	0.005
Trichlorofluoromethane	0.001	3,3'-Dichlorobenzene	0.020	4-Nitrophenol	0.025
Vinyl Chloride	0.001	Diethyl pthalate	0.005	Pentachlorophenol	0.020
Methylene Chloride	0.005	Dimethyl pthalate	0.005	Phenol	0.005
Methyl Ethyl Ketone	0.005	2,4-Dinitrotoluene	0.005	2,4,5-Trichlorophenol	0.005
Benzene	0.001	2,6-Dinitrotoluene	0.005	2,4,6-Trichlorophenol	0.004
Toluene	0.001	Di-n-octyl phthalate	0.005		
Ethylbenzene	0.001	Fluoranthene	0.001		
Total Xylenes	0.003	Fluorene	0.001		
4-Methyl-2-Pentanone	0.005				
Isobutyl Alcohol	1.000				
1.4-Dioxane	0.001				
PCB's (Method 8082)					
PCB-1016	0.0001	PCB-1232	0.0001	PCB-1248	0.0001
PCB-1221	0.0001	PCB-1242	0.0001	PCB-1254	0.0001
PCB-1260	0.0001				

FIGURE 8. METHODS AND DETECTION LIMITS FOR APPENDIX IX PARAMETERS

Constituent	Method	Detection Limit	Unit
Cyanide, Total	9012	0.005	mg/L
Sulfide	9030	0.020	mg/L
Antimony	6010/6020	0.001	mg/L
Arsenic	7061	0.001	mg/L
Barium	6010	0.005	mg/L
Beryllium	6010	0.001	mg/L
Cadmium	6010	0.0002	mg/L
Chromium	6010	0.001	mg/L
Cobalt	6010	0.015	mg/L
Copper	6010	0.001	mg/L
Lead	6010	0.001	mg/L
Mercury	7470	0.0002	mg/L
Nickel	6010/6020	0.002	mg/L
Selenium	7741	0.001	mg/L
Silver	6010	0.0002	mg/L
Thallium	6010	0.002	mg/L
Tin	6010	0.200	mg/L
Vanadium	6010	0.002	mg/L
Zinc	6010	0.010	mg/L
Aldrin	8081	0.01	ug/L
alpha-BHC	8081	0.02	ug/L
beta-BHC	8081	0.02	ug/L
delta-BHC	8081	0.02	ug/L
gamma-BHC (Lindane)	8081	0.02	ug/L
Chlordane	8081	0.01	ug/L
4,4'-DDD	8081	0.02	ug/L
4,4'-DDE	8081	0.02	ug/L
4,4'-DDT	8081	0.02	ug/L
Dieldrin	8081	0.02	ug/L
alpha-Endosulfan	8081	0.02	ug/L
beta-Endosulfan	8081	0.03	ug/L
Endosulfan sulfate	8081	0.05	ug/L
Endrin	8081	0.02	ug/L
Endrin aldehyde	8081	0.02	ug/L
Heptachlor	8081	0.01	ug/L
Heptachler epoxide	8081	0.01	ug/L
Isodrin	8081	0.05	ug/L
Kepone	8081	0.10	ug/L
Methoxychlor	8081	0.05	ug/L
Toxaphene	8081	0.1	ug/L
PCB-1016	8082	0.10	ug/L
PCB-1221	8082	0.10	ug/L
PCB-1232	8082	0.10	ug/L
PCB-1242	8082	0.10	ug/L
PCB-1248	8082	0.10	ug/L
PCB-1254	8082	0.10	ug/L
PCB-1260	8082	0.10	ug/L
Disulfoton	8270	2.00	ug/L
Methyl parathion	8270	0.50	ug/L
Thionazin*	8270	10.0	ug/L
Parathion	8270	0.50	ug/L
Phorate	8140	2.00	ug/L

FIGURE 8. METHODS AND DETECTION LIMITS FOR APPENDIX IX PARAMETERS

Constituent	Method	Detection Limit	Unit
2,4-dichlorophenoxy-acetic acid	8150	0.50	ug/L
2,4,5-TP (Silvex)	8150	0.50	ug/L
2,4,5-T	8150	0.50	ug/L
Acetone	8260	0.020	mg/L
Benzene	8260	0.001	mg/L
Bromodichloromethane	8260	0.001	mg/L
Bromoform	8260	0.001	mg/L
Bromomethane	8260	0.005	mg/L
2-Butanone	8260	0.005	mg/L
Carbon disulfide	8260	0.001	mg/L
Carbon Tetrachloride	8260	0.001	mg/L
Chlorobenzene	8260	0.001	mg/L
Chloroethane	8260	0.005	mg/L
2-Chloroethylvinyl ether	8260	0.010	mg/L
Chloromethane	8260	0.005	mg/L
Dibromochloromethane	8260	0.001	mg/L
1,2-Dichlorobenzene	8260	0.001	mg/L
1,3-Dichlorobenzene	8260	0.001	mg/L
1,4-Dichlorobenzene	8260	0.001	mg/L
1,1-Dichloroethane	8260	0.001	mg/L
1,2-Dichloroethane	8260	0.001	mg/L
1,1-Dichloroethene	8260	0.001	mg/L
1,2-Dichloroethene (total)	8260	0.001	mg/L
1,2-Dichloropropane	8260	0.001	mg/L
cis-1,3-Dichloropropene	8260	0.001	mg/L
trans-1,3-Dichloropropene	8260	0.001	mg/L
Ethylbenzene	8260	0.001	mg/L
2-Hexanone	8260	0.005	mg/L
Methylene Chloride	8260	0.005	mg/L
4-Methyl-2-pentanone	8260	0.005	mg/L
Styrene	8260	0.001	mg/L
1,1,2,2-Tetrachloroethane	8260	0.001	mg/L
Toluene	8260	0.001	mg/L
1,1,1-Trichloroethane	8260	0.001	mg/L
1,1,2-Trichloroethane	8260	0.001	mg/L
Trichloroethene	8260	0.001	mg/L
Vinyl acetate	8260	0.050	mg/L
Vinyl chloride	8260	0.001	mg/L
Xylenes (total)	8260	0.003	mg/L
Acetonitrile	8260	0.050	mg/L
Acrolein	8260	0.100	mg/L
Acrylonitrile	8260	0.050	mg/L
2-Chloro-1,3-butadiene (Chloroprene)	8260	0.050	mg/L
3-Chloropropene(Allyl Chloride)	8260	0.010	mg/L
1,2-Dibromo-3-chloropropane	8260	0.005	mg/L
1,2-Dibromomethane	8260	0.001	mg/L
trans-1,4-Dichloro-2-butene	8260	0.005	mg/L
Dichlorodifluoromethane	8260	0.005	mg/L
1,4-dioxane	8260	0.001	mg/L
Ethyl methacrylate	8260	0.300	mg/L
Iodomethane	8260	0.050	mg/L
Isobutyl alcohol	8260	1.0	mg/L

FIGURE 8. METHODS AND DETECTION LIMITS FOR APPENDIX IX PARAMETERS

Constituent	Method	Detection Limit	Unit
Methacrylonitrile	8260	0.010	mg/L
Methyl methacrylate	8260	0.010	mg/L
Propionitrile	8260	0.100	mg/L
1,1,1,2-Tetrachloroethane	8260	0.001	mg/L
Trichlorofluoromethane	8260	0.001	mg/L
1,2,3-Trichloropropane	8260	0.001	mg/L
Acetopheneone	8270	0.010	mg/L
2-Acetylaminofluorene	8270	0.010	mg/L
4-Aminobiphenyl	8270	0.010	mg/L
Aniline	8270	0.040	mg/L
Aramite	8270	0.010	mg/L
Chlorobenzilate	8270	0.010	mg/L
Diallate	8270	0.010	mg/L
Dimethoate	8270	0.010	mg/L
p-(Dimethylamino)azobenzene	8270	0.010	mg/L
7,12-Dimethylbenz[a]anthracene	8270	0.010	mg/L
3,3'-Dimethylbenzidine	8270	0.040	mg/L
alpha, alpha-Dimethyphenethlamine	8270	0.100	mg/L
1,3-Dinitrobenzene	8270	0.010	mg/L
Diphenylamine*	8270	0.010	mg/L
Ethyl methanesulfonate	8270	0.010	mg/L
Farmphur	8270	0.010	mg/L
Hexachlorodibenofurans	8270	0.010	mg/L
Hexachlorodibenzo-p-dioxins	8270	0.010	mg/L
Hexachloropropene	8270	P/A	mg/L
Isosafrole	8270	0.010	mg/L
Methapyrilene	8270	0.010	mg/L
3-Methylcholanthrene	8270	0.080	mg/L
Methyl methanesulfonate	8270	0.040	mg/L
1,4-Naphthoquinone	8270	0.010	mg/L
1-Naphthylamine	8270	0.010	mg/L
2-Naphthylamine	8270	0.010	mg/L
5-Nitro-o-toluidine	8270	0.010	mg/L
4-Nitroquinoline-1-oxide	8270	0.010	mg/L
N-Nitroso-di-n-butylamine	8270	0.010	mg/L
N-Nitrosodiethylamine	8270	0.010	mg/L
N-Nitrosodimethylamine	8270	0.005	mg/L
N-Nitrosomethylethlamine	8270	0.005	mg/L
N-Nitrosomorpholine	8270	0.010	mg/L
N-Nitrosopyrrolidine	8270	0.010	mg/L
N-Nitrosopiperdine	8270	0.010	mg/L
Pentachlorobenzene	8270	0.010	mg/L
Pentachlorodibenzofurans	8270	0.010	mg/L
Pentachlorodibenzo-p-dioxins	8270	0.010	mg/L
Pentachloroethane	8270	0.010	mg/L
Pentachloronitrobenzene	8270	0.010	mg/L
Phenacetin	8270	0.010	mg/L
p-Phenylene diamine	8270	0.010	mg/L
2-Picoline	8270	0.080	mg/L
Pronamide	8270	0.080	mg/L
Pyridine	8270	0.020	mg/L
Safrole	8270	0.010	mg/L

FIGURE 8. METHODS AND DETECTION LIMITS FOR APPENDIX IX PARAMETERS

Constituent	Method	Detection Limit	Unit
Sulfotepp**	8270	0.010	mg/L
1,2,4,5-Tetrachlorobezene	8270	0.010	mg/L
Tetrachlorodibenzofurans	8270	0.010	mg/L
Tetrachloroibenzo-p-dioxins	8270	0.010	mg/L
o-Toluidine	8270	0.010	mg/L
o,o,o,-Triethylphosphorothioate	8270	0.010	mg/L
1,3,5-Trinitrobenzene	8270	0.010	mg/L
Tris (2,3-dibromopropyl) phosphate	8270	0.200	mg/L
2,6-Dichlorophenol	8270	0.010	mg/L
Dinoseb	8270	0.020	mg/L
Hexachlorophene	8270	0.080	mg/L
3-Methylphenol	8270	0.010	mg/L
2, 3,4,6-Tetrachlorophenol	8270	0.010	mg/L
Acenaphthene	8270	0.001	mg/L
Acenaphthylene	8270	0.001	mg/L
Anthracene	8270	0.001	mg/L
Benzidine	8270	0.080	mg/L
Benzo (a) anthracene	8270	0.001	mg/L
Benzo (b) fluoranthene	8270	0.001	mg/L
Benzo (k) fluoranthene	8270	0.001	mg/L
Benzo (ghi) perylene	8270	0.001	mg/L
Benzoic acid	8270	0.050	mg/L
Benzo (a) pyrene	8270	0.001	mg/L
Benzyl alcohol	8270	0.050	mg/L
Bis (2-chloroethoxy) methane	8270	0.002	mg/L
Bis (2-chloroethyl) ether	8270	0.001	mg/L
Bis (2-chloroisopropyl) ether	8270	0.001	mg/L
Bis (2-ethylhexyl) phthalate	8270	0.005	mg/L
4-Bromophenyl phenyl ether	8270	0.002	mg/L
Butyl benzyl phthalate	8270	0.005	mg/L
4-Chloroaniline	8270	0.010	mg/L
2-Chloronaphthalene	8270	0.002	mg/L
4-Chlorophenyl phenyl ether	8270	0.001	mg/L
Chrysene	8270	0.001	mg/L
Dibenz (a,h)anthracene	8270	0.002	mg/L
Dibenzofuran	8270	0.004	mg/L
Di-n-butyl phthalate	8270	0.005	mg/L
1,2-Dichlorobenzene	8270	0.010	mg/L
1,3-Dichlorobenzene	8270	0.010	mg/L
1,4-Dichlorobenzene	8270	0.010	mg/L
3,3'-Dichlorobenzidine	8270	0.020	mg/L
Diethyl phthalate	8270	0.005	mg/L
Dimethyl phthalate	8270	0.005	mg/L
2,4-Dinitrotoluene	8270	0.005	mg/L
2,6-Dintrotoluene	8270	0.005	mg/L
Di-n-octyl phthalate	8270	0.005	mg/L
Fluoranthene	8270	0.001	mg/L
Fluorene	8270	0.001	mg/L
Hexachlorobenzene	8270	0.001	mg/L
Hexachlorobutadiene	8270	0.001	mg/L
Hexachlorocyclopentadiene	8270	0.010	mg/L
Hexachloroethane	8270	0.001	mg/L

FIGURE 8. METHODS AND DETECTION LIMITS FOR APPENDIX IX PARAMETERS

Constituent	Method	Detection Limit	Unit
Indeno (1,2,3-cd) pyrene	8270	0.002	mg/L
Isophorone	8270	0.001	mg/L
2-Methylnaphthalene	8270	0.005	mg/L
Naphthalene	8270	0.001	mg/L
2-Nitroaniline	8270	0.020	mg/L
3-Nitroaniline	8270	0.020	mg/L
4-Nitroaniline	8270	0.020	mg/L
Nitrobenzene	8270	0.002	mg/L
N-Nitrosodiphenylamine*	8270	0.002	mg/L
N-Nitroso-di-n-propylamine	8270	0.002	mg/L
Phenanthrene	8270	0.001	mg/L
Pyrene	8270	0.001	mg/L
1,2,4-Trichlorobenzene	8270	0.002	mg/L
4-Chloro-3-methylphenol	8270	0.005	mg/L
2-Chlorophenol	8270	0.010	mg/L
2,4-Dichlorophenol	8270	0.010	mg/L
2,4-Dimethylphenol	8270	0.005	mg/L
4,6-Dinitro-o-cresol	8270	0.050	mg/L
2,4-Dinitrophenol	8270	0.025	mg/L
2-Methylphenol	8270	0.010	mg/L
4-Methylphenol	8270	0.010	mg/L
2-Nitrophenol	8270	0.005	mg/L
4-Nitrophenol	8270	0.025	mg/L
Pentachlorophenol	8270	0.020	mg/L
Phenol	8270	0.005	mg/L
2,4,5-Trichlorophenol	8270	0.005	mg/L
2,4,6-Trichlorophenol	8270	0.004	mg/L

Wayne Disposal Inc.
2018 TSCA Permit Renewal

Attachment 7
Sedimentation Basin Monitoring

SEDIMENTATION BASIN SAMPLING AND ANALYSIS PLAN

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

REVISION 3.8 – MARCH 2018

SEDIMENTATION BASIN SAMPLING AND ANALYSIS PLAN

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

1.0 INTRODUCTION

This Sedimentation Basin Sampling and Analysis (SB SAP) plan describes the procedures to be used for monitoring sediment samples from the north sedimentation basin (NSB), the south sedimentation basin (SSB), and, the northwest sedimentation basin (NWSB) at Wayne Disposal, Inc. (WDI), Site 2. The sedimentation basins receive on-site surface water (storm water) run-off primarily from unpaved areas and final cover systems of the closed landfill cells via a network of open ditches and subsurface pipes. The sedimentation basins do not receive run-off from active hazardous waste disposal cells or most of the paved areas at the site. All surface water collected in the sedimentation basins is treated by sedimentation, filtration and activated carbon adsorption prior to discharge to Quirk Drain. The effluent from this treatment process is discharged into Quirk Drain in accordance with a National Pollutant 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.

The monitoring program described in this SB SAP is designed to monitor the chemical quality of the sediments that have accumulated in the bottom of each basin over time. Monitoring the composition of certain parameters within the sediment is done to determine if hazardous waste or hazardous waste constituents are present. The SB SAP, in addition to describing the monitoring program, outlines the notification and response actions that WDI must take if an apparent or confirmed significant increase in a monitored parameter occurs.

2.0 REVISION

WDI may revise this SB SAP and submit the revised plan to the Chief of the Office of Waste Management and Radiological Protection on of the Michigan Department of Environmental Quality (OWMRP/MDEQ) for review and approval prior to implementation.

3.0 SAMPLE LOCATIONS

Each sedimentation basin is divided into six sections as shown in Figures 1, 2 and 3 for the SSB, NSB and NWSB, respectively. One grab sample is collected at random locations within each section of each basin during each sampling event. The locations for each sampling point are to be measured using a GPS or equivalent method and the coordinates listed on the sample log (Figure 4) included in this plan.

4.0 SAMPLE FREQUENCY

All sedimentation basins are to be sampled on an annual basis. The sampling event will include the SSB, NSB and the NWSB and should be scheduled in the spring at approximately the same time each year so that summer months can be available to remove impacted sediments if necessary.

5.0 SAMPLE COLLECTION

For each basin, a grab sample is to be collected from each section of each basin shown in Figures 1, 2, and 3. In addition, a representative composite sample from each basin is to be created by combining equal portions from each grab sample from the basin. Sufficient volume of sediment must be collected at each grab sample location such that there is adequate volume to 1) perform the required grab sample analysis, 2) contribute a portion to the composite sample and 3) have enough left over sample to used by the laboratory for a confirmation of an apparent statistically significant increase of PCBs, if necessary. Confirmation procedures are specified in Section 8.0 of this document.

The individual grab samples from each section of each basin are to be collected from a small rowboat utilizing a Ponar grab-type sampler or an auger sampler with an extension. The person conducting the sampling will position the boat at one of the sampling locations, lower the sampling device and retrieve a sample. The sample will then be removed from the sampler and placed directly into the appropriate container using a clean Teflon hand trowel. The composite sample from each respective basin is to be collected by placing equal volumes of collected sediment from each individual grab sample location within the respective basin into a stainless steel bowl or disposable foil pan. After equal portions from all grab sample locations from the respective basin have been collected and placed into the bowl/pan, the sediment in the bowl is to be gently mixed to homogenize the sample, and then placed into an appropriate container.

Clean protective gloves must be worn during sample collection and clean gloves must be used at each sample location. Care should be taken at all times when handling the samples to avoid sample cross-contamination. Each sample container must be labeled with the sampling location, the time and date of the sampling event, and the sampler's initials. The sample collection log (Figure4) is to be filled out at each sampling location and any unusual conditions (e.g. odors, sheens) encountered are to be noted. In addition, a chain-of-custody (COC) form is to be filled out for each sampling event. The COC is to be filled out fully for each sample submitted for analysis and each person handling the samples must sign and date the form. When the samples are delivered to the laboratory and the laboratory has signed for their receipt, a copy of this form is to be retained on site. After collection, the samples are to be stored in a clean cooler containing ice or ice packs. The coolers containing samples are to be stored in a secure location, until being transported to the laboratory.

All non-dedicated sampling equipment is to be thoroughly cleaned and decontaminated between sample locations by scrubbing with a brush and rinsing with de-ionized water to remove all visible soil/sediment material.

Field Quality Assurance/Quality Control samples collected for each sampling event, including confirmation sampling events, include:

- One trip blank for each cooler utilized for storing and shipping samples for analysis of PCBs. The trip blank is to be analyzed for PCBs.

- One blind duplicate for each sampling event. The duplicate sample is to be analyzed for the identical set of parameters as the samples. The duplicate is to be collected by filling an identical set of sample containers at a given location and submitting them for an identical analysis.
- One equipment blank per sampling day for each piece of non-dedicated sampling equipment utilized in the sampling process (i.e. sample collection tool/ponar and/or composite sample collection bowl/foil pan). The equipment blank is to be collected by pouring clean de-ionized water over the decontaminated piece of equipment and collecting the rinsate in the appropriate container for analysis. The equipment blank is to be analyzed for the identical set of parameters as the samples.

6.0 SAMPLE ANALYSIS

Each grab sample from the SSB, NSB and NWSB is to be analyzed for the parameters listed in Table 1 identified as grab sample parameters. The analytical methods and method detection limits specified are also listed on Table 1. Each composite sample from each basin is to be analyzed for all of the PCB aroclors listed on Table 1 using the analytical methods and method detection limits specified. In addition, all grab samples must also be extracted for PCB analyses but only analyzed if necessary as confirmation samples per Section 8.0. In some cases, the laboratory may not attain the method detection limits specified due to sample dilutions and matrix effects. If this is the case, the laboratory report must include an explanation for not achieving the specified method detection limits.

The laboratory quality control/quality assurance manual (QA/QC Manual) describing the required internal policies, guidelines and procedures of any contract lab is used by WDI in evaluating the QA/QC standard operating procedures of any contract laboratory utilized for the purposes of this SW SAP. WDI ensures that the laboratory employs acceptable QA/QC practices.

7.0 DATA EVALUATION

The analytical data from the sedimentation basin samples is to be evaluated as follows:

- For a SSB or NWSB PCB composite sample, an apparent statistically significant increase (ASSI) has occurred if the total concentration of the PCB compounds listed in Table 1 is greater than or equal to 1 mg/kg on a dry-weight basis.
- For a NSB PCB composite sample, an ASSI has occurred if the total concentration of the PCB compounds listed in Table 1 is greater than or equal to the method detection limit.
- For metals, phenols (all sedimentation basins), and total and amenable cyanide (south and northwest sedimentation basins only), the data will be evaluated using graphical trend analysis. An ASSI for any parameter has occurred if increasing concentrations are noted for any individual parameter in four consecutive sampling events and/or a ten-fold increase in concentration is noted in any parameter between sampling events in any of the individual grab samples. If four consecutive samples show increasing concentrations, WDI must determine the difference between the first and fourth sample concentrations and determine if this quantity is greater than 10 percent of the mean of the concentration of those four measurements for that parameter. If the difference is greater than 10 percent

of the mean then an ASSI is reported. If the difference is less than 10 percent of the mean then no ASSI will be reported.

8.0 RESPONSE ACTIONS

In the event of an ASSI, WDI is to verbally notify OWMRP/MDEQ, Hazardous Waste Program Section staff immediately, give them an opportunity to split confirmation samples, and implement the procedures identified below to confirm the ASSI. Confirmation samples must be collected and submitted for analysis within 7 days of providing notification of an ASSI.

- For the composite PCB samples, procedures to determine if a CSSI has occurred are as follows. The additional grab samples collected in each section of the basin that were sent to the lab and extracted are to be analyzed for PCBs. If any of the grab samples for which PCBs are detected are above the action levels defined in Section 7.0 (i.e. the ASSI is repeated), then a CSSI will have been confirmed for that section of the basin that the grab sample represented.
- For the metals, total and amenable cyanide, and phenols grab samples, procedures to determine if a confirmed statistically significant increase (CSSI) has occurred are as follows. Any section of the basins for which an ASSI is reported for metals, total and amenable cyanide, and/or phenols is to be resampled by collecting four additional samples within the section of the basin with the ASSI. If the concentrations in two of the four confirmation samples are equal to or greater than the original sample, then the increase is a confirmed statistically significant increase (CSSI).

In the event an ASSI is not repeated, WDI will resume routine monitoring. In the event an ASSI is repeated upon analyzing the second sample, a confirmed statistically significant increase (CSSI) has occurred. In the event a CSSI has occurred, WDI must notify OWMRP/MDEQ in accordance with the General Operating Conditions of the Operating License for reporting noncompliance that may endanger human health or the environment. Further, within 30 days of becoming aware of a CSSI, WDI must implement the following actions depending upon the CSSI parameter and the CSSI location:

- For a metals CSSI in either basin and/or a phenolics, total cyanide, or amenable cyanide CSSI in the SSB or NWSB, submit a work plan for OWMRP review and approval to delineate the extent of contamination in the basin, identify and eliminate the source of the contamination, and determine if concentrations are sufficiently elevated to require removal of sediments from the impacted basin. Guidance regarding determining whether or not removal of contaminated sediments is required is provided in Attachment 3 of the Remediation and Redevelopment Division's (RRD) Operational Memorandum No 4.
- For a PCB CSSI in the SSB or NWSB, submit a work plan to delineate and/or remove sediments from the impacted basin for the OWMRP/MDEQ review and approval.
- For a PCB CSSI in the NSB, immediately implement a source assessment program by collecting quarterly grab samples for PCB analysis from each respective section of the basin for a minimum of one year and perform a trend analysis using the data.
    - If PCBs are detected above a concentration of 1 mg/kg in any individual sediment grab sample during any quarterly sampling event, submit a work plan within 30

days of the detection to delineate and/or remove sediments in the impacted basin for OWMRP review and approval. In addition, WDI will submit to the OWMRP/MDEQ for review and approval a work plan that provides for additional storm water sampling and analysis to identify the source of the PCBs in the NSB sediments and, depending upon the results from the additional storm water monitoring, recommend actions to eliminate the source and/or conduct additional source investigation.

- If the PCB results from the required quarterly sampling are less than 1 mg/kg, continue to collect quarterly sediment grab samples for PCB analysis from each respective section of the basin until the one year period and the trend analysis of the data is complete. If PCBs are detected subsequent to the CSSI in any two grab samples from the basin, WDI will submit to the OWMRP/MDEQ for review and approval within 30 days of the second detection a work plan that provides for additional storm water sampling and analysis to identify the source of the PCBs in the NSB sediments and, depending upon the results from the additional storm water monitoring, recommend actions to eliminate the source and/or conduct additional source investigation and removal.

WDI may voluntarily remove sediments from any sedimentation basin without OWMRP/MDEQ approval if WDI verbally notifies OWMRP/MDEQ, Hazardous Waste Program Section staff of the removal at least five days in advance of the removal and performs the removal in compliance with all applicable laws. In the event WDI chooses to voluntarily remove sediments from either basin in response to an ASSI or CSSI, all source investigation and removal requirements defined above shall still be implemented.

9.0 REPORTING REQUIREMENTS

A final SB SAP Report (Report) documenting the annual sampling under this plan, including the data received from the laboratory, is to be submitted to the OWMRP/MDEQ within 60 days of each sampling event. All Reports must include a narrative description of the sampling event, a map of each respective basin showing each location sampled, copies of the sampling logs, a tabular summary and discussion of the data, the trend analysis calculations and discussion of the trend analysis results, a description of any ASSI and/or CSSI, as applicable, and any resampling conducted, and/or any additional actions required and/or recommended as a result of the Report findings. In addition to this report, an annual summary report of sedimentation basin monitoring results must be submitted to OWMRP/MDEQ by March 1 of the following year

10.0 RECORD KEEPING REQUIREMENTS

All analytical data and Reports generated under this SB SAP must be stored on site within the filing system and be available to MDEQ staff for inspection.

Table 1. Sedimentation Basin monitoring Parameters

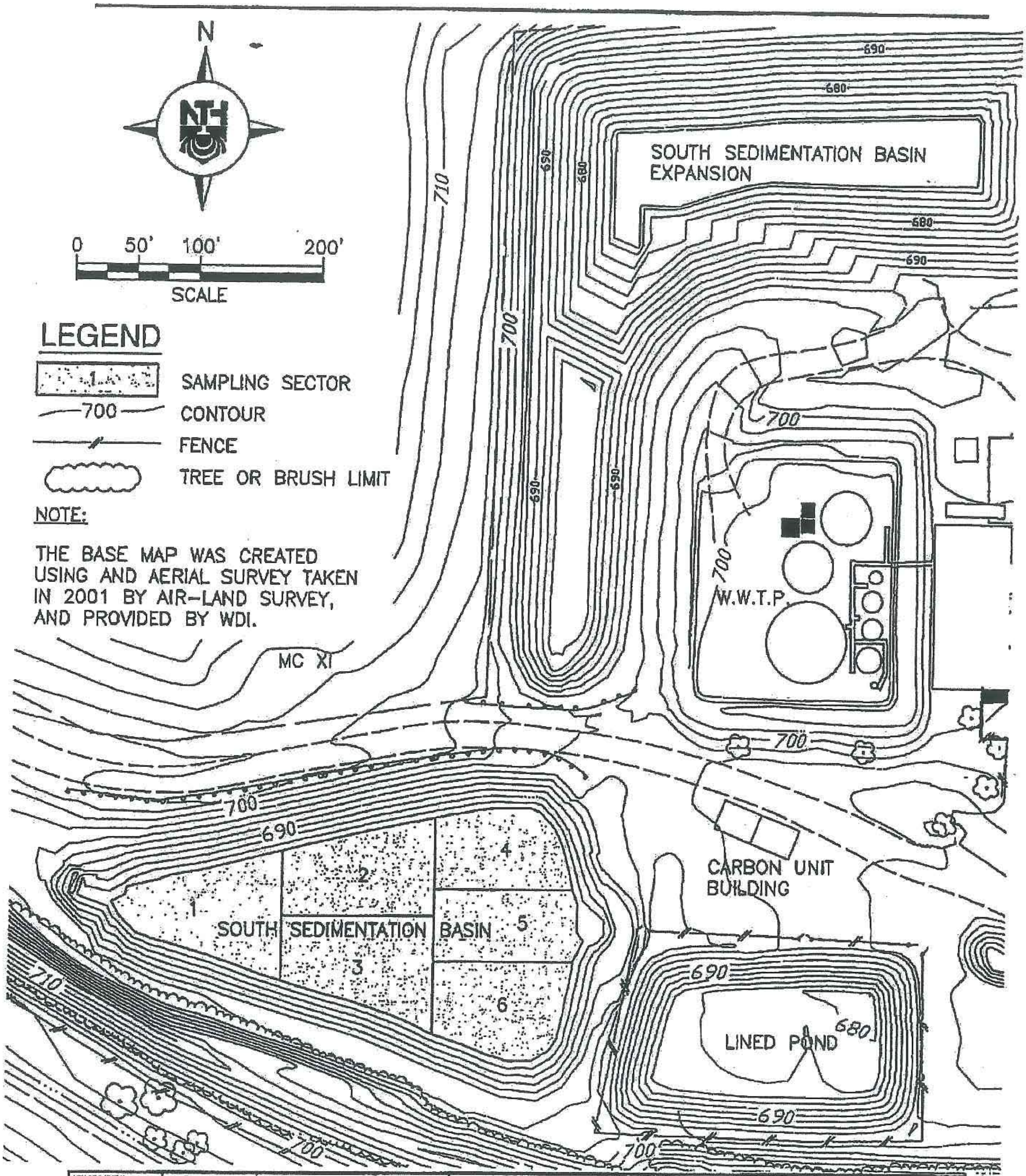
Grab Sample Parameters	RL[1] (mg/Kg)[2]	Approved Method[3]
Arsenic	0.5	6020A
Barium	1	6020A
Cadmium	0.2	6020A
Chromium (total)	2	6020A
Cobalt	0.5	6010C
Copper	1	6020A
Iron	5	6010C
Lead	1	6010/6020
Mercury	0.05	7471B
Molybdenum	1	6010C
Nickel	1	6010C
Selenium	0.2	6020A
Silver	0.1	6020A
Vanadium	1	6020A
Zinc	1	6020A
Total Phenolics[4]	0.4	9065
Total Cyanide[4]	0.1	9014
Amenable Cyanide[4]	NA	9014
Composite Sample Parameters		
PCB-1016	0.1	8082A
PCB-1221	0.1	8082A
PCB-1232	0.1	8082A
PCB-1242	0.1	8082A
PCB-1248	0.1	8082A
PCB-1254	0.1	8082A
PCB-1260	0.1	8082A

1 - Target Reporting Limits from OWMRP-111/115-8

2 - Dry Weight Basis

3 - Test Methods For Evaluating Solid Waste, USEPA SW-846

4 - South and Northwest Sedimentation Basins Only

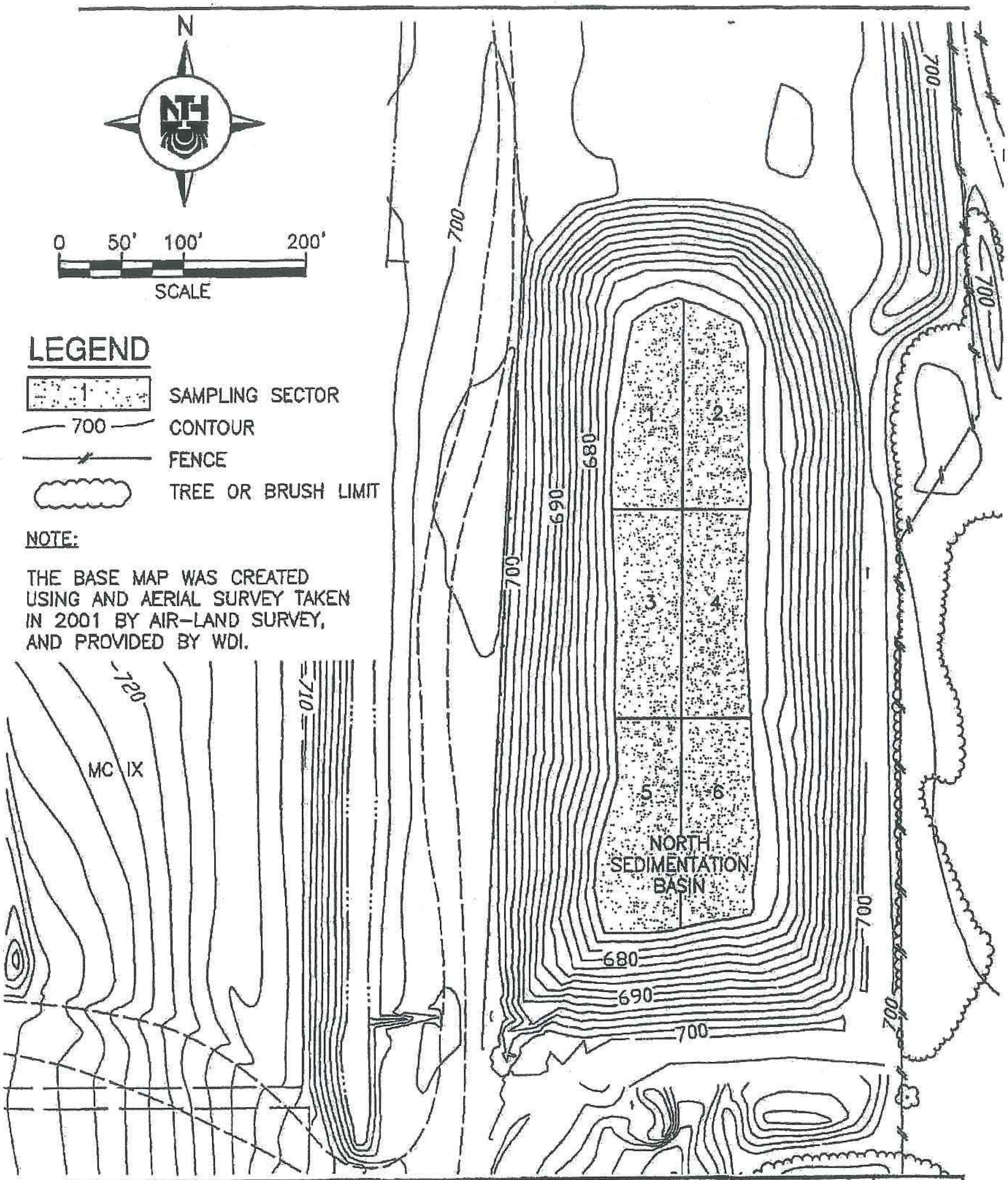


NOTE:

THE BASE MAP WAS CREATED USING AND AERIAL SURVEY TAKEN IN 2001 BY AIR-LAND SURVEY, AND PROVIDED BY WDI.

NTH PROJECT No.: 13-060921-07	CAD FILE NAME:	NTH Consultants, Ltd. Infrastructure Engineering and Environmental Services	SOUTH SEDIMENTATION BASIN MONITORING SAMPLE SECTORS	FIGURE 1
DESIGNED BY: KRO	PLOT DATE: 10/31/08			
DRAWN BY: KRO	DRAWING SCALE: AS SHOWN		WAYNE DISPOSAL SITE NO. 2 BELLEVILLE, MICHIGAN	
CHECKED BY: RBM	INCEPTION DATE: 10/30/08			

J:\Cad\13\Site 2 - SWMP\SAMPLING LOCATIONS\FIGURE 1-2 SED.dwg

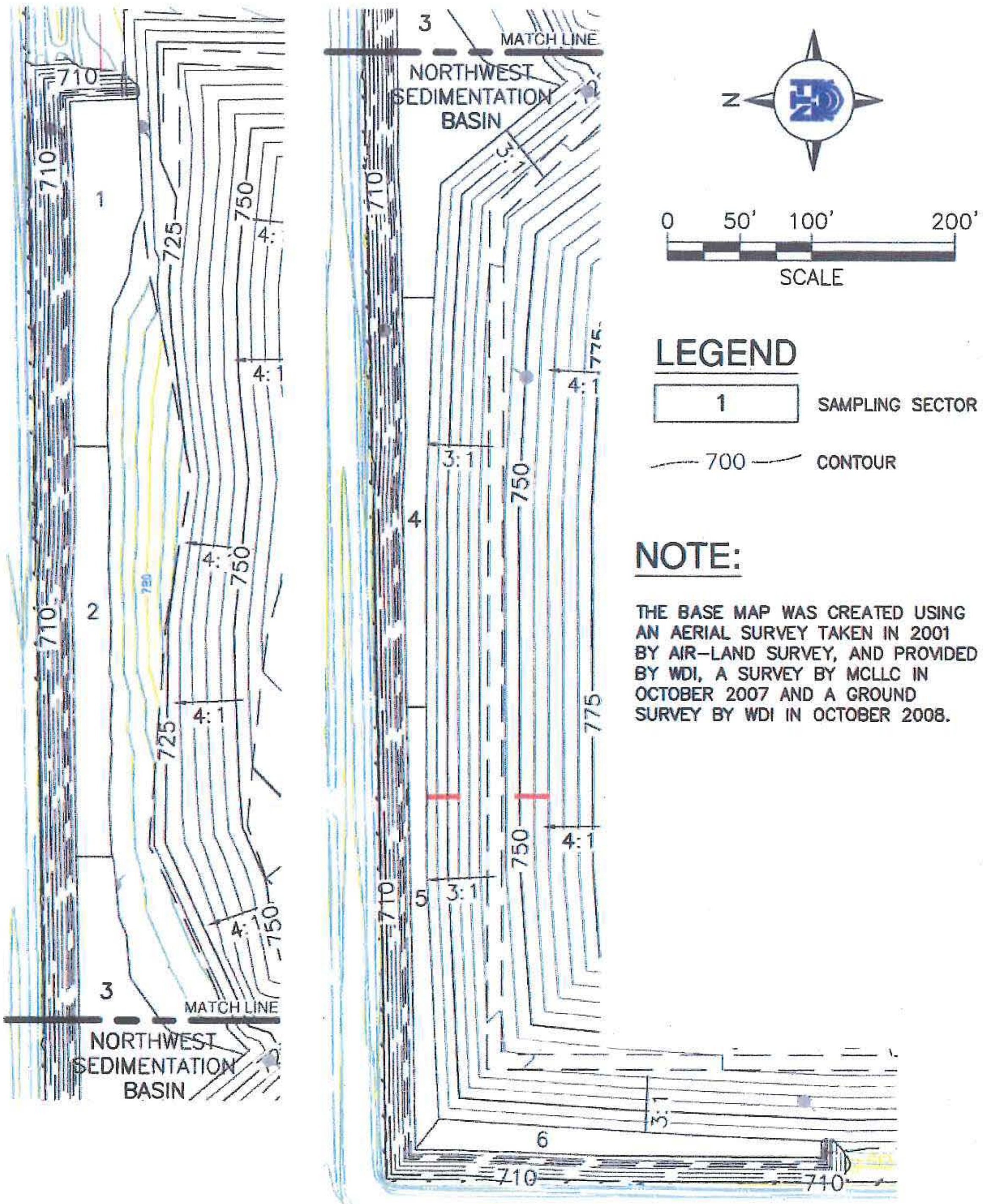


NOTE:

THE BASE MAP WAS CREATED USING AND AERIAL SURVEY TAKEN IN 2001 BY AIR-LAND SURVEY, AND PROVIDED BY WDI.

NTH PROJECT No: 13-060821-07	CAD FILE NAME:	NTH Consultants, Ltd. Infrastructure Engineering and Environmental Services	NORTH SEDIMENTATION BASIN MONITORING SAMPLE SECTORS	FIGURE
DESIGNED BY: KRO	PLOT DATE: 10/31/08			2
DRAWN BY: KRO	DRAWING SCALE: AS SHOWN		WAYNE DISPOSAL SITE NO. 2 BELLEVILLE, MICHIGAN	
CHECKED BY: RBM	INCEPTION DATE: 10/30/08			

J:\Cad\13\Site 2 - SWMP\SAMPLING LOCATIONS\FIGURE 1-2 SED.dwg



LEGEND

1	SAMPLING SECTOR
700	CONTOUR

NOTE:

THE BASE MAP WAS CREATED USING AN AERIAL SURVEY TAKEN IN 2001 BY AIR-LAND SURVEY, AND PROVIDED BY WDI, A SURVEY BY MCLLC IN OCTOBER 2007 AND A GROUND SURVEY BY WDI IN OCTOBER 2008.

NTH PROJECT No: 62080376	CAD FILE NAME: 62080376-SED3	NTH Consultants, Ltd. Infrastructure Engineering and Environmental Services	NORTHWEST SEDIMENTATION BASIN MONITORING SAMPLE SECTORS	FIGURE:
DESIGNED BY: DC	PLOT DATE: 5/9/2011			3
DRAWN BY: RMJI	DRAWING SCALE: AS SHOWN		WAYNE DISPOSAL, INC. SITE NO. 2 - MC VI F&G VAN BUREN TWP., WAYNE COUNTY, MICHIGAN	
CHECKED BY: DC	INCEPTION DATE: 02/16/09			

J:\62\62080376\Reports\Env\HIR\62080376-SED3.dwg

Sample Collection Log for Sediments - WDI Site #2

Sample ID: (Basin, Sector #)	**Sample Date:**	**Sample Time:**
Sample Location: (x,y coordinates)	**Sampling Method:**	**Sampler:**
Sample Description/Comments*:		

Sample ID: (Basin, Sector #)	**Sample Date:**	**Sample Time:**
Sample Location: (x,y coordinates)	**Sampling Method:**	**Sampler:**
Sample Description/Comments*:		

Sample ID: (Basin, Sector #)	**Sample Date:**	**Sample Time:**
Sample Location: (x,y coordinates)	**Sampling Method:**	**Sampler:**
Sample Description/Comments*:		

Sample ID: (Basin, Sector #)	**Sample Date:**	**Sample Time:**
Sample Location: (x,y coordinates)	**Sampling Method:**	**Sampler:**
Sample Description/Comments*:		

* Include any unusual characteristics such as color, sheen, odor, etc.

Figure 4.

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Attachment 8
Soil Monitoring

SEDIMENTATION BASIN SAMPLING AND ANALYSIS PLAN

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

REVISION 3.8 – MARCH 2018

1.0 INTRODUCTION

This Sedimentation Basin Sampling and Analysis (SB SAP) plan describes the procedures to be used for monitoring sediment samples from the north sedimentation basin (NSB), the south sedimentation basin (SSB), and, the northwest sedimentation basin (NWSB) at Wayne Disposal, Inc. (WDI), Site 2. The sedimentation basins receive on-site surface water (storm water) run-off primarily from unpaved areas and final cover systems of the closed landfill cells via a network of open ditches and subsurface pipes. The sedimentation basins do not receive run-off from active hazardous waste disposal cells or most of the paved areas at the site. All surface water collected in the sedimentation basins is treated by sedimentation, filtration and activated carbon adsorption prior to discharge to Quirk Drain. The effluent from this treatment process is discharged into Quirk Drain in accordance with a National Pollutant 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.

The monitoring program described in this SB SAP is designed to monitor the chemical quality of the sediments that have accumulated in the bottom of each basin over time. Monitoring the composition of certain parameters within the sediment is done to determine if hazardous waste or hazardous waste constituents are present. The SB SAP, in addition to describing the monitoring program, outlines the notification and response actions that WDI must take if an apparent or confirmed significant increase in a monitored parameter occurs.

2.0 REVISION

WDI may revise this SB SAP and submit the revised plan to the Chief of the Office of Waste Management and Radiological Protection on of the Michigan Department of Environmental Quality (OWMRP/MDEQ) for review and approval prior to implementation.

3.0 SAMPLE LOCATIONS

Each sedimentation basin is divided into six sections as shown in Figures 1, 2 and 3 for the SSB, NSB and NWSB, respectively. One grab sample is collected at random locations within each section of each basin during each sampling event. The locations for each sampling point are to be measured using a GPS or equivalent method and the coordinates listed on the sample log (Figure 4) included in this plan.

4.0 SAMPLE FREQUENCY

All sedimentation basins are to be sampled on an annual basis. The sampling event will include the SSB, NSB and the NWSB and should be scheduled in the spring at approximately the same time each year so that summer months can be available to remove impacted sediments if necessary.

5.0 SAMPLE COLLECTION

For each basin, a grab sample is to be collected from each section of each basin shown in Figures 1, 2, and 3. In addition, a representative composite sample from each basin is to be created by combining equal portions from each grab sample from the basin. Sufficient volume of sediment must be collected at each grab sample location such that there is adequate volume to 1) perform the required grab sample analysis, 2) contribute a portion to the composite sample and 3) have enough left over sample to used by the laboratory for a confirmation of an apparent statistically significant increase of PCBs, if necessary. Confirmation procedures are specified in Section 8.0 of this document.

The individual grab samples from each section of each basin are to be collected from a small rowboat utilizing a Ponar grab-type sampler or an auger sampler with an extension. The person conducting the sampling will position the boat at one of the sampling locations, lower the sampling device and retrieve a sample. The sample will then be removed from the sampler and placed directly into the appropriate container using a clean Teflon hand trowel. The composite sample from each respective basin is to be collected by placing equal volumes of collected sediment from each individual grab sample location within the respective basin into a stainless steel bowl or disposable foil pan. After equal portions from all grab sample locations from the respective basin have been collected and placed into the bowl/pan, the sediment in the bowl is to be gently mixed to homogenize the sample, and then placed into an appropriate container.

Clean protective gloves must be worn during sample collection and clean gloves must be used at each sample location. Care should be taken at all times when handling the samples to avoid sample cross-contamination. Each sample container must be labeled with the sampling location, the time and date of the sampling event, and the sampler's initials. The sample collection log (Figure4) is to be filled out at each sampling location and any unusual conditions (e.g. odors, sheens) encountered are to be noted. In addition, a chain-of-custody (COC) form is to be filled out for each sampling event. The COC is to be filled out fully for each sample submitted for analysis and each person handling the samples must sign and date the form. When the samples are delivered to the laboratory and the laboratory has signed for their receipt, a copy of this form is to be retained on site. After collection, the samples are to be stored in a clean cooler containing ice or ice packs. The coolers containing samples are to be stored in a secure location, until being transported to the laboratory.

All non-dedicated sampling equipment is to be thoroughly cleaned and decontaminated between sample locations by scrubbing with a brush and rinsing with de-ionized water to remove all visible soil/sediment material.

Field Quality Assurance/Quality Control samples collected for each sampling event, including confirmation sampling events, include:

- One trip blank for each cooler utilized for storing and shipping samples for analysis of PCBs. The trip blank is to be analyzed for PCBs.
- One blind duplicate for each sampling event. The duplicate sample is to be analyzed for the identical set of parameters as the samples. The duplicate is to be collected by filling

an identical set of sample containers at a given location and submitting them for an identical analysis.

- One equipment blank per sampling day for each piece of non-dedicated sampling equipment utilized in the sampling process (i.e. sample collection tool/ponar and/or composite sample collection bowl/foil pan). The equipment blank is to be collected by pouring clean de-ionized water over the decontaminated piece of equipment and collecting the rinsate in the appropriate container for analysis. The equipment blank is to be analyzed for the identical set of parameters as the samples.

6.0 SAMPLE ANALYSIS

Each grab sample from the SSB, NSB and NWSB is to be analyzed for the parameters listed in Table 1 identified as grab sample parameters. The analytical methods and method detection limits specified are also listed on Table 1. Each composite sample from each basin is to be analyzed for all of the PCB aroclors listed on Table 1 using the analytical methods and method detection limits specified. In addition, all grab samples must also be extracted for PCB analyses but only analyzed if necessary as confirmation samples per Section 8.0. In some cases, the laboratory may not attain the method detection limits specified due to sample dilutions and matrix effects. If this is the case, the laboratory report must include an explanation for not achieving the specified method detection limits.

The laboratory quality control/quality assurance manual (QA/QC Manual) describing the required internal policies, guidelines and procedures of any contract lab is used by WDI in evaluating the QA/QC standard operating procedures of any contract laboratory utilized for the purposes of this SW SAP. WDI ensures that the laboratory employs acceptable QA/QC practices.

7.0 DATA EVALUATION

The analytical data from the sedimentation basin samples is to be evaluated as follows:

- For a SSB or NWSB PCB composite sample, an apparent statistically significant increase (ASSI) has occurred if the total concentration of the PCB compounds listed in Table 1 is greater than or equal to 1 mg/kg on a dry-weight basis.
- For a NSB PCB composite sample, an ASSI has occurred if the total concentration of the PCB compounds listed in Table 1 is greater than or equal to the method detection limit.
- For metals, phenols (all sedimentation basins), and total and amenable cyanide (south and northwest sedimentation basins only), the data will be evaluated using graphical trend analysis. An ASSI for any parameter has occurred if increasing concentrations are noted for any individual parameter in four consecutive sampling events and/or a ten-fold increase in concentration is noted in any parameter between sampling events in any of the individual grab samples. If four consecutive samples show increasing concentrations, WDI must determine the difference between the first and fourth sample concentrations and determine if this quantity is greater than 10 percent of the mean of the concentration of those four measurements for that parameter. If the difference is greater than 10 percent of the mean then an ASSI is reported. If the difference is less than 10 percent of the mean then no ASSI will be reported.

8.0 RESPONSE ACTIONS

In the event of an ASSI, WDI is to verbally notify OWMRP/MDEQ, Hazardous Waste Program Section staff immediately, give them an opportunity to split confirmation samples, and implement the procedures identified below to confirm the ASSI. Confirmation samples must be collected and submitted for analysis within 7 days of providing notification of an ASSI.

- For the composite PCB samples, procedures to determine if a CSSI has occurred are as follows. The additional grab samples collected in each section of the basin that were sent to the lab and extracted are to be analyzed for PCBs. If any of the grab samples for which PCBs are detected are above the action levels defined in Section 7.0 (i.e. the ASSI is repeated), then a CSSI will have been confirmed for that section of the basin that the grab sample represented.
- For the metals, total and amenable cyanide, and phenols grab samples, procedures to determine if a confirmed statistically significant increase (CSSI) has occurred are as follows. Any section of the basins for which an ASSI is reported for metals, total and amenable cyanide, and/or phenols is to be resampled by collecting four additional samples within the section of the basin with the ASSI. If the concentrations in two of the four confirmation samples are equal to or greater than the original sample, then the increase is a confirmed statistically significant increase (CSSI).

In the event an ASSI is not repeated, WDI will resume routine monitoring. In the event an ASSI is repeated upon analyzing the second sample, a confirmed statistically significant increase (CSSI) has occurred. In the event a CSSI has occurred, WDI must notify OWMRP/MDEQ in accordance with the General Operating Conditions of the Operating License for reporting noncompliance that may endanger human health or the environment. Further, within 30 days of becoming aware of a CSSI, WDI must implement the following actions depending upon the CSSI parameter and the CSSI location:

- For a metals CSSI in either basin and/or a phenolics, total cyanide, or amenable cyanide CSSI in the SSB or NWSB, submit a work plan for OWMRP review and approval to delineate the extent of contamination in the basin, identify and eliminate the source of the contamination, and determine if concentrations are sufficiently elevated to require removal of sediments from the impacted basin. Guidance regarding determining whether or not removal of contaminated sediments is required is provided in Attachment 3 of the Remediation and Redevelopment Division's (RRD) Operational Memorandum No 4.
- For a PCB CSSI in the SSB or NWSB, submit a work plan to delineate and/or remove sediments from the impacted basin for the OWMRP/MDEQ review and approval.
- For a PCB CSSI in the NSB, immediately implement a source assessment program by collecting quarterly grab samples for PCB analysis from each respective section of the basin for a minimum of one year and perform a trend analysis using the data.
  - If PCBs are detected above a concentration of 1 mg/kg in any individual sediment grab sample during any quarterly sampling event, submit a work plan within 30 days of the detection to delineate and/or remove sediments in the impacted basin

for OWMRP review and approval. In addition, WDI will submit to the OWMRP/MDEQ for review and approval a work plan that provides for additional storm water sampling and analysis to identify the source of the PCBs in the NSB sediments and, depending upon the results from the additional storm water monitoring, recommend actions to eliminate the source and/or conduct additional source investigation.

- If the PCB results from the required quarterly sampling are less than 1 mg/kg, continue to collect quarterly sediment grab samples for PCB analysis from each respective section of the basin until the one year period and the trend analysis of the data is complete. If PCBs are detected subsequent to the CSSI in any two grab samples from the basin, WDI will submit to the OWMRP/MDEQ for review and approval within 30 days of the second detection a work plan that provides for additional storm water sampling and analysis to identify the source of the PCBs in the NSB sediments and, depending upon the results from the additional storm water monitoring, recommend actions to eliminate the source and/or conduct additional source investigation and removal.

WDI may voluntarily remove sediments from any sedimentation basin without OWMRP/MDEQ approval if WDI verbally notifies OWMRP/MDEQ, Hazardous Waste Program Section staff of the removal at least five days in advance of the removal and performs the removal in compliance with all applicable laws. In the event WDI chooses to voluntarily remove sediments from either basin in response to an ASSI or CSSI, all source investigation and removal requirements defined above shall still be implemented.

9.0 REPORTING REQUIREMENTS

A final SB SAP Report (Report) documenting the annual sampling under this plan, including the data received from the laboratory, is to be submitted to the OWMRP/MDEQ within 60 days of each sampling event. All Reports must include a narrative description of the sampling event, a map of each respective basin showing each location sampled, copies of the sampling logs, a tabular summary and discussion of the data, the trend analysis calculations and discussion of the trend analysis results, a description of any ASSI and/or CSSI, as applicable, and any resampling conducted, and/or any additional actions required and/or recommended as a result of the Report findings. In addition to this report, an annual summary report of sedimentation basin monitoring results must be submitted to OWMRP/MDEQ by March 1 of the following year

10.0 RECORD KEEPING REQUIREMENTS

All analytical data and Reports generated under this SB SAP must be stored on site within the filing system and be available to MDEQ staff for inspection.

Table 1. Sedimentation Basin monitoring Parameters

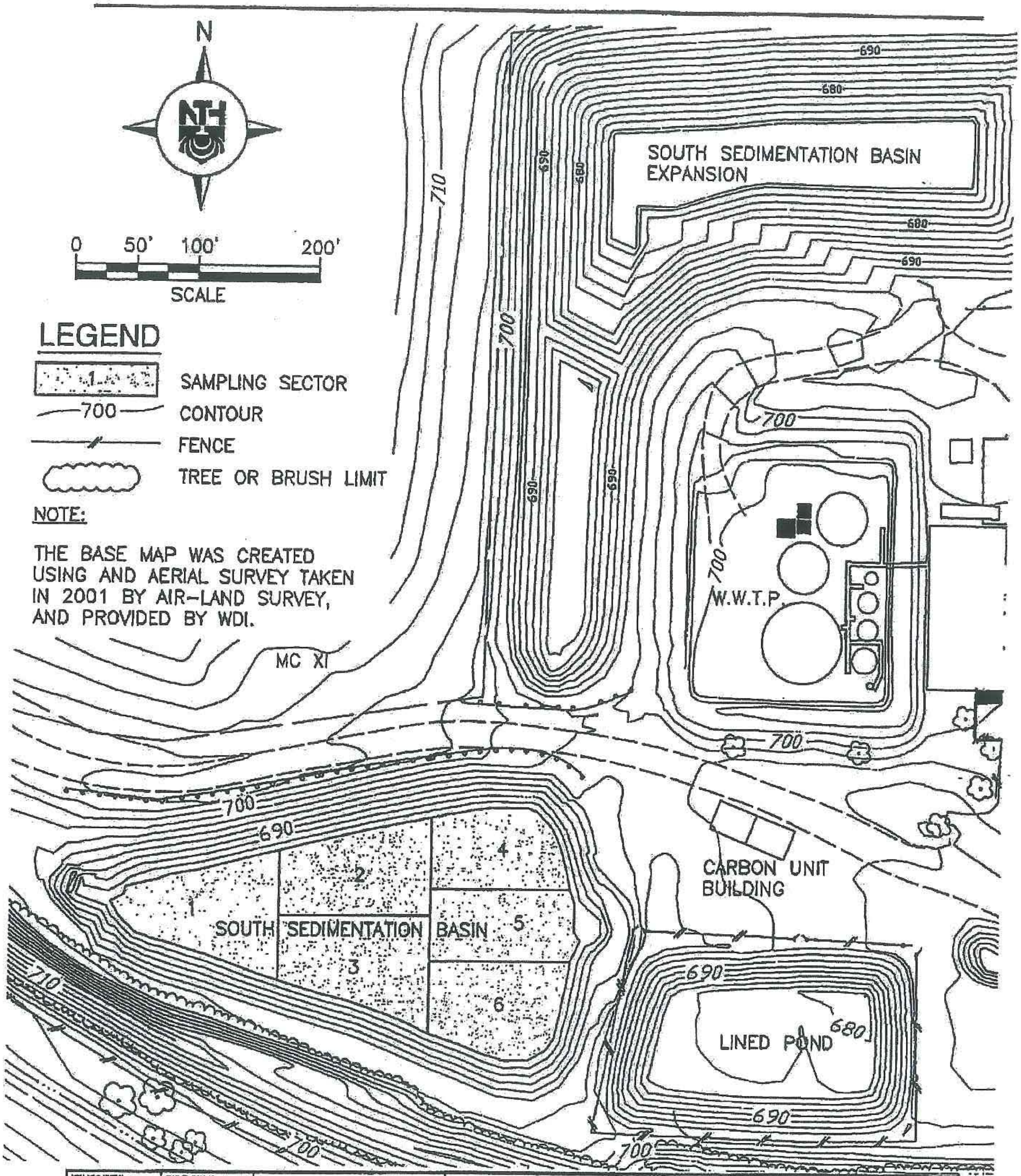
Grab Sample Parameters	RL[1] (mg/Kg)[2]	Approved Method[3]
Arsenic	0.5	6020A
Barium	1	6020A
Cadmium	0.2	6020A
Chromium (total)	2	6020A
Cobalt	0.5	6010C
Copper	1	6020A
Iron	5	6010C
Lead	1	6010/6020
Mercury	0.05	7471B
Molybdenum	1	6010C
Nickel	1	6010C
Selenium	0.2	6020A
Silver	0.1	6020A
Vanadium	1	6020A
Zinc	1	6020A
Total Phenolics[4]	0.4	9065
Total Cyanide[4]	0.1	9014
Amenable Cyanide[4]	NA	9014
Composite Sample Parameters		
PCB-1016	0.1	8082A
PCB-1221	0.1	8082A
PCB-1232	0.1	8082A
PCB-1242	0.1	8082A
PCB-1248	0.1	8082A
PCB-1254	0.1	8082A
PCB-1260	0.1	8082A

1 - Target Reporting Limits from OWMRP-111/115-8

2 - Dry Weight Basis

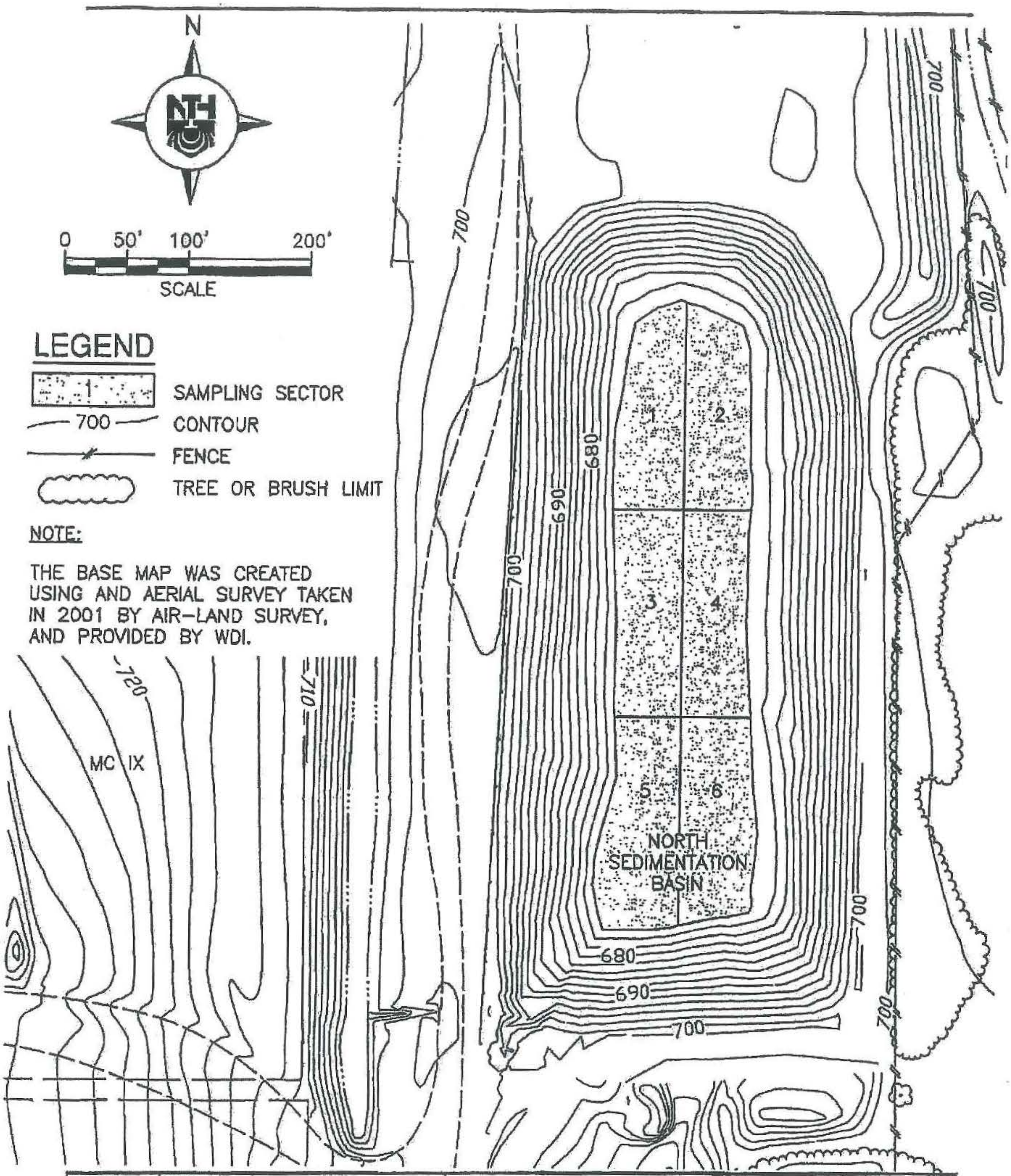
3 - Test Methods For Evaluating Solid Waste, USEPA SW-846

4 - South and Northwest Sedimentation Basins Only



NTH PROJECT No.: 13-060921-07	CAD FILE NAME:	NTH Consultants, Ltd. Infrastructure Engineering and Environmental Services	SOUTH SEDIMENTATION BASIN MONITORING SAMPLE SECTORS	FIGURE 1
DESIGNED BY: KRO	PLOT DATE: 10/31/08		WAYNE DISPOSAL SITE NO. 2 BELLEVILLE, MICHIGAN	
DRAWN BY: KRO	DRAWING SCALE: AS SHOWN			
CHECKED BY: RBM	INCEPTION DATE: 10/30/08			

J:\Cad\13\Site 2 - SWMP\SAMPLING LOCATIONS\FIGURE 1-2 SED.dwg

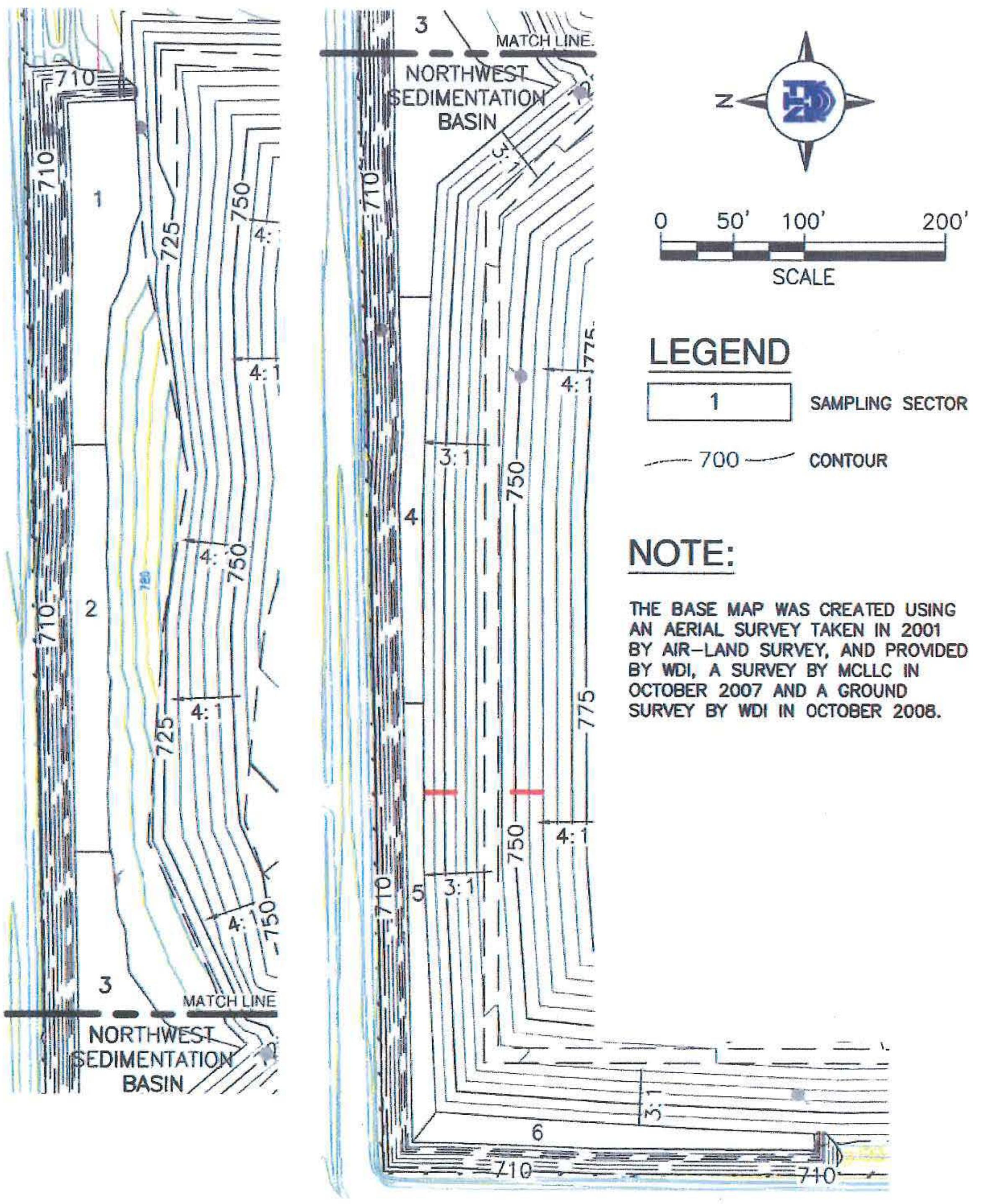


NOTE:

THE BASE MAP WAS CREATED USING AND AERIAL SURVEY TAKEN IN 2001 BY AIR-LAND SURVEY, AND PROVIDED BY WDI.

NTH PROJECT No: 13-060821-07	CAD FILE NAME:	NTH Consultants, Ltd. Infrastructure Engineering and Environmental Services	NORTH SEDIMENTATION BASIN MONITORING SAMPLE SECTORS	FIGURE 2
DESIGNED BY: KRO	PLOT DATE: 10/31/08			
DRAWN BY: KRO	DRAWING SCALE: AS SHOWN		WAYNE DISPOSAL SITE NO. 2 BELLEVILLE, MICHIGAN	
CHECKED BY: RBM	INCEPTION DATE: 10/30/08			

J:\Cad\13\Site 2 - SWMP\SAMPLING LOCATIONS\FIGURE 1-2 SED.dwg



LEGEND

1	SAMPLING SECTOR
—— 700 ——	CONTOUR

NOTE:

THE BASE MAP WAS CREATED USING AN AERIAL SURVEY TAKEN IN 2001 BY AIR–LAND SURVEY, AND PROVIDED BY WDI, A SURVEY BY MCLLC IN OCTOBER 2007 AND A GROUND SURVEY BY WDI IN OCTOBER 2008.

NTH PROJECT No.: 62080376	CAD FILE NAME: 62080376–SED3	NTH Consultants, Ltd. Infrastructure Engineering and Environmental Services	NORTHWEST SEDIMENTATION BASIN MONITORING SAMPLE SECTORS	FIGURE: 3
DESIGNED BY: DC	PLOT DATE: 8/9/2011			
DRAWN BY: RMLII	DRAWING SCALE: AS SHOWN		WAYNE DISPOSAL, INC. SITE NO. 2 - MC VI F&G VAN BUREN TWP., WAYNE COUNTY, MICHIGAN	
CHECKED BY: DC	INCEPTION DATE: 02/16/09			

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Sample Collection Log for Sediments - WDI Site #2

Sample ID: (Basin, Sector #)	**Sample Date:**	**Sample Time:**
Sample Location: (x,y coordinates)	**Sampling Method:**	**Sampler:**
Sample Description/Comments*:		

Sample ID: (Basin, Sector #)	**Sample Date:**	**Sample Time:**
Sample Location: (x,y coordinates)	**Sampling Method:**	**Sampler:**
Sample Description/Comments*:		

Sample ID: (Basin, Sector #)	**Sample Date:**	**Sample Time:**
Sample Location: (x,y coordinates)	**Sampling Method:**	**Sampler:**
Sample Description/Comments*:		

Sample ID: (Basin, Sector #)	**Sample Date:**	**Sample Time:**
Sample Location: (x,y coordinates)	**Sampling Method:**	**Sampler:**
Sample Description/Comments*:		

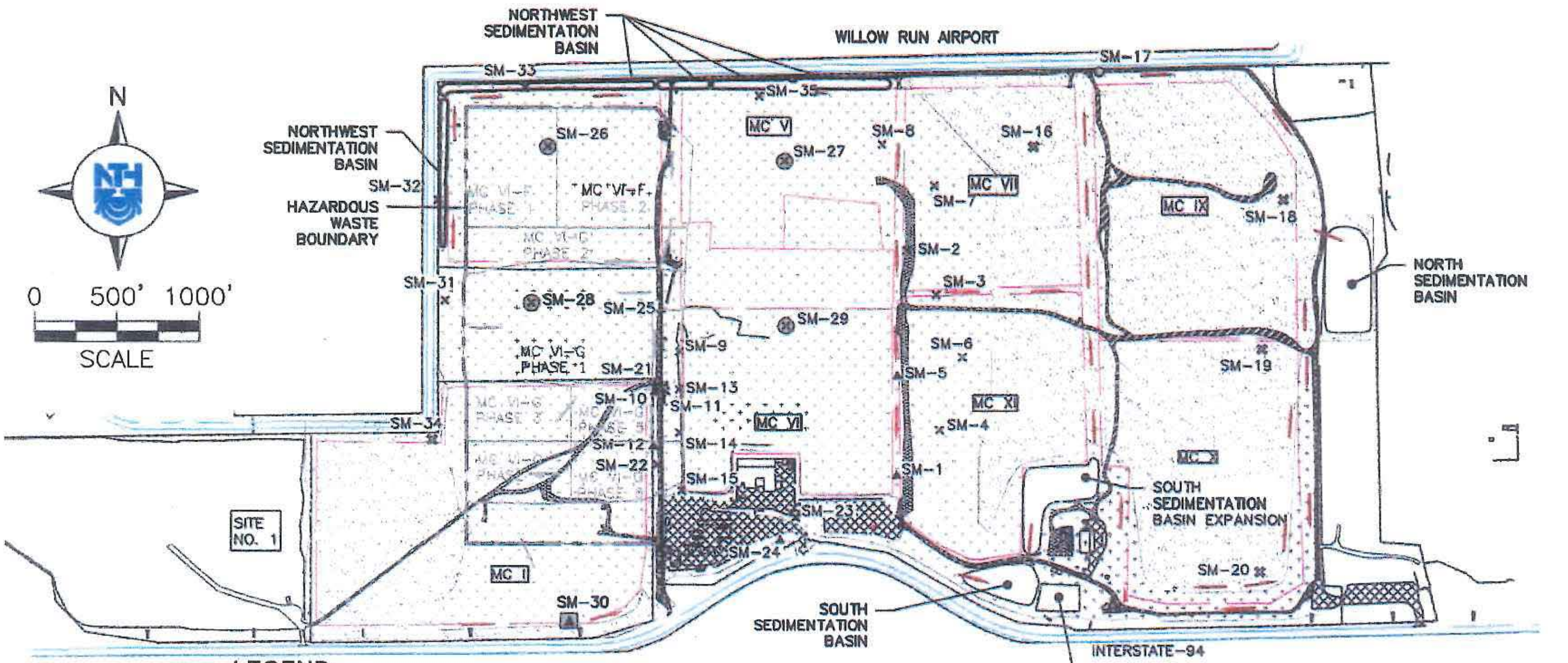
* Include any unusual characteristics such as color, sheen, odor, etc.

Figure 4.

SOIL MONITORING
SAMPLING AND ANALYSIS PLAN

WAYNE DISPOSAL, INC.

Version 1.4 March 2018



LEGEND:

▩ UNPAVED ROADS–AREA A ■ PERIMETER ROADS

▨ UNPAVED ROADS–AREA B ▦ PAVED SURFACES

AREA A

AREA B

× SM 2 SOIL SAMPLING LOCATION – AREA A

▲ SM 1 SEDIMENT SAMPLING LOCATION – AREA A

✖ SM 16 SOIL SAMPLING LOCATION – AREA B

● SM 17 SEDIMENT SAMPLING LOCATION – AREA B

⬤ SM 26 SOIL SAMPLING LOCATION – POST CLOSURE

☒ SM 34 SOIL SAMPLING LOCATION – POST MC VI F/G CONSTRUCTION

▲ SM 30 SEDIMENT SAMPLING LOCATION – POST MC VI F/G CONSTRUCTION

— DIRECTION OF INTERIM SURFACE WATER FLOW

— DIRECTION OF SURFACE WATER FLOW – POST MC VI F/G CONSTRUCTION

NOTES:

1. ROADWAYS ARE SHOWN FOR REFERENCE ONLY AND MAY NOT REPRESENT THE ACTUAL ROADWAY DIMENSIONS.
2. ANY REVISIONS TO THIS DRAWING REQUIRE THE APPROVAL OF THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY WASTE AND HAZARDOUS MATERIALS DIVISION. APPROVED REVISIONS MUST BE ATTACHED TO THE FOLLOWING DOCUMENTS: SOIL MONITORING SAP, SURFACE WATER MONITORING SAP, TRACKOUT MANAGEMENT SOP, FUGITIVE DUST MANAGEMENT SOP.
3. SM-9 THROUGH SM-15, SM-21, SM-22 AND SM-25 WILL BE REMOVED. SM-26 THROUGH SM-29 WILL REPLACE THE SAMPLING LOCATIONS THAT ARE REMOVED.

NTH PROJECT No.: 62080376	DESIGNED BY: KRO	CHECKED BY: ACE	DRAWING SCALE: AS SHOWN	NTH Consultants, Ltd. Infrastructure Engineering and Environmental Services	WAYNE DISPOSAL, INC. SITE NO. 2	SOIL MONITORING LOCATION PLAN	FIGURE 1
CAD FILE NAME: 080376-SMP	DRAWN BY: KRO	INCEPTION DATE: 02/16/09	PLOT DATE: 12/9/2014		VAN BUREN TWP., WAYNE COUNTY, MICHIGAN		

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Figure 2. Sample Collection Log for Soil Samples - WDI Site #2

Sample ID:	**Sample Date:**	**Sample Time:**
Sample Location:	**Sample Depth**	**Sampler:**
Soil Description/Comments*:		

Sample ID:	**Sample Date:**	**Sample Time:**
Sample Location:	**Sample Depth**	**Sampler:**
Soil Description/Comments*:		

Sample ID:	**Sample Date:**	**Sample Time:**
Sample Location:	**Sample Depth**	**Sampler:**
Soil Description/Comments*:		

Sample ID:	**Sample Date:**	**Sample Time:**
Sample Location:	**Sample Depth**	**Sampler:**
Soil Description/Comments*:		

* Note color and consistency and any sheen, odor or other relevant characteristics of the sample

Wayne Disposal Inc.
2018 TSCA Permit Renewal

Attachment 9
Leak Detection Monitoring

LEAK DETECTION, COLLECTION AND REMOVAL SYSTEMS SAMPLING & ANALYSIS PLAN

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

1.0 INTRODUCTION

The following sampling and analysis plan outlines the standard procedures for measuring flow volumes and for the collection and analysis of samples of the liquids collected from the leak detection, collection and removal system (LDCRS) in Master Cell VI. There are currently ten LDCRS sumps within Master Cell VI: VI-A South, VI-A North, VI-B, VI-C and VI-D, VI-E-SE, VI-E-SW, VI-E-NW, VI-ENE and VI-G (phase 1). The locations of these sumps are shown on Attachment A. Three additional LDCRS sumps will located in subsequent phases of master cells, MC-VI-F and MC-VI -G however these will not be operational until these cells are constructed and begin to receive waste.

This document has been prepared to direct the efforts of monitoring personnel in the collection of samples and volume measurements so as to meet the requirements of the Operating License issued under Part 111 of Michigan Act 451 for the facility and to ensure sound practices for the collection of these data.

This plan must be revised if there are any changes to the equipment or procedures contained herein. All proposed changes must be submitted to the Office of Waste Management and Radiological Protection (OWMRP) of the Michigan Department of Environmental Quality (MDEQ) for review and approval prior to implementation.

2.0 PUMPING/SAMPLING EQUIPMENT

Each LDCRS sump must be equipped with a submersible pump with a controller package and totalizing flow meter. These pumps were selected for the following attributes: 1) they are composed of stainless steel and Teflon and thus have low potential to impact the quality of environmental samples, 2) the pumps are designed to collect groundwater samples with minimal aeration or perturbation of the sample and, 3) the pumping rates are adjustable with high rates for removing liquids from the sump and low rates for sampling. Any pump system installed in the LDCRS should have similar attributes for pumping and for collecting samples.

The discharge tube for the pumps is composed of HDPE. At the surface, this tube is connected to a stainless steel or PVC discharge tube with the flow meter in line. The opening at the top of each LDCRS riser must be tightly covered with a cap in which the discharge tube and electrical cable penetrate through sealed ports. The discharge tube and electrical cable must be configured such that it does not come into contact with the ground surface and such that the end valve is protected. Any changes to the configuration of the LDCRS riser pipe as the waste surface ascends must ensure that the sampling tube is not susceptible to contamination.

3.0 INSPECTION AND VOLUME AND FIELD MEASUREMENTS

Each LDCRS must be inspected on a weekly basis to ensure that there is no evidence of damage or tampering that could allow waste or waste constituents to have entered the system. Any relevant observations must be recorded and include evidence of malfunctioning equipment or other potential problems described in detail.

Except as described below, once per week each LDCRS is pumped and the meter readings from the flow meters are recorded. The exception is for any LDCRS that is yielding less than 1 gpad in order to ensure that there is sufficient volume for monthly and quarterly sampling. On a monthly basis, each sump should be pumped until it is dry. The volume data must be evaluated each month to determine the average flow rate for the month produced on a gallons-per-acre-per day basis.

Once per month, a sample of the water from each LDCRS sump must be field tested for pH and specific conductivity. These values must be recorded on Attachment B. The monthly volume data and field parameter data must be evaluated by the Environmental Manager to determine if there are anomalous flow rates or field tests.

4.0 COLLECTION OF SAMPLES

Unless there is an insufficient amount of liquid generated by a LDCRS during a month's time (time between monthly purging/volume recording events), samples must be collected for analysis on a quarterly basis from each LDCRS sump. In addition, any sump which yields volumes above the maximum expected volume (see Section 7.1) during a monthly purging/volume recording event must be sampled and analyzed for the quarterly parameter list. Further, any time a monthly field specific conductivity value exceeds the maximum expected value (see Section 7.1) a sample must be collected and analyzed for quarterly parameters, unless the conductivity measurement was made during the collection of the quarterly sample for that sump.

Prior to collecting the samples, the sump should be pumped until a minimum of 20 gallons are removed in order to ensure that the lines have been flushed (this is approximately 3 tubing volumes) unless the production rate of the sump indicates that less than 20 gallons will be available. Prior to sampling the flow rate of the pump must be throttled back to the minimum deliverable flow rate and then the samples are collected. The sump then must be pumped until dry.

Samples are collected within a nitrogen glove box whenever possible. Prior to sampling, the glove box is purged with nitrogen for approximately 20 minutes. The sample containers are placed within the box during purging. The glove box is connected to the LDCRS pumps with a fitting that allows new Tygon tubing to be used for each sample. At the time of sampling, the flow from the LDCRS is diverted into the glove box by turning the valve on the back of the box. All containers are then filled within the box while under positive pressure from the nitrogen. All containers are closed before opening the glove box to remove them.

During the sample event, specific conductance and pH of the liquid must be measured on a sample of the liquid. The volume purge data and pH/conductance data for each sump must be recorded on the Attachment B.

Samples for VOC's are collected first while ensuring that no headspace is present within the sampling vials. Next, fill the bottles for total organic carbon, total phenolics and dissolved metals in that order. Finally, collect the remaining miscellaneous samples (e.g. sulfate, chloride, etc.). All samples are to be collected in the appropriate containers with the appropriate preservatives as outlined on Attachment C, "Handling Requirements of Monitoring Parameters." Care must be taken to ensure that preservatives are not spilled during sampling. Samples for dissolved metals may be field filtered with an in-line 0.45 micron filter cartridge and acidified to pH < 2 with HNO3, or, filtered and preserved at the laboratory upon delivery.

A trip blank and a field blank for VOC analyses must be maintained and submitted for analysis for each 10 samples collected and/or for each day samples are collected. In addition, one blind duplicate samples must be submitted for complete analyses for every other sampling event (two per year). Each sample container must be carefully labeled with the sampling location, time and date, identity of preservatives contained within and the sampler's initials. After collection, the samples shall be stored in a clean cooler containing ice or ice packs. The coolers containing samples must be stored in a secure location until transport to the laboratory.

5.0 ANALYTICAL PROCEDURES

Each sample is to be analyzed for the parameters listed on Attachment D, "Method Detection Limits for Organic and Inorganic Parameters." The analytical methods and targeted method detection limits must be those specified in Policy and Procedures Document OWMRP-111/115-8 unless the MDEQ approves alternate detection limits. If a revised OWMRP-111/115-8 is published by MDEQ, Attachment D must be modified (if necessary) to be consistent with the revisions.

6.0 RECORD KEEPING

In addition to the inspection/volume measurement forms contained in Attachment B there are two other items required to ensure adequate record keeping for the LDCRS monitoring program. First, an equipment inventory, repair and maintenance log must be maintained in the Engineering Field Office at the site. This log shall contain the serial numbers of all sampling equipment and a record of any repairs, maintenance, calibration or replacement of this equipment. Second, a chain of custody form must be filled out for each sampling event. A sample copy is included as Attachment E. This form 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 this form must be retained.

7.0 DATA ANALYSIS AND REPORTING

Data analysis and reporting are required for both the volume data and the analytical data. Both volume and analytical data are evaluated statistically to determine if there has been a significant change.

7.1 Volume Rate Analysis

Volume data must be evaluated monthly to determine an average daily flow rate in gallons-per-acre-per-day (gpad). This is done by utilizing the following formula:

Flow Rate (gpad) = (Total Volume (gal)/Time (days))/Area of LDCRS (acres)

ATTACHMENT A

Sump Location Map

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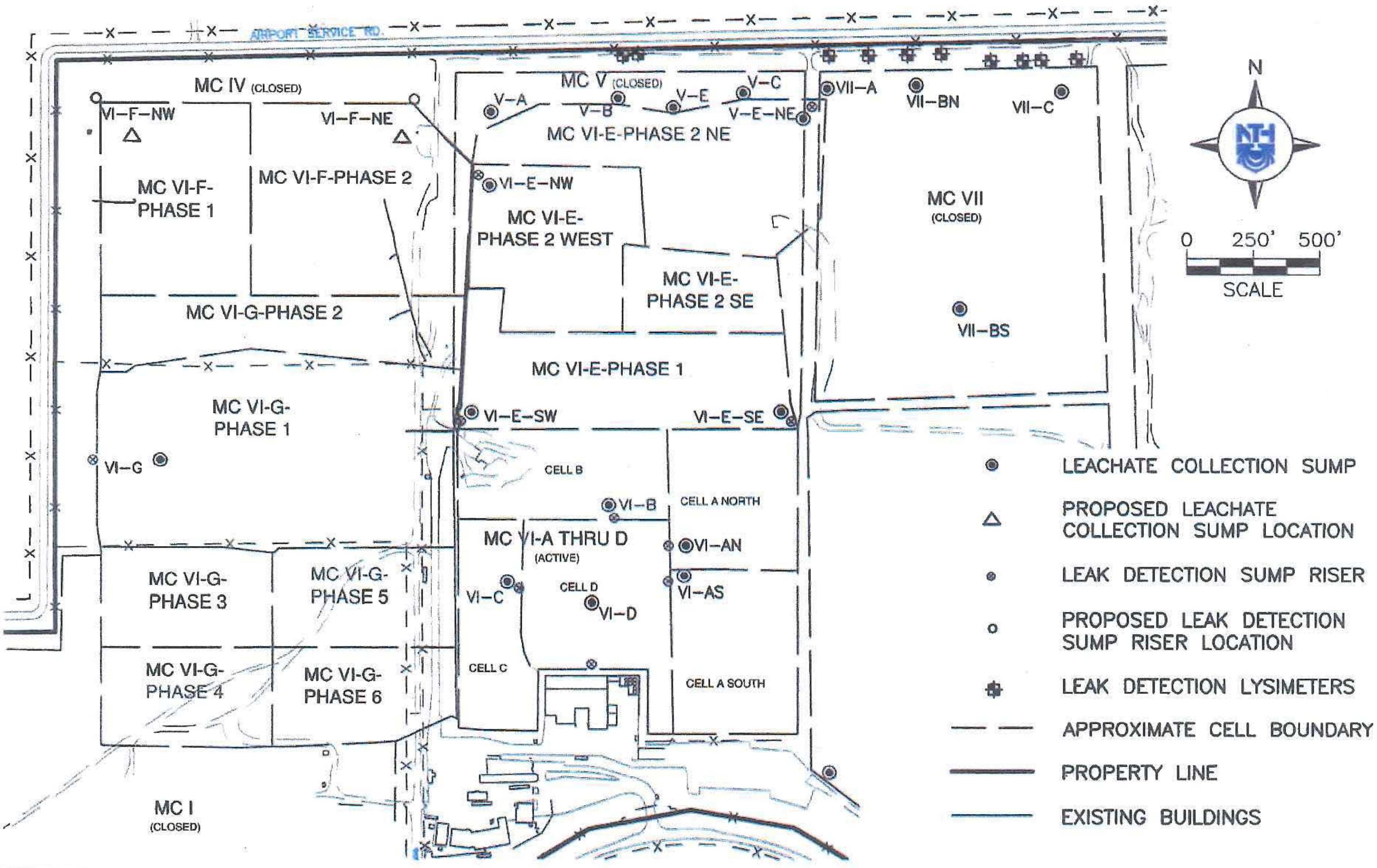

NTH PROJECT No.: 62-080376-00	DESIGNED BY: KRO	CHECKED BY: ACE	DRAWING SCALE: AS SHOWN	NTH Consultants, Ltd. Infrastructure Engineering and Environmental Services	LEACHATE COLLECTION & LEAK DETECTION LOCATIONS	ATTACHMENT A
CAD FILE NAME: 080376-LCS	DRAWN BY: KRO	INCEPTION DATE: 1/27/2011	PLOT DATE: 12/1/14		WAYNE DISPOSAL, INC. SITE NO. 2 VAN BUREN TWP., WAYNE COUNTY, MICHIGAN	

ATTACHMENT B

Monthly Inspection Form

LEAK DETECTION SYSTEM INSPECTION

Cell	Meter Reading	Riser Pumped Dry?		Pump Functioning?		Meter Functioning?		Cap Secure and in Good Condition?		Cap Seals Tight?		Waste Away From Cap & Discharge?		Discharge Pipe Sealed Off?		Condition of Riser Pipes Ok?		Condition of Motor Controller Ok?		No Evidence of Tampering?	
		Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
6AS																							
6AN																							
6B																							
6C																							
6D																							
6E-SE																							
6E-SW																							
6E-NW																							
6E-NE																							
6G																							

INSPECTOR:

DATE:

INSPECTION START TIME:

DESCRIBE ANY ITEM THAT WAS CHECKED "NO" AND/OR PROVIDE OTHER COMMENTS/OBSERVATIONS:

WAYNE DISPOSAL SITE #2

LEAK DETECTION SYSTEM PUMPING AND SAMPLING RECORD

DATE:____

MASTER CELL:__________________CELL: _______________

NAME:____

DATE OF LAST READING:____________________________

METER READING PRIOR TO PUMPING:_____________________

METER READING AFTER PUMPING:_______________________

SUMP PUMPED DRY? YES__________NO__________

VOLUME PUMPED (gallons):___________________________

SPECIFIC CONDUCTANCE:_______________pH_______________

CONDITION OF SUMP/METER: _________________________

OTHER COMMENTS (INCLUDE DESCRIPTION OF SAMPLE IF ANY UNUSUAL CHARACTERISTICS ARE OBSERVED) :_____________________

NOTE: THIS RECORD MUST BE FILED IN EHS FILES

ATTACHMENT C

Handling Requirements of Monitoring Parameters

Handling Requirements of Monitoring Parameters

Parameter	Perservation	Holding Time	Bottle Type	Minimum Volume
Total Phenolics	1,2	28 Days	Amber Glass	0.5 L
Sulfate	2	28 Days	Plastic	50 ml*
Alkalinity	2	14 Days	Plastic	100 ml*
Chloride	2	28 Days	Plastic	50 ml*
Nitrate/Nitrite	1,2	48 Hrs	Plastic	0.5 L
Aluminum	3,5	6 Mos	Plastic	200 ml**
Antimony	3,5	6 Mos	Plastic	200 ml**
Arsenic	3,5	6 Mos	Plastic	200 ml**
Barium	3,5	6 Mos	Plastic	200 ml**
Beryllium	3,5	6 Mos	Plastic	200 ml**
Cadmium	3,5	6 Mos	Plastic	200 ml**
Calcium	3,5	6 Mos	Plastic	200 ml**
Chromium	3,5	6 Mos	Plastic	200 ml**
Chromium, Hexavalent	2,5	24 Hrs	Plastic	100 ml
Cobalt	3,5	6 Mos	Plastic	200 ml**
Copper	3,5	6 Mos	Plastic	200 ml**
Iron	3,5	6 Mos	Plastic	200 ml**
Potassium	3,5	6 Mos	Plastic	200 ml**
Lead	3,5	6 Mos	Plastic	200 ml**
Magnesium	2,3,5	6 Mos	Plastic	200 ml**
Manganese	2,3,5	6 Mos	Plastic	200 ml**
Mercury	3,5	6 Mos	Plastic	200 ml**
Molybdenum	2,3,5	6 Mos	Plastic	200 ml**
Nickel	2,3,5	6 Mos	Plastic	200 ml**
Selenium	3,5	6 Mos	Plastic	200 ml**
Silver	3,5	6 Mos	Plastic	200 ml**
Sodium	3,5	6 Mos	Plastic	200 ml**
Thallium	3,5	6 Mos	Plastic	200 ml**
Tin	3,5	6 Mos	Plastic	200 ml**
Vanadium	3,5	6 Mos	Plastic	200 ml**
Zinc	3,5	6 Mos	Plastic	200 ml**
pH		Immediate	Plastic	25 ml
Bicarbonate	2	14 Days	Plastic	100 ml*
Carbonate	2	14 Days	Plastic	100 ml*
TOC	7	28 Days	Glass	100 ml
Specific Conductivity	2	28 Days	Plastic	100 ml
Total Cyanide	2,4	14 Days	Plastic	500 ml
Amenable Cyanide	2,4	14 Days	Plastic	500 ml
Volatile Organics	2,6	14 Days	Glass	2x40 ml
PCBs	2	7 Days- Extraction	Glass	2 L
	2	40 Days- Analysis	Glass	40 ml

1) pH<2 with concentrated Sulfuric Acid
2) Store at 4 degrees centigrade
3) pH<2 with nitric acid
4) pH>12 with sodium hydroxide
5) Filtered in the field using 0.45 micron membrane filters on the time of collection
6) 4 drops HCL, no headspace
7) pH<2 with hydrochloric acid

* Note: One liter for all of these parameters stored similarly
** Note: One liter for all of these parameters stored similarly

Attachment C

ATTACHMENT D

Method Detection Limits for Organic & Inorganic Parameters

METHOD DETECTION LIMITS - ORGANIC ANALYSIS

Parameter	Sample Preparation Method	Analytical Method	Detection Limit (mg/l)
Acetone	---	EPA 8260B	0.020
Bromodichloromethane	---	EPA 8260B	0.001
Bromoform	---	EPA 8260B	0.001
Bromomethane	---	EPA 8260B	0.005
Carbon tetrachloride	---	EPA 8260B	0.001
Chlorobenzene	---	EPA 8260B	0.001
Chloroethane	---	EPA 8260B	0.005
2-Chloroethylvinyl Ether	---	EPA 8260B	0.010
Chloroform	---	EPA 8260B	0.001
Chloromethane	---	EPA 8260B	0.001
Dibromodifluoromethane	---	EPA 8260B	0.001
1,2 Dichlorobenzene	---	EPA 8260B	0.001
1,3 Dichlorobenzene	---	EPA 8260B	0.001
1,4 Dichlorobenzene	---	EPA 8260B	0.001
Dichlorodifluoromethane	---	EPA 8260B	0.001
1,1-Dichloroethane	---	EPA 8260B	0.001
1,2-Dichloroethane	---	EPA 8260B	0.001
1,1-Dichloroethene	---	EPA 8260B	0.001
1,2-Dichloroethene	---	EPA 8260B	0.001
1,2 Dichloropropane	---	EPA 8260B	0.001
cis-1,3 Dichloropropene	---	EPA 8260B	0.001
trans-1,3 Dichloropropene	---	EPA 8260B	0.001
1,1,1,2, Tetrachloroethane	---	EPA 8260B	0.001
1,1,2,2, Tetrachloroethane	---	EPA 8260B	0.001
Tetrachloroethene	---	EPA 8260B	0.001
1,1,2-Trichloroethane	---	EPA 8260B	0.001
1,1,1-Trichloroethane	---	EPA 8260B	0.001
Trichloroethene	---	EPA 8260B	0.001
Trichlorofluoromethane	---	EPA 8260B	0.001
Vinyl Chloride	---	EPA 8260B	0.001
Methylene Chloride	---	EPA 8260B	0.005
2- Butanone (MEK)	---	EPA 8260B	0.005
Benzene	---	EPA 8260B	0.001
Toluene	---	EPA 8260B	0.001
Ethylbenzene	---	EPA 8260B	0.001
Total Xylenes	---	EPA 8260B	0.003
PCB-1016	EPA 3510C	EPA 8082A	0.0001
PCB-1221	EPA 3510C	EPA 8082A	0.0001
PCB-1232	EPA 3510C	EPA 8082A	0.0001
PCB-1242	EPA 3510C	EPA 8082A	0.0001
PCB-1248	EPA 3510C	EPA 8082A	0.0001
PCB-1254	EPA 3510C	EPA 8082A	0.0001
PCB-1260	EPA 3510C	EPA 8082A	0.0001

EPA methods from TEST METHODS FOR EVALUATING SOLID WASTE, USEPA SW-846
SM methods from STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER
MDLs are Target Detection Limits per Op Memo OWMRP 111/115-8

METHOD DETECTION LIMITS FOR INORGANIC PARAMETERS

PARAMETER	MDL (mg/L)	SAMPLE PREP METHOD	ANALYTICAL METHOD
TOTAL PHENOLICS	0.01	EPA 420.4	EPA 420.4
SULFATE	2	---	SM 4500-SO4 E-11
TOTAL ALKALINITY	10	---	SM 2320B-11
CHLORIDE	1	---	SM 4500-Cl E-11
NITRATE/NITRITE	0.01	---	SM 4500 NO3 F-11
ALUMINUM	0.05	EPA 3010A	EPA 6010C
ANTIMONY	0.001	EPA 3020A	EPA 6020A
ARSENIC	0.001	EPA 3020A	EPA 6020A
BARIUM	0.005	EPA 3010A	EPA 6010C
BERYLLIUM	0.001	EPA 3020A	EPA 6020A
CADMIUM	0.0002	EPA 3020A	EPA 6020A
CALCIUM	1	EPA 3010A	EPA 6010C
CHROMIUM	0.001	EPA 3020A	EPA 6020A
HEX. CHROMIUM	0.005	---	EPA 7196A
COBALT	0.015	EPA 3020A	EPA 6020A
COPPER	0.01	EPA 3010A	EPA 6010C
IRON	0.02	EPA 3010A	EPA 6010C
LEAD	0.001	EPA 3020A	EPA 6020A
MAGNESIUM	1	EPA 3010A	EPA 6010C
MANGANESE	0.005	EPA 3020A	EPA 6020A
MERCURY	0.0002	EPA 7470A	EPA 7470A
MOLYBDENUM	0.025	EPA 3020A	EPA 6020A
NICKEL	0.002	EPA 3010A	EPA 6010C
POTASSIUM	0.1	EPA 3010A	EPA 6010C
SELENIUM	0.001	EPA 3020A	EPA 6020A
SILVER	0.0002	EPA 3020A	EPA 6020A
SODIUM	1	EPA 3010A	EPA 6010C
THALLIUM	0.002	EPA 3020A	EPA 6020A
TIN	0.2	EPA 3020A	EPA 6020A
VANADIUM	0.002	EPA 3020A	EPA 6020A
ZINC	0.01	EPA 3010A	EPA 6010C
pH	N/A	---	SM 4500-H+ B-11
BICARBONATE	10	---	SM 2320B-11
CARBONATE	10	---	SM 2320B-11
TOTAL CYANIDE	0.005	EPA 9014	EPA 9014
AMENABLE CYANIDE	0.005	EPA 9014	EPA 9014
TOTAL ORGANIC CARBON	0.2	---	SM 5310C-11
SPEC. CONDUCTANCE	5 (umhos/cm)	---	SM 2510B-11

EPA methods from TEST METHODS FOR EVALUATING SOLID WASTE, USEPA SW-846
SM methods from STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER
MDLs are Target Detection Limits per Op Memo OWMRP 111/115-8

ATTACHMENT E

Chain-of-Custody

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: of

Section A
Required Client Information:

Company:
Address:
Email To:
Phone: Fax:
Requested Due Date/TAT:

Section B
Required Project Information:

Report To:
Copy To:
Purchase Order No.:
Project Name:
Project Number:

Section C
Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER ____________

Site Location
STATE: ________

Section D
Required Client Information

Matrix Codes
MATRIX / CODE

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

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	TIME	COMPOSITE END/GRAB DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N ➡ ⬇ Analysis Test ➡	Requested Analysis Filtered (Y/N)												Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1																																
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
							Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days

F-ALL-Q-020rev.07, 15-May-2007

Instructions for completing Chain of Custody (COC)

1. **Section A and B:** Complete all Client information at top of sheet: company name, address, phone, fax, contact (the person to contact if there are questions, and who will receive the final report.), e-mail address (if available), PO#, Project Name and/or Project Number as you would like to see it appear on the report.

2. **Section C:** Invoice Information: Billing information is included in this section. This information should include the name and address of the person receiving the invoice.

3. Quote Reference should be completed if a quotation was provided by Pace Analytical. The Project Manager, and Profile No. will be completed by Pace Analytical Services.

4. **Site Location:** A separate COC must be filled out for each day of sample collection. Record the two letter postal code for the US state in which the samples were collected.

5. **Regulatory Agency:** List the program that is guiding the work to ensure proper regulations are followed.

6. **Section D:** Complete a Sample Description in the "SAMPLE ID' section as you would like it to appear on the laboratory report. The following information should also be included: the sample matrix, sample type (G (grab) or C (composite). When collecting a composite, the start time and end time should be documented in the respective boxes. The collection time for a grab (G) sample should be entered in the boxes marked 'Composite End/Grab'), Sample temp at collection (if required by state), the total number of containers, and preservative used.

7. Mark if the sample was filtered in the field by marking Y or N in 'Filtered' row by the Analysis requested.

8. Requested Analysis: List the required analysis and methods on the lines provided and place a check in the column for the samples requiring the analysis. Additional comments should be referenced in the bottom left hand corner or include attachments for extended lists of parameters.

9. The sampler should print their name in the space provided and sign their name followed by the date of the sampling event at the bottom of the COC in the spaces designated for 'SAMPLER NAME AND SIGNATURE'.

10. When relinquishing custody of the samples to a representative of the laboratory or other organization, indicate the Item Numbers of those samples being transferred; sign relinquished by, date and time, and include your affiliation.

***Important Note:**

Standard Turnaround Time is 2 Weeks/10 business days. Results will be delivered by end of business on the date due unless other arrangements have been made with your project manager.

Special Project Requirements such as Low Level Detection Limits or level of QC reported must be included on the chain of custody in the Additional Comments section.

ATTACHMENT F

Statistical Program for the LDCRS

Attachment F - LDCRS Statistical Monitoring Plan

STATISTICAL EVALUATION

With the exception of PCBs at the LDCRS for Cell VI-AN, the statistical program for LDCRS monitoring utilizes Nonparametric Prediction Limits (NPPLs) to evaluate the monitoring data. In order to balance false positive and statistical power with this test, resamples are used, the number of which are determined by the number of sampling points and the number of background observations. Since there is no "upgradient" in the LDCRS system, and there was no substantial pre-waste disposal sampling program, the definition of background is not defined in a traditional sense. Thus the use of resamples is selected somewhat arbitrarily (see below).

The NPPL is defined as the highest concentration of a monitoring parameter detected in a background sample. For parameters that are never detected in the background, the NPPL is defined as the reported detection limit. Since the parameters to be analyzed statistically are all organic compounds, the reported detection limit, as listed on Attachment D of the LDCRS Sampling and Analysis Plan are the NPPLs. Therefore, any reported concentration of an Attachment E parameter at or above these limits is considered an apparent statistically significant increase.

If an Attachment D compound is detected, then the NPPL been exceeded and WDI will immediately notify the Waste Management Division (WMD) of the Michigan Department of Environmental Quality (MDEQ) and arrange resampling as soon as possible to confirm or refute the apparent statistically significant increase. Quadruplicate samples will be collected for confirmation purposes and analyzed for the offending parameter(s). Since these quadruplicates are not independent samples, it does not constitute a multiple resampling as defined by the NPPL test. Thus the quadruplicate samples constitute a single resampling. If three of the four quadruplicate samples are clean, then the statistical increase is not confirmed. If two or more of the quadruplicates contain the compound of interest the apparent increase will be deemed confirmed and WDI shall respond in accordance with the current Operating License.

Cell VI-AN was contaminated during the repair of a collapsed LDCRS riser pipe and low levels of PCBs have been detected sporadically in samples since this work was completed. To address PCBs at this location, if PCBs are detected in three consecutive samples, WDI will determine if concentrations are increasing with time. If the concentration of total PCBs is shown to increase in the three consecutive samples it will reported as an apparent statistically significant increase and WDI will respond per the Operating License.

Wayne Disposal Inc.
2018 TSCA Permit Renewal

Attachment 10
Ambient Air Monitoring

Ambient Air MONITORING PROGRAMS

The administrative rules promulgated pursuant to Part 111, Hazardous Waste Management, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), R 299.9611 establishes requirements for the environmental monitoring programs for hazardous waste management facilities. Owners and operators of hazardous waste treatment, storage, or disposal facilities must develop an environmental monitoring program capable of detecting a release of hazardous waste or hazardous waste constituents from the facility to groundwater, air, or soil.

This license application template addresses requirements for an environmental monitoring program for hazardous waste management units and the hazardous waste management facility for the Michigan Disposal Waste Treatment Plant and Wayne Disposal Inc. facility. The template includes either a monitoring program description or a demonstration for a waiver from the monitoring requirements in accordance with R 299.9611(3)(a) and (b) and R 299.9611(4) as indicated below:

Ambient Air Monitoring Program (Check as appropriate)

☒ Monitoring program and sampling and analysis plan

☐ Waiver

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B5.B AMBIENT AIR MONITORING PROGRAM

[R 299.9611(2)(c) and (4)]

B5.B.1 SAMPLING AND ANALYSIS PLAN

[R 299.9611(2)(a)]

A sampling and analysis plan for ambient air monitoring for [redacted] is included in the QA/QC Plan. The sampling and analysis plan was prepared in accordance with the requirements specified in R 299.9611(2)(a). All sampling and analysis performed pursuant to this application will be consistent with the QA/QC Plan. All samples for the purpose of environmental monitoring will be collected, transported, stored, and disposed by trained and qualified individuals in accordance with the QA/QC Plan.

The [redacted] facility will conduct ambient air monitoring to demonstrate compliance with the provisions of Part 55 of Act 451 and will be utilized to characterize the air quality associated with both MDWTP (MID 000724831) and WDI (MID 048090633) Site #2.

B5.B.1(A) SAMPLERS AND LOCATION

Ambient air quality will be monitored at seven stations around the perimeter of the site, one of which is a collocated station. These locations are noted on the map attached. All seven sites are equipped with a polyurethane foam (PUF) sampler, high volume Total Suspended Particulate (TSP) sampler, and a sorbent tube sampler, with the collocated station having two of each sampling apparatus. Sampling equipment is inspected before and after use.

B5.B.1(B) SCHEDULE

The sampling schedule for the high volume samplers is every 12th day for 24 hours (to coincide with the USEPA national sampling schedule. When required, resampling will occur on an alternate sampling day as designated by the national sampling schedule.

B5.B.1(C) SAMPLING AND ANALYSIS

PCB sampling will be conducted using a high volume PUF sampler and analyzed and reported as total PCBs. Sampling for the PCB compounds will be conducted in adherence to the USEPA's Toxic Organic Compendium Methods TO-4A or TO-10A. The PUF samplers will operate at an air sampling rate of approximately 200 to 280 lpm.

Metal concentrations will be determined from the samples collected in a high volume TSP sampler. The sampling for multi-metals will adhere to the requirements of 40 CFR Part 50, Appendix G for the determination of lead. All sections referenced by Part 50, Appendix G will likewise be followed. Then analysis will be performed using USEPA Reference Methods for lead and the other metals listed in the attached table to this monitoring plan. Quality control and assurance requirements specified in the method will be incorporated in the sampling protocol. Samples will be collected with a nominal flow rate of 50 cfm ± 10 cfm.

VOC's will be sampled utilizing a system of sorbent tubes capable of effectively collecting the listed compounds in the attached table. A constant flow sampling pump is operated at approximately 0.10 liters per minute (lpm). Samples will be collected at a flow rate adequate to reach the required limits of detection. Sampling will be conducted in adherence to the USEPA's Toxic Organic Compendium Method, TO-17 for solid sorbent tubes.

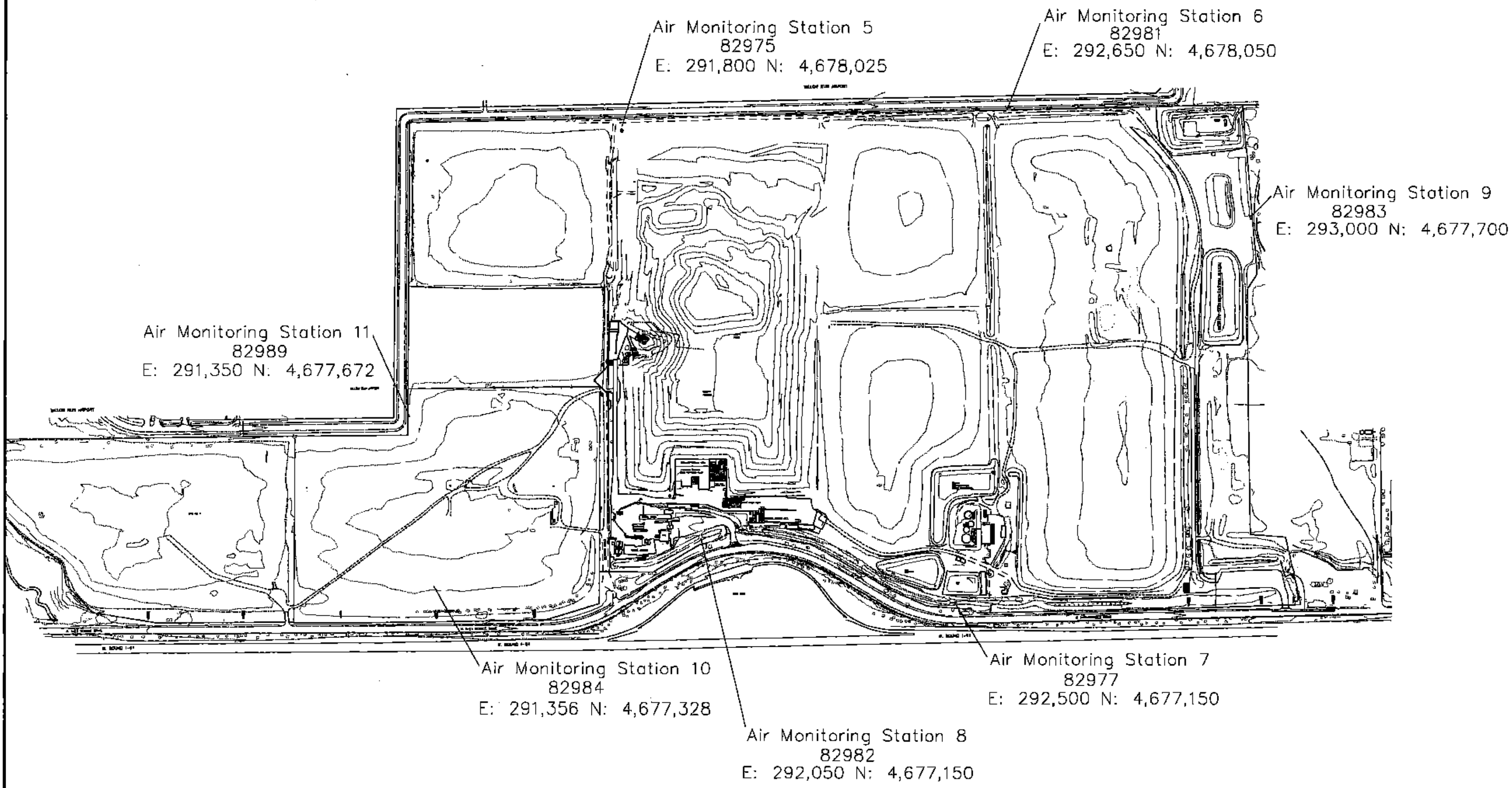
B5.B.1(D) MONITORING PARAMETERS

The table below provides a list of parameters monitor and the minimum detection limit.

WDI & MDWTP - AMBIENT AIR - MONITORING PARAMETERS (METALS and PARTICULATES)	
COMPOUND	**DETECTION LIMIT (ug/m^3)**
CADMIUM	0.005
CHROMIUM	0.009
LEAD	0.025
TSP	-
WDI & MDWTP – AMBIENT AIR - MONITORING PARAMETERS (ORGANIC COMPOUNDS)	
COMPOUND	**DETECTION LIMIT (ug/m^3)**
BENZENE	0.04
CARBON TETRACHLORIDE	0.25
CHLOROFORM	0.05
ETHYLBENZENE	1
METHYLENE CHLORIDE	1
1,1-DICHLOROETHANE	1
1,1,1-TRICHLOROETHANE	1
TETRACHLOROETHENE	0.1
TRICHLOROETHENE	0.1
TOLUENE	1
XYLENE (TOTAL)	1
PCBs (TOTAL)	0.02

B5.B.1(E) QUALITY ASSURANCE

On each run day, samples from the collocated site shall be analyzed and reported to the MDEQ for the assessment of sampler precision. One sample day per month, one blank sorbent tube and metals filter shall accompany the samples to the collocated site , not have air pulled through it, then submitted to the laboratory as a "trip blanks". All laboratory quality assurance, such as the analysis of blanks and standards, shall be made available to the MDEQ upon request for the determination of accuracy. If any parameter that is analyzed by the laboratory and determined to be non-detectable, the value of the method detection limit for that compound divided by 2 (MDL/2) shall be reported. Staff from the MDEQ may audit the ambient air monitoring program, files, and samplers at their discretion.



THE
ENVIRONMENTAL QUALITY
COMPANY

REVISIONS
A
B
C
D
E

PROJ. FILE WDI
FILENAME:
DATE: 10/31/13
SCALE: 1"=300'
SHEET __ of __
DRN BY: CAG

WAYNE DISPOSAL INC.
WAYNE DISPOSAL INC

AIR MONITORING STATIONS

Wayne Disposal Inc.
2018 TSCA Permit Renewal

Attachment 11
Preparedness and Prevention Procedures

PREPAREDNESS AND PREVENTION

The administrative rules promulgated pursuant to Part 111, Hazardous Waste Management, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), R 299.9504, R 299.9508, and R 299.9606 and Title 40 of the Code of Federal Regulations (CFR) §§264.30 through 264.37 establish requirements for preparedness for and prevention of releases of hazardous wastes or constituents at hazardous waste management facilities. All references to 40 CFR citations specified herein are adopted by reference in R 299.11003.

This license application addresses requirements for preparedness for and prevention of releases of hazardous wastes or constituents at the following hazardous waste management facility for the *Wayne Disposal Inc. (WDI) and Michigan Disposal Waste Treatment Plant (MDWTP)* in *Belleville*, Michigan.

(Check as appropriate)

Applicant for Operating License for Existing Facility:

☒ No waiver requested

☐ Waiver requested for one or more units for required equipment

☐ Waiver requested for one or more units for required aisle space

Applicant for Operating License for New, Altered, Enlarged, or Expanded Facility:

☐ No waiver requested
☐ Waiver requested for one or more units for required equipment

☐ Waiver requested for one or more units for required aisle space

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INTRODUCTION

Michigan Disposal Waste Treatment Plant (MDWTP) and Wayne Disposal Inc. (WDI) have been designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment in accordance with requirements outlined in R299.9606 and *40 CFR §264.31*.

Active hazardous wastes areas may only be accessed by authorized personnel familiar with personal protective equipment requirements. Individuals not authorized to be in the active areas must wear the appropriate personal protective equipment and be escorted by facility personnel.

Buildings and containment areas are constructed of materials that have a decreased combustibility potential and are all designed with sloped secondary containment structures. Containment structure volumes adequately contain 25 year, 24 hour storm and can appropriately manage the permitted storage volumes. Additionally, WDI operates a storm water management system capable of holding a 100 year storm. Waste received is evaluated utilizing pre-approval and waste screening procedures identified in Attachment A2 Chemical and Physical Waste Analysis Plan in order to minimize the possibility of a fire, explosion or release. Reactivity and ignitable characteristics are identified ensuring WDI does not accept prohibited waste and allowing MDWTP appropriately store and treat the waste

Unloading operations are completed in well maintained paved areas in order to ensure secure movement of containers. Persons in the off-loading area must be attentive to the location of mobile equipment such as arriving and departing hauling vehicles and landfill operations equipment. Off-site waste hauling vehicles do not drive onto the active disposal areas. They are permitted to off-load at a waste transfer ramp area at the edge of the hazardous waste cell. Dedicated equipment transfers the waste to the active area within the landfill. This procedure eliminates track-out of hazardous wastes onto site roads and public roadways. The transfer ramp is also lighted for safety as deemed necessary. Additionally, MDWTP's drum dock is equipped with a mechanical ramp that allows the forklift to safely remove containers from drum trailers. Tanks are equipped with overflow controls in order to prevent a release.

In order to prevent a potential release to the ground or atmosphere containers remain closed unless waste is being added or removed. Processing operations are immediately stopped if equipment failures or power outages may result in a potential release, fire or explosion. Additional controls include the following:

- Operation waste transport vehicle wheel wash
- Monitoring of wind speed and ceasing operations above specific thresholds.
- Wetting with water and/or sweeping paved access roads and parking lots at least once a day, weather permitting.
- Application of daily cover to the waste in the landfill to control dispersal of particulate matter. The cover used consists of ConCover-ProGuard IIB Plus, 15 cm of clean soil, or alternatives approved by the DEQ.
- Continued environmental monitoring as required by the facility operating license.

MDWTP's air pollution control devices prevent emissions to the atmosphere that may otherwise occur due to processing activities. The actions to be taken in an emergency, regardless of cause are outlined in the Site 2 (MDWTP/WDI) facility Contingency Plan.

A6.A REQUIRED EQUIPMENT
[R 299.9606 and 40 CFR §264.32]

MDWTP and WDI have been equipped with the following in accordance with R 299.9606 and 40 CFR §264.32:

1. An internal communications system (i.e. radio, phones) capable of providing immediate emergency instruction (voice) to facility personnel.
2. A landline and mobile telephone systems capable of summoning emergency assistance from local police departments, fire departments, or State or local emergency response teams.
3. Portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment.
4. Water at adequate volume and pressure to supply water hose streams.

Required personal protective equipment is available at the facility. All employees working in, visiting or for any other reason located within the active disposal area are required to wear protective clothing appropriate to the task they are performing and a respirator equipped with dual cartridges.

A6.A.1 INTERNAL COMMUNICATION SYSTEM
[R 299.9606 and 40 CFR §264.32(a)]

An internal communications system (radio, phone) capable of providing immediate emergency instruction (voice) to facility personnel is available.

A6.A.2 EMERGENCY RESPONSE COMMUNICATION SYSTEM
[R 299.9606 and 40 CFR §264.32(b)]

Telephone communication systems are available and capable of summoning emergency assistance from local police departments, fire departments, or State or local emergency response teams.

A6.A.3 FIRE, SPILL, AND DECONTAMINATION EQUIPMENT
[R 299.9606 and 40 CFR §264.32(c)]

Fire Extinguishers
Fire extinguishers are present at various locations of the site. Inspections are completed and documented in accordance with MIOSHA inspection requirements found in R 408.10835.

Fire Suppression
The MDWTP fire protection system consists of flame detection systems and fire suppression systems. Flame detectors are present in the North Container Storage Area (NCSA), East Container Storage Area (ECSA), and the East and West Waste Treatment Bays.

The East and West treatment tanks are equipped with a foam based fire suppression system that can be activated automatically and manually. A foam solution is sprayed until the solution is depleted, at which point water is used. The East Bay also has a water-based fire suppression system to protect the area in front of the treatment tanks. Once activated, both systems will continue to flow until they are manually turned off.

The flame detectors and fire suppression system are connected to the local alarm system. Activation of either system triggers a notification to facility personnel and a third party alarm company. Both systems are self-testing, and also provide notification to facility personnel and the alarm company in the event of a malfunction.

Spill Control and Decontamination Equipment
Spill control and decontamination equipment is placed at various locations of the site and are equipped with materials needed for the area, such as heavy equipment to remove solid waste spills and contaminated soil and to construct emergency containment; absorbent for liquid spills; visqueen with weights for blocking storm water catch basins.

A6.A.4 ADEQUATE WATER VOLUME
[R 299.9606 and 40 CFR §264.32(d)]

The municipal water supply provides adequate pressure and volume to operate the site's fire protection systems. Backflow preventers are utilized in order to prevent the contamination of the water supply.

A6.B TESTING AND MAINTENANCE OF EQUIPMENT
[R 299.9606 and 40 CFR §264.33]

Site 2 (MDWTP/WDI's) communications or alarm systems, fire protection equipment and spill control equipment, where required, are tested and maintained as necessary to assure its proper operation in time of emergency.

A6.C ACCESS TO COMMUNICATIONS OR ALARM SYSTEM
[R 299.9606 and 40 CFR §264.34]

A6.C.1 MULTIPLE EMPLOYEES PRESENT
[R 299.9606 and 40 CFR §264.34(a)]

While hazardous waste is being poured, mixed or otherwise processed, all personnel involved have immediate access to emergency communication, either through visual, voice contact, phone, or radio.

A6.C.2 SINGLE EMPLOYEE PRESENT
[R 299.9606 and 40 CFR §264.34(b)]

If only one employee is on the premises while hazardous waste is being poured, mixed or otherwise processed, they will have access to a telephone capable of summoning external emergency assistance and providing notification to internal resources.

A6.D REQUIRED AISLE SPACE
[R 299.9606 and 40 CFR §264.35]

Where containers are in storage aisle space will be maintained to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the operation in an emergency.

A6.E STATE AND LOCAL AURTHORITIES

[R 299.9606 and 40 CFR §264.37]

A6.E.1 ARRANGEMENTS WITH STATE AND LOCAL AUTHORITIES

[R 299.9606 and 40 CFR §264.37(a)(1)]

These arrangements are outlined in the Site 2 Contingency Plan.

A6.E.2 REFUSAL OF STATE OR LOCAL AUTHORITIES TO ENTER INTO EMERGENCY RESPONSE AGREEMENTS

[R 299.9606 and 40 CFR §264.37(b)]

Participation letters are mailed to all state and local authorities along with a copy of the Contingency Plan.

Wayne Disposal Inc.
2018 TSCA Permit Renewal

Attachment 12
Contingency Plan

CONTINGENCY PLAN

The administrative rules promulgated pursuant to Part 111, Hazardous Waste Management, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), R 299.9501, R 299.9508(1)(b), R 299.9504(1)(c), R 299.9521(3)(b), R 299.9607, and Title 40 of the Code of Federal Regulations (CFR) §§264.50 through 264.56, and 270.14(b)(7), establish requirements for contingency plans at hazardous waste management facilities. All references to 40 CFR citations specified herein are adopted by reference in R 299.11003.
This license application template addresses requirements for a contingency plan at the hazardous waste management facility for the Wayne Disposal Inc. (WDI) and Michigan Disposal Waste Treamtent Plant (MDWTP) in Belleville, Michigan.
(Check as appropriate)

☒ Applicant for Operating License for Existing Facility

☐ Applicant for Operating License for New, Altered, Enlarged, or Expanded Facility

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INTRODUCTION

This Contingency Plan has been prepared in accordance with the requirements of 40 CFR, Part 264, Subpart D, and R 299.9607. The information provided in this section serves as the actual Contingency Plan to be used by the facility. All sections of this template are completed with these functions in mind.

A7.A BACKGROUND INFORMATION

A7.A.1 PURPOSE OF THE CONTINGENCY PLAN
[R 299.9607 and 40 CFR §§264.51 and 264.53]

This Contingency Plan has been prepared in accordance with the requirements of 40 CFR, Part 264, Subpart D, and R 299.9607. It is designed to establish the necessary planned procedures to be followed in the event of an emergency situation at the Michigan Disposal Waste Treatment Plant and Wayne Disposal Inc. facility in Belleville, Michigan, such as a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to the air, soil, or water.

This RCRA Contingency Plan is a part of the overall effort at the facility to predict, prevent, and properly respond to incidents. This RCRA Contingency Plan satisfies RCRA requirements for responses to emergencies involving hazardous waste. The provisions of this plan will be carried out whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents that could threaten human health or the environment.

Copies of the Contingency Plan have been provided to emergency response agencies in order to familiarize them with the facility layout, the properties of the material handled, locations of the working areas, access routes into and within the facility, possible evacuation routes from the facility, and types of injuries or illness that could result from releases of materials at the facility. This information has been submitted to emergency response and regulatory agencies listed n A7.D.1.

A7.A.2 DESCRIPTION OF FACILITY OPERATIONS

Michigan Disposal Waste Treatment Plant (MDWTP)

The MDWTP operations include receiving, storage, and treatment of hazardous wastes permitted by the MDEQ under the facility operating license and the USEPA under a Resource Conservation and Recovery Act (RCRA) permit (MID 000 724 831).

The specific routine operations and work areas for MDWTP include:
- Waste receiving & quality control(QC)
- Waste loading/unloading
- Reagent unloading & tank storage
- Waste storage in tanks

- Waste treatment in tanks
- Container staging & storage and
- Shipment of waste off-site to permitted treatment, storage, and disposal facilities (TSDFs)

The requirements for operations in these areas are defined in and regulated by the facility operating license.

Waste Identification and Classification - MDWTP

The waste types acceptable for treatment and storage at the facility are defined in Part 111 of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451 (Act 451) and 40 CFR regulations at part 261. The waste types acceptable for treatment include listed, characteristic and non-hazardous waste as approved by the facility permit.

Description of Waste Management Units - MDWTP

The MDWTP facility is a liquid and solid hazardous & non-hazardous waste storage and treatment facility. Containerized wastes may be stored on-site before and after treatment in one of five hazardous waste storage areas: the North Container Storage Area (NCSA), the East Container Storage Area (ECSA), the Southeast Container Storage Area (SECSA) and the East and West Treatment Building Bays. The facility is equipped with pollution control systems for particulate, odor, and emission control.

Liquid hazardous wastes to be treated in the pozzolanic stabilization process may be stored in four, 20,000 gallon and vertical storage tanks (T-16 through T-19). Liquid reagents are stored in two, 15,000 gallon vertical tanks (T-25 and T-27). Hazardous Waste dust may be stored in three 100 cubic yard (cy) silos of the plant. Lime kiln flue dust, cement kiln flue dust, and lime are also used for stabilization and may be used in all six silos (T-1 through T-6). The dusts are conveyed from the silos to the treatment tank via a screw conveyor at a controlled rate to effect treatment of liquid and solid wastes. Other reagents, such as ferrous sulfate, may be added directly to the tanks in bag or bulk quantities.

Listed and characteristic hazardous wastes are stored and treated in tanks. Treatment consists of mixing and treating directly in the storage/treatment tanks. Other chemical reagents may be selectively added in drum or bulk quantities.

Containerized hazardous waste and non-hazardous wastes are staged and stored on concrete pads at the NCSA, ECSA, SECSA and the East and West Treatment Building Bays. Drainage trenches constructed within the containment areas contain and control liquid runoff. Drums are transported from the pad into the plant using a barrel forklift. They are opened carefully by removing the tops or bungs and emptying the contents with a vacuum truck or pouring contents directly into treatment tanks using the barrel forklift. The empty drums are placed into a roll-off box or other similar container for subsequent disposal or managed through the treatment tanks.

The disposal operations are supported and directed from the office/lab and waste receiving site located near the entrance to the facility. These support operations assist to control and evaluate shipments received for conformance with pre-approval information regarding the specific properties, treatment, and documentation requirements. The facility waste characterization and analysis records are maintained on-site.

Wayne Disposal, Inc. Site #2 (WDI)

The WDI operations include the landfill disposal of hazardous and non-hazardous wastes permitted by the MDEQ under the facility operating license USEPA under a Resource Conservation and Recovery Act (RCRA) permit (MID 048 090 633).

The specific routine operations and work areas for WDI include:

- Waste receiving and quality control
- Waste unloading
- Hazardous waste landfill and related appurtenances (piping, pumps, operation and maintenance, truck wheel wash buildings located within the area bounded by North Interstate 94 (I-94) Service Drive and Willow Run Airport)

The requirements for operations in the landfill is defined in and regulated by the Hazardous Waste Treatment, Storage and Disposal Facility operating license. Non-hazardous wastes are managed in accordance with the facility's Part 115 of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451 (Act 451). The WDI landfill is located at the same site as MDWTP treatment and storage facility (MID 000 724 831). WDI landfill disposal operations are supported by office/lab and waste receiving operations located near the entrance of the facility. These operations assist to control and evaluate shipments received for conformance with pre-approval information regarding the specific properties, treatment, and documentation requirements. The WDI facility waste characterization and analysis records are maintained.

Waste Identification and Classification - WDI

The waste types acceptable for disposal at the facility are defined in Parts 111 and 115 of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451 (Act 451) and 40 CFR Regulations at Part 261. Acceptable hazardous waste codes are identified in Section 8 of the Hazardous Waste Treatment, Storage and Disposal Facility Operating License.

The facility (WDI) license has specific restrictions regarding the following waste types NOT ACCEPTABLE for disposal:

- Ignitable wastes as described in Michigan Act 451 rule R 299.9212
- Reactive wastes as described in Michigan Act 451 rule R 299.9212
- Bulk or non-containerized liquid waste or waste containing free liquids
- Containers holding free liquids, including laboratory packs
- Wastes which are banned from landfilling by regulations promulgated under 40 Code of Federal Regulations (CFR) Part 268 unless the wastes meet the applicable Land Disposal Restriction (LDR) treatment standards or a variance has been obtained from the USEPA
- Waste which will:
    (1) Adversely affect the permeability of the clay liner.
    (2) Produce a leachate that is incompatible with the clay liner, leachate collection system piping, or the off-site sewer system.
    (3) Generate gases that will adversely affect the permeability of the clay cap or create a

violation of the air pollution control requirements of Part 55 of Act 451.

Description of Waste Management Units - WDI
The WDI facility includes an active permitted hazardous waste landfill with primary and secondary liner systems, a leachate collection and removal system, and a leak detection, collection and removal system. The landfill operations also include run-on, run-off, and contaminant control systems including a vehicle wash facility and other landfill-related equipment and support buildings.

A7.A.3 IDENTIFICATION OF POTENTIAL SITUATIONS

Potential situations that could occur based on the nature of the industry include fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to the air, soil, or water.

A7.B EMERGENCY COORDINATORS

[R 299.9607 and 40 CFR §§264.52 and 264.55]

A7.B.1 IDENTIFICATION OF PRIMARY AND ALTERNATE EMERGENCY COORDINATORS

[R 299.9607 and 40 CFR §§264.52 and 264.55]

At all times there is at least one employee, either on the facility premises or on call and within reasonable travel distance of the facility, with the responsibility for coordinating all emergency response measures. The list of employees designated as emergency coordinators is contained in Table A7.B.1. The coordinators are listed in the order in which they will assume responsibility.

A7.B.2 QUALIFICATIONS OF THE EMERGENCY COORDINATORS

[R 299.9607 and 40 CFR §264.55]

Emergency coordinators are management personnel knowledgeable and fully qualified for the responsibility of executing the Contingency Plan. Coordinators are familiar with the facility's operations and activities, and how these operations and activities are impacted by RCRA obligations.

Table A7.B.1 Identification of Primary and Alternate Emergency Coordinators

Michigan Disposal Waste Treatment Plant
49350 North I-94 Service Drive
Belleville, MI 48111

Priority	Name	[illegible]	[illegible]
Primary Coordinator	**Corey Grider**	**734-699-6213**	**734-576-0143**
Primary Coordinator	**Kerry Durnen**	**734-699-6265**	**734-576-0189**
Alternate Coordinator	**Jasen Campbell**	**734-699-6214**	**734-589-9653**
Alternate Coordinator	**Mike Rohde**	**734-699-6226**	**734-431-1005**

Wayne Disposal Inc.
49350 North I-94 Service Drive
Belleville, MI 48111

Priority	Name	[illegible]	[illegible]
Primary Coordinator	**Kerry Durnen**	**734-699-6265**	**734-576-0189**
Primary Coordinator	**Michael Porath**	**734-699-6239**	**734-576-0179**
Alternate Coordinator	**Ken Weber**	**734-699-6280**	**734-576-0153**

A7.B.3 AUTHORITY TO COMMIT RESOURCES
[R 299.9607 and 40 CFR §264.55]

The Emergency Coordinator is authorized to commit any necessary resources of the company that may be needed to carry out this Contingency Plan.

A7.C IMPLEMENTATION OF THE CONTINGENCY PLAN
[R 299.9607 and 40 CFR §§264.51, 264.52, and 264.56]

The primary emergency coordinator or an alternate must be contacted immediately upon discovering a situation that may result in potential or actual threats to human health or the environment. This plan will be implemented as necessary whenever there is a fire, explosion, or release of hazardous substances that could threaten human health or the environment. Spills and releases into secondary containment or contained on pavement are not considered a threat to human health and the environment and will not require the implementation of the Contingency Plan or notification to regulatory agencies.

The provisions of this plan will be partially or fully carried out whenever one of the following conditions occurs:

- Fire and/or explosion:
    - A fire involving hazardous waste or hazardous materials that could threaten human health or the environment.
    - The fire spreads and could possibly ignite materials at other locations on-site or could cause heat-induced explosions.
    - The fire could spread to areas outside the facility.
    - A danger exists that an explosion could occur.
    - A danger exists that an explosion could ignite other hazardous wastes at the facility.
    - A danger exists that an explosion could result in the release of toxic material.
    - An explosion has occurred.
    - Any fire or explosion requiring mobilization of the Van Buren Fire Department for emergency response.

- Spills or Material Release:
    - A spill that results in release of flammable liquids or vapors that could cause a fire or gas explosion hazard that could threaten human health or the environment.
    - A spill that results in the release of toxic liquids or fumes that could threaten human health or the environment.
    - A hazardous materials spill that cannot be contained inside the facility and that could threaten human health or the environment offsite.

A partial implementation is appropriate when the facility has the resources to address the situation without an off-site agency for emergency response.

A7.D EMERGENCY PROCEDURES

[R 299.9607 and 40 CFR §§264.51, 264.52, and 264.56]

The following general procedures have been established for implementation by facility personnel and the emergency coordinator in order to efficiently respond to the release of hazardous waste or hazardous waste constituents that could threaten human health or the environment. The facility's procedure for assessing offsite risk during and after a significant release is provided in Attachment A7.4.

All MDWTP and WDI personnel are instructed to respond, in case of emergency, as follows:

1. If any person has been seriously injured call 911 for EMT support.
2. Alert the shift supervisor or the emergency coordinator of the hazard(s).
3. If any persons in the immediate area are potentially endangered, advise them to leave immediately.
4. Contact the Emergency Coordinator(s) in person, by radio or phone
5. Indicate nature of emergency and stand by to receive instructions from Emergency Coordinator or evacuate.

6. Shut down, as necessary, all processing and ancillary equipment per manufacturer's instructions, associated with the incident.

The Emergency Coordinator will direct actions of all facility personnel to:

1. Identify hazards and assess extent of potential harm to human health or the environment.
2. Notify, as necessary, the appropriate Emergency Response Contacts listed in this Plan.
3. Respond in cooperation with outside agencies to minimize hazards.
4. Follow up response actions with required reports (verbal and written). This includes internal incident reports and providing information to regulatory staff to prepare the incident report(s).

A7.D.1 NOTIFICATION PROCEDURES FOR FACILITY PERSONNEL AND STATE AND LOCAL AGENCIES WITH DESIGNATED RESPONSE ROLES

[R 299.9607 and 40 CFR §§264.51, 264.52, and 264.56]

Facility personnel are notified of an emergency situation through communication tools such as in person, by radio, by phone or by alarm. The notification signals personnel to evacuate their location. Employees are informed if alternate evacuation routes must be utilized instead of their known primary evacuation route.

The list of emergency contacts in Table A7.D.1 identifies local emergency response agencies, and state and federal authorities that may be notified in the event of an imminent or actual emergency situation requiring their response.

The emergency coordinator will be responsible for ensuring that all appropriate authorities are notified as necessary by phone, in person, or by mail.

Table A7.D.1 Federal, State, and Local Response Contacts

Local Emergency Response	Address	Phone Number
*Van Buren Township Police Department	46425 Tyler Road Belleville, MI 48111	911 or 734-699-8930
*Van Buren Fire Department	46425 Tyler Road Belleville, MI 48111	911 or 734-699-8930
Huron Valley Ambulance (Emergency)	1200 State Circle Ann Arbor, MI 48108	734-994-4111
Local Emergency Planning Commission (LEPC)	10250 Middlebelt Road Detroit, MI 48242	734-942-3600
State Emergency Response		
DEQ Pollution Emergency Alert System		800-292-4706
Federal Emergency Response		

National Response Center	(800)292-4705

Local Notification	**Agency**	**Phone Number**
Director of Planning and Economic Development	Van Buren Township	800-292-4706

State Notification		**Phone Number**
Michigan Disposal OWMRP-Lansing	MDEQ	517-284-6574
Wayne Disposal OWMRP-Lansing	MDEQ	517-284-6568
OWMRP District	MDEQ	586-753-3839
AQD District	MDEQ	313-456-4680

Federal Notification	**Phone Number**
USEPA Region V	312-886-7890

*Notification to Local Emergency Planning Committee (LEPC)

Injury or Harm to Human Health

1. Van Buren Fire Department (They will dispatch Huron Valley Ambulance)
2. Determine what medical facility Huron Valley Ambulance will transport individuals to.
3. Assist the appropriate officials with necessary information needed to inform the medical facility of the situation including precautions taken to transport individual(s).

If the Emergency Coordinator determines the facility has had a release, fire, or explosion which could threaten human health or the environment outside the facility, such findings will be reported in accordance with Rule 607 as follows:

Fire or Explosion

4. Van Buren Fire Department
    - Assist the appropriate officials in deciding the following
        - Need for other response agency involvement
        - Evacuation is necessary. If so the extent of the evacuation. (According to R 299.9607 and 40 CFR 264.56(d), the decision making authority to evacuate the local areas belongs to the appropriate local authorities based on facility's evaluation of the release.)
5. National Response Center if extremely hazardous substance or hazardous substance or constituent in a mixture that could threaten human health or the environment.
6. DEQ Office of Waste Management and Radiological Protection (OWMRP). If DEQ authorities cannot be reached contact Pollution Emergency Alert System.
7. DEQ Air Quality Division (AQD) if exceeding hazardous air pollutant or toxic air contaminant emissions, as soon as possible, but no later than 2 business days.

Spill or Release Off-Site

Hazardous Substance Released Off Site Could Threaten Human Health and the Environment

1. National Response Center (NRC will send a report to LEPC, as well as the DEQ)
2. Van Buren Fire Department and/or Van Buren Police Department
3. DEQ Office of Waste Management and Radiological Protect (OWMRP). If DEQ authorities cannot be reached contact Pollution Emergency Alert System.
4. If the offsite portion of the release exceeds 10 lbs. of a substance containing PCBs at a concentration ≥50ppm, contact EPA Region V TSCA as soon as possible, but no later than 24 hours.

If it is determined the facility has had an onsite release, which could threaten human health or the environment such findings will be reported as follows:

Spill or Release On-Site

Hazardous Substance Released Onsite and Could Threaten Human Health and the Environment

1. DEQ Office of Waste Management and Radiological Protect (OWMRP). If DEQ authorities cannot be reached contact Pollution Emergency Alert System.

If the Emergency Coordinator determines the facility has had a release inside the facility, they will report such findings and act as defined in A7.D.2 through A7.D.8.

A7.D.2 PROCEDURES TO BE USED FOR IDENTIFICATION OF RELEASES

[R 299.9607 and 40 CFR §§264.51, 264.52, and 264.56]

The Emergency Coordinator will identify the character, source, amount and extent of any released materials. They may do this by observation and/or review of the facility records or manifests, and if necessary, by chemical analysis.

A7.D.3 PROCEDURES TO BE USED TO ASSESS POTENTIAL HAZARDS TO HUMAN HEALTH AND THE ENVIRONMENT

[R 299.9607 and 40 CFR §§264.51, 264.52, and 264.56]

The Emergency Coordinator must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat-induced explosions), and will be based on the following criteria:

- The character of the released material(s)
- The exact source of the released material(s)
- The amount of the released material(s)
- A determination of the areal extent of the released material(s)
- An assessment of the possible hazards to human health and the environment

A7.D.4 PROCEDURES TO DETERMINE IF EVACUATION IS NECESSARY AND NOTIFICATION

of Michigan Pollution Emergency Alerting System and the National Response Center

[R 299.9607 and 40 CFR §§264.51, 264.52, and 264.56]

If the emergency coordinator's assessment indicates that evacuation of facility areas may be advisable, they will implement the evacuation plan for the facility. Isolation distances and evacuation requirements are dependent on the nature and magnitude of the spill. The evacuation point will be communicated to all on-site personnel, and entrance to the facility will be limited. The facility's evacuation plan is included in this Contingency Plan as Attachment A7.2.

If their assessment indicates that evacuation of the surrounding local areas is also advisable, the appropriate local authorities will be notified (see Table A7.D.1). The emergency coordinator will be available to help appropriate officials decide whether local areas should be evacuated. The National Response Center and the DEQ's Pollution Emergency Alerting System (PEAS) will also be notified (see Table A7.D.1), and the following information will be provided:

1. Name and telephone number of the reporting individual
2. Name and address of the facility
3. Time and type of incident
4. Type and quantity of materials involved
5. Possible hazards to human health or the environment
6. Extent of injuries, if applicable

A7.D.5 Procedures to Be Used to Ensure that Fires, Explosions, and Releases Do Not Occur, Reoccur, or Spread During the Emergency

[R 299.9607 and 40 CFR §§264.51, 264.52, and 264.56(e), 264.227, and 264.200]

Whenever there is an imminent or actual emergency situation where the potential or actual release of hazardous waste or hazardous waste constituents may threaten human health or the environment, the facility will implement the following procedures: stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

During an emergency, the Emergency Coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. Actions that may be employed where applicable: stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

Attachment A7.3 is a detailed description of all emergency equipment at the MDWTP/WDI facility.

A7.D.6 Procedures to Be Used to Monitor Equipment Should Facility Operations Cease

[R 299.9607 and 40 CFR §§264.51, 264.52, and 264.56(f)]

If the facility stops operations in response to a fire, explosion, or release, the Emergency Coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes or other equipment, whenever this is appropriate.

A7.D.7 Procedures to Provide Proper Treatment, Storage, and Disposal for Any Released Materials

[R 299.9607 and 40 CFR §§264.51, 264.52, and 264.56(g)]

After an emergency, staff will ensure proper treatment, storage and disposal of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.

A7.D.8 Procedures for Cleanup and Decontamination

[R 299.9607 and 40 CFR §§264.51, 264.52, and 264.56(h)]

MDWTP/WDI will implement the necessary cleanup efforts. The following steps will be taken to minimize the impact of the release and clean up impacted material:

1. Isolate the area of the release to prevent contact with unnecessary personnel and prevent migration of the release.
2. Determine the characteristics of the spilled waste for any special handling requirements.
    - If flammable materials are involved, possible sources of ignition will be eliminated in order to prevent fire risk.
3. If feasible and safe, stop the release at the source.
4. Determine the extent of the release including any subsurface exposure.
5. Remove any available spilled waste.
6. Decontaminate impacted non-disposable surfaces and equipment.
7. Properly contain, label, characterize, and dispose of waste generated from remedial activities.
8. Where soil has been contacted by a spill, collect and analyze samples to verify impacted soil has been removed.

A7.E RESUMPTION OF OPERATIONS AND RECORD KEEPING REQUIREMENTS

[R 299.9607 and 40 CFR §§264.51, 264.52, and 264.56(h) and (i)]

The following subsections identify procedures that must be followed to meet the notification and record keeping requirements.

A7.E.1 Procedures to Be Used Prior to Resuming Operations

[R 299.9607 and 40 CFR §§264.51, 264.52, and 264.56(h)]

Prior to resuming operations in the affected area(s), MDWTP/WDI will inspect all emergency equipment to ensure that the proper cleanup procedures have been implemented and all equipment has been cleaned and is fit for its intended use.

The emergency coordinator must ensure that, in the affected area(s) of the facility:

- No waste that may be incompatible with the released material is treated, stored, or disposed of in the area until cleanup procedures are completed.
- All emergency equipment listed in the contingency plan that must be decontaminated is cleaned and fit for its intended use before operations are resumed in the affected area(s) of the facility.

Notification must be given to the Regional Administrator, and appropriate state and local authorities, that the facility has taken the necessary steps to prevent and prepare for future incidents (as described in 40 CFR 264.56(h)) before operations are resumed in the affected area(s) of the facility.

A7.E.2 RECORD KEEPING REQUIREMENTS
[R 299.9607 and 40 CFR §§264.51, 264.52, and 264.56(i)]

A7.E.2(a) Operating Record

In the event of an emergency situation that requires implementation of the Contingency Plan, the emergency coordinator will record in the operating record the time, date, and description of the event. The operating record is maintained by *MDWTP/WDI* and can be found at the following location: *49350 North I-94 Service Drive, Belleville, MI 48111*

A7.E(2)(b) Written Incident Report

Within 15 days of an incident requiring implementation of the Contingency Plan, the *MDWTP/ WDI* will submit a written incident report to the DEQ at the following address:

Chief of the Office of Waste Management and Radiological Protection
Department of Environmental Quality
P.O. Box 30241
Lansing, MI 48909

The report will contain the following information:

1. Name, address, telephone number, and site identification number of the facility and the owner/operator.
2. Date, time, and type of incident.
3. Type and quantity of materials involved.
4. Assessment of actual or potential hazards to human health and the environment.
5. Extent of injuries, if applicable.
6. Estimated quantity and disposition of recovered materials that resulted from the incident.

A7.F PROCEDURE FOR ASSESSING OFFSITE RISK DURING AND AFTER A FIRE/EXPLOSION INCIDENT OR SIGNIFICANT RELEASE

[R 299.9521(3)(b) and R 299.9607 and 40 CFR §264.56(d)]

Off-site risk in the event of a significant release of hazardous waste from fire, explosion or other similar incidents shall be evaluated in accordance with OWMRP-111-25

A checklist is provided in section A.7.4

Corrective Action

Corrective actions will be performed based on results of information gathered in previous steps in accordance with Part [[redacted]], Corrective Action Information, of this license.

A checklist is provided for in Attachment A7.4.

Any of the actions incorporated into this procedure are to be performed by MDWTP/WDI personnel to the extent possible. However, much of the offsite sampling and monitoring will, in all likelihood, have to be performed by a duly authorized governmental agency as such activities can present legal barriers to Michigan Disposal Waste Treatment Plant and Wayne Disposal Inc.

A7.G PROCEDURES FOR REVIEWING AND AMENDING THE CONTINGENCY PLAN

[R 299.9607 and 40 CFR §264.54]

The contingency plan must be reviewed and amended, if necessary, whenever:

a. The plan fails in an emergency;
b. The facility changes - in its design, construction, operation, maintenance, or other circumstances - in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
c. The list of Emergency Coordinators changes; or
d. The list of emergency equipment changes.

Whenever the Contingency Plan is modified, the Emergency Coordinator(s) must provide the emergency response agencies with a copy of the modified plan. Send these copies with a letter of transmittal, by certified mail, with instructions to destroy all previous copies.

Attachment A7.1 Documentation of Arrangements with Local Authorities

The following are arrangements agreed to by local fire departments, police, hospitals, contractors, state and local emergency response teams to coordinate emergency services.

1) The Primary emergency authority of the local police and fire department is set forth by state and local law or ordinance. The Van Buren Fire Department is deemed the primary emergency contact for situations related to this site's operations. The Van Buren Fire Department will contact other emergency contacts at their discretion. Any others providing support to the primary emergency authority will follow the direction of the local police and fire departments.

2) US Ecology works with the Van Buren Fire Department to maintain familiarity with facility layout and operations for emergency response purposes.

3) All necessary support by emergency response teams, emergency response contractors, and equipment suppliers has been documented in this plan.

4) Information to familiarize hospital staff with the properties of wastes involved in an injury, incident, or illness resulting from fires, explosions, or releases will be provided at the time of response to an incident. Huron Valley Ambulance will designate the hospital equipped to manage the emergency.

No state or local authorities have declined to enter into such arrangements; if such refusal occurs it would be documented.

Attachment A7.2 Evacuation Plan, Routes, and Maps

Evacuation Procedures

If any employee encounters an emergency situation which they believe to present an imminent threat to human health or the environment, the individual employee is authorized to leave the area immediately and tell others to leave the area immediately.

The attached maps indicate the evacuation routes to the rally points. Primary evacuation routes vary depending on the department's location. It is the responsibility of the department supervisors to inform employees of these evacuation routes and ensure all employees meet at the appropriate rally point in the event of an incident. Alternate evacuation routes may be used because of wind direction or the location of the incident. Supervisors will inform the EC if an alternate evacuation route must be used. The EC will communicate if the conditions of the incident prohibit the alternate route.

Evacuation Routes:

1. Denton Road to the service drive and congregate at that point.
2. Main facility gate to service drive and congregate adjacent to the entrance.
3. East secondary gates to the truck holding lot.

Upon learning of an evacuation notice, the following will occur:

1. All employees, contractors and visitors will evacuate in an orderly and safe manner to the designated rally point.
2. If it is safe to do so, each work area will be checked by the area supervisor or designee to ensure everyone has left the area, including contractors and visitors.
3. Department supervisors will conduct a head count and report any missing persons and their suspected locations, if known, to the EC.
4. Based on the situation, the Emergency Coordinator will decide whether to conduct search and rescue using internal personnel or wait for assistance from outside emergency responders.

Employees should not leave their rally point until instructed to do so by the EC, or until a general all clear signal has been communicated

Attachment A7.3 Emergency Equipment Description

Department managers along with the EHS staff are responsible for determining the appropriate emergency equipment for the area and ensuring supplies are maintained. Locations of emergency and decontamination equipment are shown in evacuation figures provided in A7.2.

The following equipment may be included depending on the needs of the area:

- **Fire suppression system**

  The MDWTP fire protection system consists of flame detection systems and fire suppression systems. Flame detectors are present in the North Container Storage Area (NCSA), East Container Storage Area (ECSA), and the East and West Waste Treatment Bays.

  The East and West treatment tanks are equipped with a foam based fire suppression system that can be activated automatically and manually. A foam solution is sprayed until the solution is depleted, at which point water is used. The East Bay also has a water-based fire suppression system to protect the area in front of the treatment tanks. Once activated, both systems will continue to flow until they are manually turned off.

  The flame detectors and fire suppression system are connected to the local alarm system. Activation of either system triggers a notification to facility personnel and a third party alarm company. Both systems are self-testing, and also provide notification to facility personnel and the alarm company in the event of a malfunction.

- **Fire extinguisher**

  Type B/C dry chemical fire extinguishers are present at various locations of the site and are intend to incipient fires that may occur.

- **Fire hydrant**

  Fire hydrants are located at various locations in order to provide the fire department with a connection to a water supply.

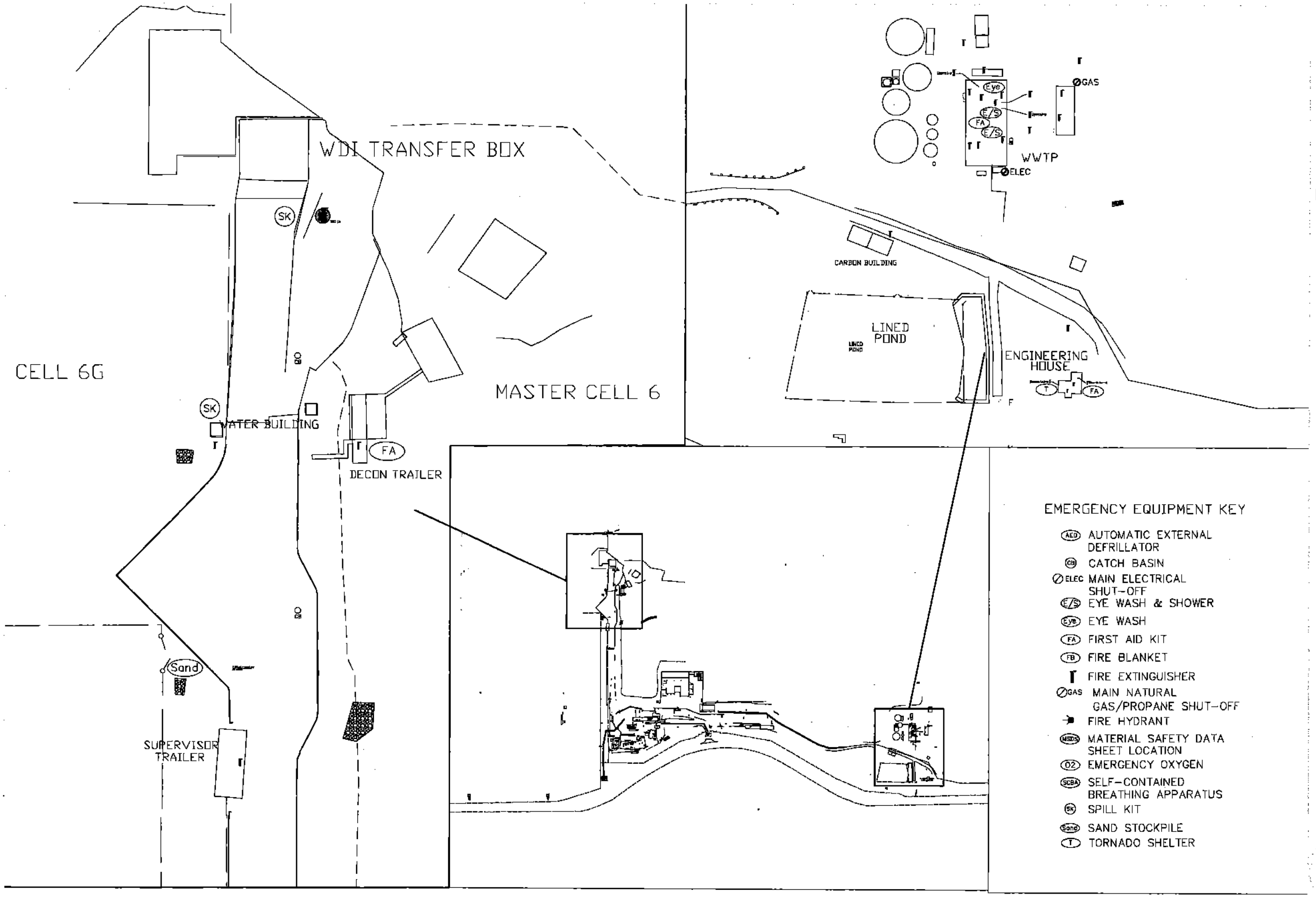
- **Spill Kit**

  Spill control and decontamination equipment is placed at various locations of the site and are equipped with materials needed for the area, such as heavy equipment to remove solid waste spills and contaminated soil and to construct emergency containment; absorbent for liquid spills; visqueen with weights for blocking storm water catch basins.

Attachment A7.4 Response Actions Checklist

Contingency Plan Activation of Off-Site Release Checklist

Record Incident	
	Time the incident began, duration, and location of the event.
	Employees/witnesses having direct involvement or direct knowledge of the incident.
	Gather local meteorological data and any characteristics noted by personnel directly involved with the incident or recorded elsewhere.
	Extent of injuries if any
Event Narrative	
	Sequence of events and time line leading up to and throughout the incident
	Identify specific event locations, materials, and equipment involved in the incident.
	Identify and characterize, to the extent possible, the size and scope of the event.
	Identify efforts taken to reduce the extent of the release
	Identify clean-up efforts
Materials or Substances Involved	
	Identify all of the materials/substances that may have been involved in the event.
	Determine the volume, concentration, and weight of substances identified above, and determine how they may have been altered by the event.
	Develop a list of constituents that may be a potential concern
OWMRP Notification	
	Within 24 hours of discovering an incident requiring implementation of the Contingency Plan provide verbal notification
	Within 15 days of an incident requiring implementation of the Contingency Plan provide written notification summarizing information above
Post Incident Sampling	
	Develop a sampling plan, as appropriate. The plan may take into account fallout density, air monitoring data, visual observation, or air modeling. A statistical sampling design may not be necessary for the screening evaluation. Post incident, off site sampling may not be necessary based on air monitoring data and lack of off-site migration or deposition.
	Collect a sufficient number of samples to identify and characterize concentrations of substances involved in the incident. Include sampling for background concentrations.
	Complete the analysis of collected samples and review by comparison to relevant screening levels. Screening levels may have to be developed for some chemicals or environmental media.
	Identify and document any substances found to be present at levels that exceed screening levels.
Evaluate Data for Screening Potential Risk	
	Screen existing data against relevant screening levels.
	Prepare risk assessment screening report if appropriate.
	If less than screening levels, no further action is needed for off-site potential releases upon approval of the OWMRP.

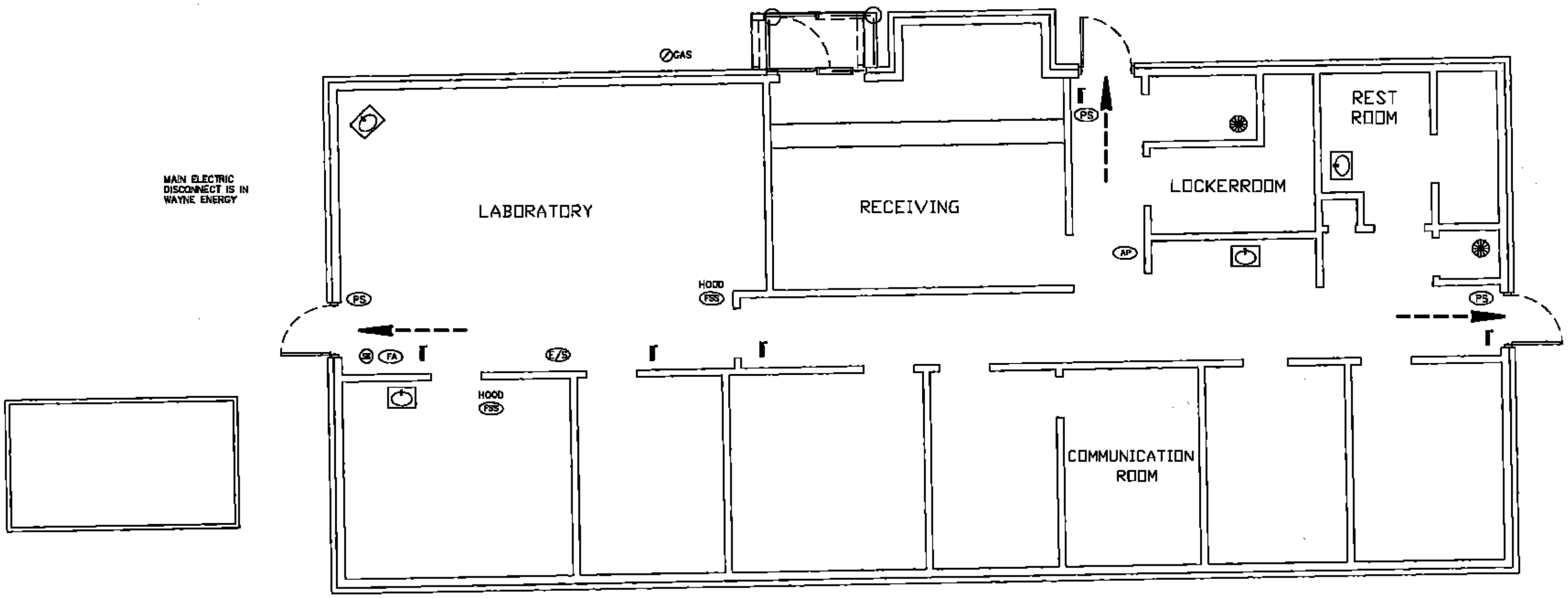


EMERGENCY EQUIPMENT KEY

- (AED) AUTOMATIC EXTERNAL DEFRILLATOR
- (CB) CATCH BASIN
- ⊘ELEC MAIN ELECTRICAL SHUT-OFF
- (E/S) EYE WASH & SHOWER
- (Eye) EYE WASH
- (FA) FIRST AID KIT
- (FB) FIRE BLANKET
- FIRE EXTINGUISHER
- ⊘GAS MAIN NATURAL GAS/PROPANE SHUT-OFF
- FIRE HYDRANT
- (MSDS) MATERIAL SAFETY DATA SHEET LOCATION
- (O2) EMERGENCY OXYGEN
- (SCBA) SELF-CONTAINED BREATHING APPARATUS
- (SK) SPILL KIT
- (Sand) SAND STOCKPILE
- (T) TORNADO SHELTER

USI MICHIGAN
WDI TRANSFER BOX/ WASTE WATER TREAT PLANT
EMERGENCY EQUIPMENT MAP

MAIN ELECTRIC DISCONNECT IS IN WAYNE ENERGY



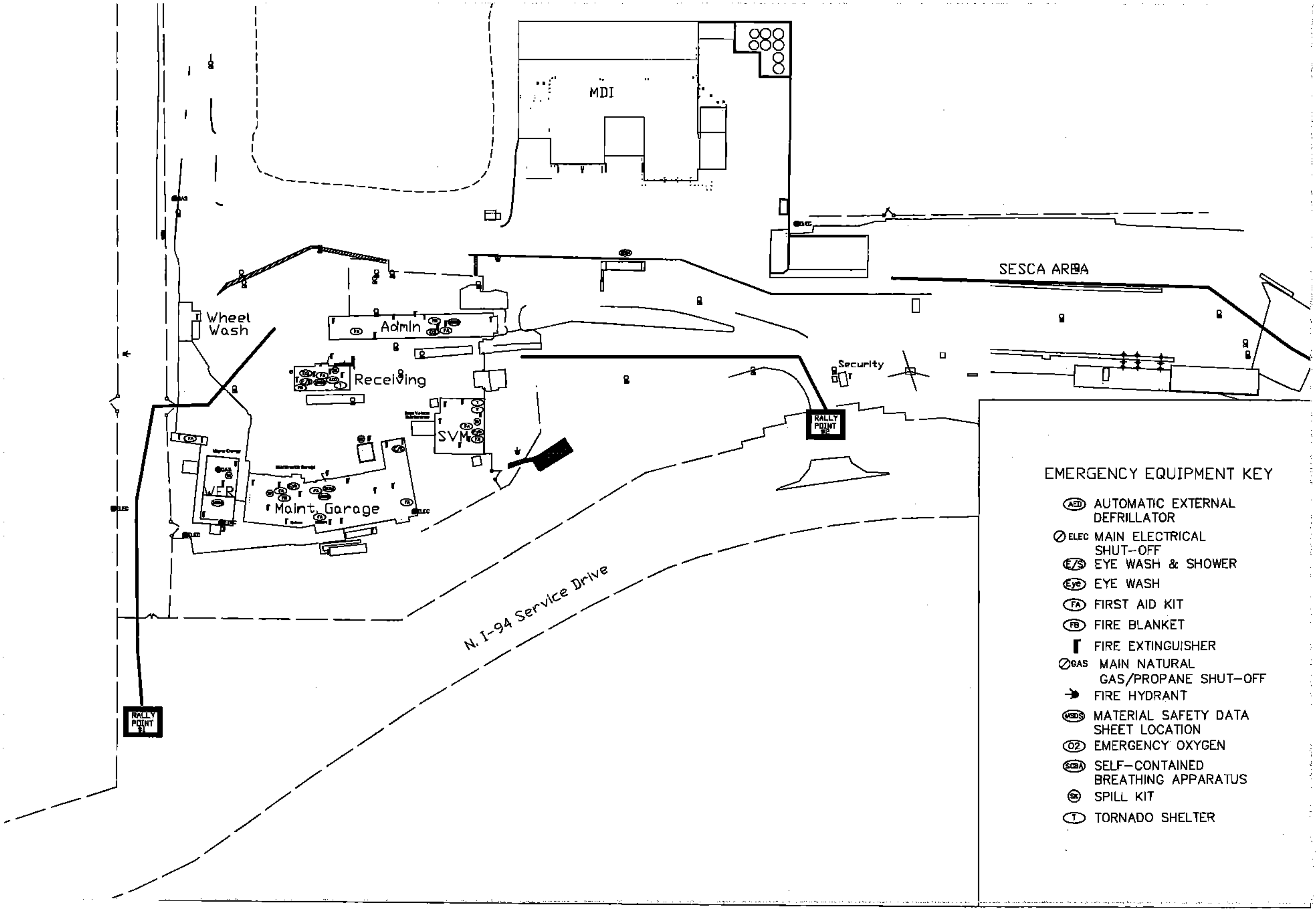
EMERGENCY EQUIPMENT KEY

ELEC	MAIN ELECTRICAL SHUT-OFF
E/S	EYE WASH & SHOWER
FA	FIRST AID KIT
Ⓣ	FIRE EXTINGUISHER
AP	FIRE ALARM PANEL
FSS	MANUAL FIRE SYSTEM ACTIVATION
⊘GAS	MAIN NATURAL GAS/PROPANE SHUT-OFF
MSDS	MATERIAL SAFETY DATA SHEET LOCATION
SK	SPILL KIT
▬ ▬	EVACUATION ROUTE
❋	FLOOR SINK
☐	SINKS
PS	FIRE ALARM PULL STATIONS

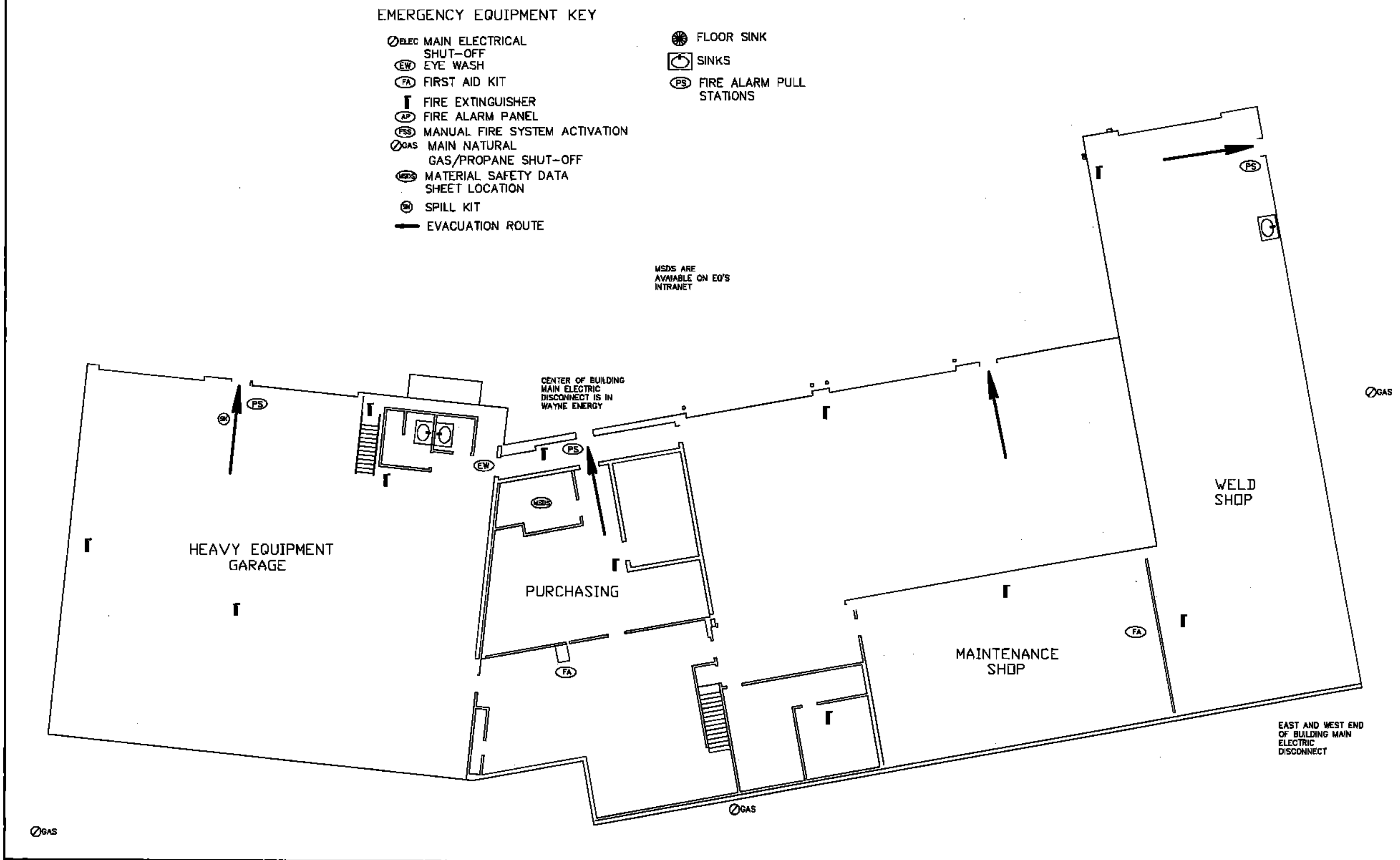
MSDS ARE AVAIABLE ON EQ'S INTRANET

THE ENVIRONMENTAL QUALITY COMPANY

SITE 2
RECEIVING BUILDING
EMERGENCY EQUIPMENT LOCATION



USE MICHIGAN
OPERATIONS AREA
EMERGENCY EQUIPMENT MAP



THE ENVIRONMENTAL QUALITY COMPANY

REVISIONS
A
B
C
D
E

FILENAME:
SCALE: N.T.S.
DRN BY: CAG
PROJ. FILE
DATE: 8/18/11
SHEET ___ OF ___

SITE 2
MAINTENANCE GARAGE
EMERGENCY EQUIPMENT LOCATIONS

1

Wayne Disposal Inc.
2018 TSCA Permit Renewal

Attachment 13
Chemical and Physical Waste Analysis Plan (WAP)

CHEMICAL AND PHYSICALWASTE ANALYSIS PLAN (WAP)

The administrative rules promulgated pursuant to Part 111, Hazardous Waste Management, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), being R 299.9504, R 299.9508, and R 299.9605, and Title 40 of the Code of Federal Regulations (CFR) §§264.13(a), (b), and (c) as well as §§270.14(b)(2) and (3) establish requirements for chemical and physical analyses and WAPs at hazardous waste management facilities. All references to the 40 CFR citations specified herein are adopted by reference in R 299.11003

This license application addresses requirements for chemical and physical WAPs at the hazardous waste management facility for the Michigan Disposal Waste Treatment Plant (MDWTP) and Wayne Disposal Inc. (WDI) in Belleville, Michigan. The information included demonstrates how the facility meets the chemical and physical analyses requirements for hazardous waste management facilities. All activities associated with the WAP will be conducted at the MDWTP and WDI, Belleville facility unless otherwise specified.

Type of applicant: *(Check as appropriate)*

☒ Applicant for Operating License for Existing Facility

☐ Applicant for Operating License for New, Altered, Enlarged, or Expanded Facility

Type of Facility: *(Check as appropriate)*

☒ On-site Facility (generates hazardous waste)

☒ Off-site Facility (accepts hazardous waste from other generators)

Type of Units to be Constructed or Operated at the Facility: *(Check as appropriate)*

☒ Containers

☒ Tank(s)

☐ Waste Pile(s)

☒ Landfilled Waste

☐ Waste Incineration

☐ Land Treatment

☐ Miscellaneous Unit(s)

☐ Boilers and Industrial Furnaces

Ensure that all samples collected for the purposes of waste characterization are collected, transported, analyzed, stored, and disposed by trained and qualified individuals in accordance with the Quality Assurance/Quality Control (QA/QC) Plan. The QA/QC Plan should, at a minimum, include the written procedures outlined in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. Environmental Protection Agency (EPA) Publication No. SW-846, Third Edition, Chapter 1 (November 1986), and its updates.

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A2 INTRODUCTION

Michigan Disposal Waste Treatment Plant (MDWTP) and *Wayne Disposal Inc. (WDI)* are commercial facilities that receive wastes generated from off-site locations. *MDWTP and WDI* have developed this shared chemical and physical waste analysis plans to ensure that only wastes that are authorized and properly characterized are received at the facility. Pre-approval, pre-acceptance, acceptance, treatment and post-treatment evaluations are completed by qualified personnel. All onsite and offsite generated waste will be evaluated through the procedures outlined in this plan.

All analysis performed pursuant to this WAP will be consistent with the QA/QC Plan maintained at the facility. All samples of the facility's waste being characterized will be collected, transported, stored, and disposed by trained and qualified individuals in accordance with the QA/QC Plan.

The parameters selected for analysis of wastes managed by the facility and the rationale for their selection is based on the physical/chemical characteristics of the waste, the regulatory and operating license requirements for treatment and/or storage of the waste at MDWTP or disposal at WDI, the information and analytical data supplied to the facility by the waste generator and the process control data necessary to manage the waste by the MDWTP's treatment and/or storage operations or disposal at WDI.

In accordance with R 299.9609 and 40 CFR §264.73 and Part 264, Appendix I, *MDWTP and WDI* will retain all records and results of waste determinations performed as specified in 40 CFR §§264.13, 264.17, 264.314, 264.1034, 24.1063, 264.1083, 268.4(a), and 268.7 in the facility operating record until closure of the facility.

A2.A PRE-APPROVAL

[R 299.9504(1)(c) and 40 CFR §270.14(b)(2)]

A2.A.1 WASTE TYPE DESCRIPTION

(GENERATED ON-SITE WASTES AND OFF-SITE WASTES THAT MAY BE RECEIVED)

[R 299.9504(1)(c) and 40 CFR §270.14(b)(2)]

A2.A.1(a) Acceptable Waste Type Description

The waste types that may be generated onsite or received from offsite generators and are acceptable for treatment and/or storage at MDWTP or disposal at WDI are defined in Appendix A and B. In addition to hazardous waste, nonhazardous waste may be accepted for treatment, storage and disposal at the facilities.

Characteristic waste codes that may be approved into MDWTP or WDI are provided in Appendix A. Analytical concentrations exceeding characteristically hazardous levels are required to be characterized with the appropriate waste code. Waste exceeding applicable land disposal restrictions will be approved for treatment at MDWTP or transshipment to an off-site location for further treatment. Waste meeting applicable LDRs will be approved for land disposal at WDI or an off-site Subtitle D landfill.

Generator process knowledge strongly contributes to the documentation of the applicability of a listed waste code. Analytical concentrations exceeding applicable land disposal restrictions be approved for treatment MDWTP or be transshipped to an off-site location for further treatment. Waste meeting applicable LDRs may be disposed of at WDI, but will carry the waste code through to disposal. Listed waste codes that may be delisted through treatment will be treated to the appropriate standard and may be disposed of at WDI or send to an off-site Subtitle D landfill.

Generator process knowledge, analysis, and/or information provided on the waste characterization form will be used to demonstrate waste mixtures and wastes with multiple codes are properly characterized. Each waste that has more than one characteristic will be identified with a number for each characteristic. Waste identified as meeting a listing and exhibiting a characteristic will be identified with the listed waste code for the purpose of manifesting, etc.

The laboratory packs accepted at the facility are not land disposed without meeting applicable Subpart D treatment standards. Lab pack waste received or generated with an LDR requesting lab pack alternatives to Subpart D treatment standards, will be transshipped offsite for incineration in accordance with 268.42(c). Lab packs received with the appropriate LDR designation indicating the compliance status of Subpart D treatment standards may be received and processed to applicable 268.40 treatment standards.

Hazardous debris accepted at the facility will be treated using one of the technologies identified in Table 1 of 40 CFR §268.45. Debris as defined in 40 CFR 260.10 may be treated at MDWTP prior to land disposal at WDI or an alternate Subtitle C landfill utilizing the immobilization technologies defined in 40 CFR 268.45 in order to meet the alternative treatment standards for hazardous debris provided in 40 CFR 268.45.

Rule 299.9228 establishes an alternate set of standards under which universal wastes may be managed instead of full regulation as hazardous waste under these rules. Waste that meets the criteria established by the rule may be transshipped from the facility for recycling or disposed of in accordance with the requirements of the rule.

Any time MDWTP treats, stores, or disposes of ignitable or reactive wastes, or mixes incompatible wastes, the facility will take precautions to prevent reactions which:

- Generate extreme heat or pressure, fire or explosions, or violent reactions
- Produce uncontrolled toxic mists, fumes or gasses in sufficient quantities to threaten human health or environment
- Produce uncontrolled flammable fumes or gasses in sufficient quantities to threaten human health or environment;
- Damage the structural integrity of the device or facility
- Through other means threaten human health or environment.

A2.A.1(b) Restricted Waste Type Description

The following waste streams are restricted at MDWTP:

- The facility does not accept low level radioactive mixed waste. MDWTP and WDI do not accept low level radioactive mixed waste. See Appendix B Radiological Waste Acceptance Criteria
- Ignitable wastes with a flashpoint <90F may be stored but may not be treated.
- Reactive wastes (D003, K027, K044, K047, K161, and K045):
  - Wastes identified in R299.9212 (3)(a, f, g, h) may not be stored or treated.
  - Wastes identified in R299.9212 (3)(b, c, d) may be stored only in the NCSA and transshipped for off-site treatment.
  - Wastes identified in R299.9212 (3)(e) may be stored in any permitted container storage area.
  - D003 deactivated (no longer exhibits the characteristic of reactivity) and wastes identified in R299.9212 (3)(e) as sulfide bearing wastes may be received for storage and treatment.
- Dioxin-containing waste requiring treatment for F020-F023, F026-F028, K043, and K099 may be stored or treated for constituents other than dioxins.

In addition, following waste types are **NOT ACCEPTABLE** for disposal at WDI:

- Waste prohibited from land disposal as defined by 40 CFR 268, Subpart C, will not be disposed of at WDI.
- Ignitable wastes as described in R299.9212(1);
- Reactive wastes as described in R299.9212(3) unless the waste no longer exhibits the characteristic of reactivity;
- Bulk or non-containerized liquid waste or waste containing free liquids;
- Containers holding free liquids, including laboratory packs;
- Wastes which will:
    - Adversely affect the permeability of the clay liner;
    - Produce a leachate that is incompatible with the synthetic liner, leachate collection system (LCS), discharge piping, and the off-site sewer system;
    - Generate gases which will adversely affect the permeability of the clay cap; and
    - Create a violation of 1975 PA 348 and rules promulgated thereunder

Wastes which are banned from landfilling by regulations promulgated under 40 Code of Federal Regulations (CFR) Part 268 unless the wastes meet the applicable Land Disposal Restriction (LDR) treatment standards or a variance has been obtained from the administrator. The following variances have been approved:

- May 23, 2016 Guardian Industries Corporation (MID 048 784 896) Air Pollution Control Dust

A2.A.1(c) Onsite Generated Waste

Housekeeping, maintenance, laboratory and waste processing activities may result in the on-site generation of waste at the facility and may include any of the acceptable wastes listed in the appendix. Waste generated at the facility is evaluated in the same manner as off-site waste utilizing procedures provided in the sections to come. Laboratory reports and waste characterizations are maintained at the facility as part of the operating record. Hazardous waste generated at the facility is also reported to the DEQ as part of the facility operating report in accordance with Rule 610(3).

All samples collected for the purposes of on-site waste characterization are collected, analyzed, stored, and disposed of by trained and qualified individuals in accordance with the Quality Assurance/Quality Control (QA/QC) Plan. The QA/QC Plan includes written procedures outlined in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," U.S. Environmental Protection Agency (EPA) Publication SW-846 Compendium.

A2.A.2 PRE-APPROVAL WASTE CHARACTERIZATION REQUIREMENTS
[R 299.9605(1) and R 299.9504(1)(c) and 40 CFR §264.13(b)(5)]

The initial step of the waste stream approval process is a review of the waste characterization as prepared by the generator. A person who generates a solid waste, as defined in 40 CFR 261.2, must make an accurate determination as to whether that waste is a hazardous waste in order to ensure wastes are properly managed according to applicable RCRA regulations. To aid generators in complying with the requirement and ensure the TSDF obtains chemical and physical information from the generators, MDI and WDI require the submittal of waste characterization information. In accordance with the requirements set forth by 40 CFR 262.11, *MDWTP and WDI* will require the following waste profile information for initial waste shipments from all off-site generators and onsite generated waste prior to processing the waste:

- Generator information
    - Generator Name
    - EPA ID Number

  - Address
  - Phone Number
- Waste Description
  - A hazardous waste determination for each solid waste at the point of waste generation, before any dilution, mixing, or other alteration of the waste occurs, and at any time in the course of its management that it has, or may have, changed its properties as a result of exposure to the environment or other factors that may change the properties of the waste such that the RCRA classification of the waste may change.
  - A determination on the applicability of listed hazardous waste codes using knowledge of the waste to determine whether the waste meets descriptions under subpart D of 40 CFR part 261.
  - A determination on whether the waste exhibits one or more hazardous characteristics
- Identification of Exclusions and Exemptions
  - Materials excluded from the definition of solid waste
  - Solid waste excluded from the definition of hazardous waste
  - Hazardous waste exempt from Subtitle C regulations
- LDR
  - 40 CFR 268.7(a)(1) Generators must determine whether their waste is subject to the LDRs for each hazardous waste at the point of generation,
- Generator certification
  - Written or electronic signature from individuals authorized to make waste characterization decisions certifying information provided is representative, true and accurate.

Additionally *MDWTP and WDI* will review the waste profile information to ensure that the facility is authorized to receive the waste, in accordance with the following requirements

- Ignitable, reactive and incompatible waste
- Universal Waste
- RCRA Waste with >500ppm VOC bearing waste

For the purposes of compliance with 40 CFR Part 268 or if the waste is not listed in Subpart D of 40 CFR Part 261 (R299.9213), per 40 CFR 262.11, the generators must determine whether their waste is identified in Subpart C of 40 CFR Part 261 (R299.9212) by either:

- Testing the representative samples of the waste according to the methods set forth in Subpart C (of 40 CFR Part 261) or according to an equivalent or recognized laboratory method
- Applying knowledge of the hazard characteristic in light of the materials or processes used.
  - Acceptable knowledge that may be used as part of the basis for acceptable knowledge include but are not limited to: waste origin, composition, feedstock, knowledge of products, by-products, and intermediates produced by the manufacturing process; material balances for the source or process generating the hazardous waste; chemical and physical properties of chemicals used or produced by the process or otherwise contained in the waste, constituent-specific chemical test data for the hazardous waste from previous testing that are still applicable to the current waste; previous test data for other locations managing the same type of waste; knowledge based on information included in manifests, shipping papers, waste certification notices, and Safety Data Sheets; or other reliable and relevant information

The generator provided profile information (data, waste type, process description, waste chemical and physical characteristics, LDR requirements in 40 CFR Part 268) provide the facility with sufficient information to decide if the waste can be accepted for disposal at WDI or storage, transshipment and treatment at MDWTP. An individual approval is assigned to the waste stream along with a handling method that identifies the treatment(s) required (if any) as well as disposal.

If the generator does not provide sufficient information, the generator or their representative is contacted in order to obtain additional information before the approval process will continue. Representative samples may be requested to further evaluate the waste and verify information provided by the generator, but are not required.

A2.A.3 SAMPLING AND SELECTION OF WASTE ANALYSIS PARAMETERS

[R 299.9605(1) and 40 CFR §264.13(B)(1)]

A2.A.3(a) On-site Generated Waste

Knowledge of the process and analytical testing will be used to determine if the hazardous wastes exhibit one or more characteristics to: (1) ensure compliance with LDR regulations and (2) provide waste compatibility information to determine appropriate waste storage. When generator knowledge is not enough to characterize a waste stream generated at the facility *MDWTP and WDI* will select waste analytical parameters based on what is reasonably expected to be present in the waste and use information such as knowledge of the raw material, historical analytical results, and physical and chemical processes that produce the waste stream to help support the analytical requirement.

USEPA SW-846 will be followed, whenever possible, when choosing sampling equipment and methodologies. Sampling equipment is constructed of non-reactive materials. Care is taken in the selection of the sampler to prevent cross-contamination of the sample and to ensure compatibility of materials. If a method is not provided in USEPA SW-846, then a different method will be used as indicated Table A2.A.1. All equipment used in the collection of waste samples will either be disposable (e.g., scoops or container thieves) or sufficiently cleaned to remove observable contamination prior to sampling.

Table A2.A.2 lists the waste analysis parameters that will be completed for the purpose of characterization of onsite waste, and parameters that may be needed in order to make a pre-approval determination. The table includes the rationale for the selection of these parameters, test methods that will be used to test for these parameters, the appropriate reference, the frequency of waste characterization, and the rationale for frequency. Where a test method is specified in subpart C of 40 CFR part 261, the results of the regulatory test, when properly performed, are definitive for determining the regulatory status of the waste if knowledge or other supporting information cannot be used.

Table A2.A.1 Representative Sampling Procedures

Container Type or Material	Sampling Method[1]	Sampling Equipment	Rationale
Aqueous Waste	SW-846	Thieves Coliwasas	Chapter Nine of SW-846 Compendium: Sampling Plans
Solid, sludge, granular	SW-846	Auger Trier Scoops	

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[1] The sampling method should demonstrate equivalence with the sampling methods described in 40 CFR, Part 261, Appendix I

A2.A.3(b) Off-site Generated Waste
[R 299.9605(1) and 40 CFR §264.13(B)(1)]

As stated in 262.11, a person who generates a solid waste, as defined in 40 CFR 261.2, must make an accurate determination as to whether that waste is a hazardous waste in order to ensure wastes are properly managed according to applicable RCRA regulations. The information provided to MDWTP and WDI is used as the basis for the chemical and physical analysis, and generators are responsible for ensuring the information is true and accurate. Highly variable waste streams are urged to be characterized conservatively in order to require treatment of all constituents of concern that are reasonably expected to be present in the waste. Additionally, generators may be asked to provide multiple data points and information in order to demonstrate the characterization. Waste streams that may have varying characterizations may be broken up into multiple approvals segregating the waste according to the appropriate characterization. If necessary MDWTP and WDI may choose to conservatively manage the waste, however as 262.11 states the generators are ultimately responsible for the determination at the point of generation.

Confirmatory analysis may be completed in order to corroborate a generator's characterization. This may be done at the request of the generator, or if the waste stream is suspected to have additional contaminates of concern than identified by the generator. Discrepancy procedures outlined in A2.A.4 will be followed if analysis differs from the generator characterization.

Table A2.A.2 Pre-Approval/Waste Characterization Analysis Procedures

Waste Characterization: Characterization of onsite generated waste
Preapproval: Evaluation prior to approving waste

Screening Parameter	Rationale for Parameter		Test Method	Reference	Frequency	Rationale for Frequency
	Waste Characterization	Pre-Approval				
Waste Code (onsite generated waste)	See section A2.A.2		See metals, VOC, SVOC, ignitability, reactivity screening parameters.	See metals, VOC, SVOC, ignitability, reactivity screening parameters.	See Attachment A2.A.3(a)	
Land Disposal Restrictions (LDR)	See section A2.A.2		See metals/mercury, VOC, SVOC, Pesticide, and Herbicide parameters.	See applicable parameter below	See section A2.A.2	
Free Liquids	Verification of the presence of free liquids		Visual Inspection or Paint Filter Liquids Test	Visual ;SW846, 9095	**Waste Characterization:** A2.A.3(a) **Preapproval:** See A2.A.3(b)	
Ignitability	D001 ignitability determination		Flashpoint by Pensky-Martens or Setaflash	SW 846 1010 or SW 846 1020	**Waste Characterization:** A2.A.3(a) **Preapproval:** See A2.A.3(b)	
Reactivity	D003 reactivity determination		Water addition to waste and monitor for adverse reaction	Internal Procedure	**Waste Characterization:** A2.A.3(a) **Preapproval:** See A2.A.3(b)	
Cyanide Screening	Verify potential of the presence of cyanides		SW846 9014 coloring method reagents are added to a mixture of water and waste. In the presence of cyanide color change will occur.	Pyridine-barbituric acid colorimetry screening	**Waste Characterization:** A2.A.3(a) **Preapproval:** See A2.A.3(b)	
Cyanide	Quantification of Cyanide Concentration		Total and Amenable Cyanide: Distillation; Cyanide in Waters and Extracts Using Trimetric and Manual Spectrophotometric Procedures	SW846 9010 and 9014	**Waste Characterization:** A2.A.3(a) **Preapproval:** See A2.A.3(b)	
PCB	Quantification of PCB Concentration		PCBs by GC	SW846 8082	**Waste Characterization:** A2.A.3(a) **Preapproval:** See A2.A.3(b)	
Metals/Mercury	Quantification of PCB Concentration		Solid or liquid digestion procedure followed by analysis	SW846 6010, SW846 7473, 245.7M	**Waste Characterization:** A2.A.3(a) **Preapproval:** See A2.A.3(b)	
Hydrogen Sulfide Screening	Verify potential of the presence of sulfides in order to rule out		Mix waste in cup with acid. Detect H2S gas with lead acetate paper or other appropriate device	Internal Procedure	**Waste Characterization:** A2.A.3(a) **Preapproval:** See A2.A.3(b)	
pH	D002 determination		If not visually apparent after looking at pH paper, an electronic measurement will be made. Full Sw846 method used when characterizing waste	SW846 9040	**Waste Characterization:** A2.A.3(a) **Preapproval:** See A2.A.3(b)	
Semi-volatiles	Quantification of Semi-volatile Concentration		Solid or liquid extraction procedure followed by analysis on GC	SW846 8270	**Waste Characterization:** A2.A.3(a) **Preapproval:** See A2.A.3(b)	
Volatiles	Quantification of Volatile Concentration		Solid or liquid extraction procedure followed by analysis on GC	SW846 8260, 8015	**Waste Characterization:** A2.A.3(a) **Preapproval:** See A2.A.3(b)	
Pesticides	Quantification of Pesticide Concentrations		Solid or liquid extraction procedure followed by analysis on GC	SW846 8081	**Waste Characterization:** A2.A.3(a) **Preapproval:** See A2.A.3(b)	
Herbicides	Quantification of Herbicide Concentration		Solid or liquid extraction procedure followed by analysis on GC	SW846 8151, 8270	**Waste Characterization:** A2.A.3(a) **Preapproval:** See A2.A.3(b)	

**Alternative methods may be required on a case by case basis in order to properly analyze the waste

A2.A.4 PRE-APPROVAL LAND DISPOSAL RESTRICTIONS (LDR) EVALUATION

[R 299.9605(1) and 40 CFR §264.13(B)(1)]

Onsite and off-site generated waste streams are reviewed by qualified personnel for concurrence with LDR applicability and prohibition of disposal. The determination is based on information provided by the generator as required by 40 CFR 268.7(a)(1).

Generator process knowledge, analysis, and/or information provided on the waste characterization form will be used to determine whether characteristic waste along with underlying hazardous constituents reasonably expected to be present above their concentration-based levels (see Table UTS in §268.48) at the point of generation, meet the applicable land disposal restrictions. In accordance with R 299.9627 and 40 CFR §268.41, where treatment standards are based on concentrations in the waste extract, the toxicity characteristic leaching procedure (TCLP) will be used, if required in accordance with Method 1311, to determine if waste meet treatment standards. Constituents exceeding applicable LDRs will be treated on-site by acceptable treatment methods or sent off-site to a facility that can appropriately treat the waste.

A2.A.4(a) Dilution and Aggregation of Wastes

[R 299.9627 and 40 CFR §268.3]

Listed wastes, if destined for land disposal, may not be diluted from the point of generation to the point of land disposal. Characteristic wastes may only be diluted if the waste has a concentration-based treatment standard or is treated using the DEACT technology-based treatment standard, and the waste is not a D003 reactive waste. Knowledge of dilution will result in MDWTP and WDI managing the waste as prohibited from land disposal and proper treatment will occur.

A2.A.5 PRE-APPROVAL GENERATOR WASTE CHARACTERIZATION DISCREPANCIES

[R 299.9605(1) and R 299.9504(1)(c) and 40 CFR §§264.13(a)(3) and (4), 264.13(b)(c), and 264.72]

Waste streams are reviewed with respect to waste characterization requirements and the Land Disposal Restrictions (LDR) requirements in 40 CFR Part 268. Waste generators or individuals with the authority to make characterization and LDR decisions must certify information provided is representative, true and accurate. The analytical data, waste type, process description, waste chemical and physical characteristics provide the facility with sufficient information to decide if the waste can be accepted or if additional data is required before a decision can be reached. If the generator does not provide sufficient information, the generator or their representative is contacted and requested to provide further information before the approval process will continue.

The profile, with the supporting information as required, forms the basis of information upon which the facility determines if the waste can receive an approval for disposal at WDI or storage, transshipment and treatment at MDWTP. When it is determined that a waste stream can be safely handled at the facility in accordance with the operating license requirements, it is assigned a unique identification number. An approval letter is sent to the generator directly or via the customer, serving as notification that the waste as represented may be shipped to the facility, and that the facility has the appropriate permit(s) to accept the waste. All approval files are maintained in the facility operating record in an electronic, paper or other archival form. Approval files with no shipments received upon annual review will not be kept in the facility operating record.

A2.A.6 SUBSEQUENT WASTE SHIPMENT PROCEDURES

[R 299.9605(1) and R 299.9504(1)(c) and 40 CFR §§264.13(a)(3) and 264.13(b)(4)]

The facility requires that the profile, supporting information, and/or documentation be updated whenever any one of the following occur:

- There has been a change in the process generating the waste. When a change in a waste stream's characterization or treatment requirements occurs generators must provide notification of the change.
- Inspection of a waste shipment reveals that the waste does not meet the description/classification of the approval values.

The initial evaluation of waste from each generator will be reviewed or repeated at least once in a calendar year to ensure that the information provided is accurate and up-to-date.

A2.B PRE-ACCEPTANCE

A2.B. 1 PRE-ACCEPTANCE PROCEDURES

[R 299.9605(1) and R 299.9504(1)(c), and 40 CFR §§264.13(c), 264.72(a) and (b), and 264.73(b)]

Waste shipments arrive at the facility in the following containers:

☒ Drums
☒ Carboys
☒ Roll-off boxes
☒ Totes
☒ Wrangler box
☒ Vacuum trucks
☒ Tanker trucks
☒ Filter bags

☒ Other: Dump trailer, Flo- bin, Cubic yard boxes, etc.
***All container types cannot be accounted for. Generators are responsible for ensuring waste is properly packaged for transportation. US Ecology does not have any container type restrictions in order to accommodate all waste types that may be generated.*

Each manifested line item receives a unique receipt number that contains approval information determined during the pre-approval process described above. During the pre-acceptance process *MDWTP/WDI* will perform all of the following tasks on waste received from off-site generators:

- Review paperwork
- Visually inspect the waste as required
- Perform waste screening/fingerprint analysis of waste as required

Discrepancy notifications will be made to the generator if the review process reveals inconsistencies with the paperwork or the waste. Once discrepancies are resolved the received waste will be accepted for treatment and disposal. If the discrepancy cannot be resolved, received waste will be rejected to the generator or an alternate facility.

A2.B.1(a) Paperwork Review

[R 299.9605(1) and R 299.9504(1)(c), and 40 CFR §§264.13(c), 264.72(a) and (b), and 264.73(b)]

All shipments of wastes subject to LDRs received at the facility will be accompanied by appropriate generator notification in accordance with R 299.9627 and 40 CFR §268.7 as well as an appropriate shipping paper. Complete shipping and LDR paperwork will be compared to information submitted by the generator during the pre-approval process to ensure the accuracy of information provided. The manifest will also be compared to the number of containers, the volume, and/or the weight of the waste in the shipment.

The notification accompanying the generator's waste will be reviewed, and any discrepancies in the notification and associated manifest, or waste approval information will prevent treatment or disposal unless additional, satisfactory, clarifying information is provided by the generator.

A2.B.1(b) Sampling Methods and Frequency

[R 299.9605(1) and R 299.9504(1)(c) and 40 CFR §§264.13(b)(14) and 264.13(c)(2)]

The sampling methods that will be used to obtain a representative sample of the waste to be evaluated and the sampling equipment and rationale are summarized in Table A2.B.1.

Upon completion of the paperwork review, non-bulk containers received are accounted for and placed in permitted storage area where waste screening sampling will occur. Except for material exempted in section A2.B.1(d), for shipments received from off-site locations *MDWTP and WDI* will visually inspect and sample at least *10* percent of the manifested container count from each unique non-bulk approval number per shipment. The separate samples collected will be composited by waste stream in the facility laboratory to form a single sample for analysis. Individual samples that are visually dissimilar will not be composited.

Bulk containers (i.e. roll- offs, end dumps, etc) are sampled upon arrival at the facility and are placed in permitted storage or directly into permitted treatment tanks. Except as exempted below, a grab sample will be taken from 100% of the manifested bulk containers from each unique approval number on a given manifest.

USEPA SW-846 will be followed, whenever possible, when choosing sampling equipment and methodologies. Sampling equipment is constructed of non-reactive materials. Care is taken in the selection of the sampler to prevent cross-contamination of the sample and to ensure compatibility of materials. If a method is not provided in USEPA SW-846, then a different method will be used as indicated Table A3.A.2. All equipment used in the collection of waste samples will either be disposable (e.g., scoops or container thieves) or sufficiently cleaned to remove observable contamination prior to sampling.

Table A2.B.1 Representative Sampling Procedures

Container Type or Material	Sampling Method[1]	Sampling Equipment	Rationale
Aqueous Waste	SW-846	Thieves Coliwasas	Chapter Nine of SW-846 Compendium: Sampling Plans
Solid, sludge, granular	SW-846	Auger Trier Scoops	

[1] The sampling method should demonstrate equivalence with the sampling methods described in 40 CFR, Part 261, Appendix I.

A2.B.1(c) Waste Screening and Visual Inspection of Waste

[R 299.9605(1) and R 299.9504(1)(c) and 40 CFR §264.13(c)]

Visual observations and screening results will be recorded and compared to the profiled information.

The contents of the container will be visually inspected for the following:
☒ Color ☒ Physical State ☒ Consistency

In addition to visual inspection, Table A2.B.2 identifies the waste screen procedures, including screening parameters, test methods, the appropriate reference, the frequency of waste screening, and the rationale for the frequency. The screening parameters are completed in order to compare waste characterization information with the waste receipt and verify the material received is as profiled.

A2.B.1(d) Sampling Methods and Frequency Exceptions

[R 299.9605(1) and R 299.9504(1)(c) and 40 CFR §§264.13(b)(14) and 264.13(c)(2)]

In some circumstances waste screening procedures may not be necessary in order to verify the waste matches the pre-approval information. For wastes from which no samples will be taken, a visual inspection will be performed to determine if the waste resembles the description provided in the approval. Waste streams that may cause an air quality or safety concern, such as the examples provided below, will not be opened for visual inspection. However, during the pre-approval process MDWTP and WDI will require certification that acceptance criteria are met.

Exceptions for the requirement of a sample include the following waste types:

- On-site generated waste
  - *Reason for exception:* The generating process and properties of the waste are well known and as a result waste screening procedures are not needed.
- Articles, equipment, clothing (such as personal protective equipment (PPE)) contaminated with chemicals; Debris and demolition wastes (40 CFR 268); Chemical-containing devices/articles, such as cathode ray tubes (CRTs), fluorescent lights, batteries; Equipment, machinery, pumps, piping, etc.; Empty containers. Containers are considered "empty" according to the criteria specified in R299.9207; Tanks (whole or cut);
  - *Reason for exception:* Visual inspection is an appropriate means of determining waste meets waste profiled information. Material cannot physically be sampled or representative samples cannot be collected.
- Spent activated carbon, filters from inside tanks, ion-exchange resins, molecular sieves, filters/ cartridges;
  - *Reason for exception:* Visual inspection is an appropriate means of determining waste meets waste profiled information
- Discarded, off-specification, or out-dated commercial products.
  - *Reason for exception:* Properties of the waste can be determined through SDS and visual inspection can adequately determine if matches profiled information.
- Asbestos-containing waste; Waste potentially capable of causing detectable odor at the facility property line; Waste that by its hazardous nature may require more protective PPE. Examples include but are not limited to beryllium, hydrofluoric acid, and arsenic pentoxide; Wastes from food or animal processing; Animal feces; Non-putrescent medical waste that has been decontaminated or is not required to be decontaminated but is packaged in the manner required under part 138 of the public health code, 1978 PA 368, MCL 333.13801 to 333.13831 in order to land dispose Septage or sewer treatment plant sludge from domestic users;
  - *Reason for exception:* Reduces the risk of air quality or safety concern
- Waste streams approved by MDEQ on a case-by-case basis.

For some waste streams, it may be necessary to conduct the weight measurement and/or waste screening at an off-site location, such as the site of generation. These activities are performed by individuals trained on the WAP procedures that will be utilized. The results of the inspection and testing must be transmitted to the Receiving Department prior to the waste being treated or disposed (i.e. with the waste shipment or before). For these waste streams, a description of the off-site testing will be maintained on file at the facility

A2.B.2 PRE-ACCEPTANCE DISCREPANCY

If a resolution cannot be obtained waste may not be treated or disposed. A representative will be notified in order to resolve the discrepancy if the facility receives a shipment of waste without LDR notification or shipping paperwork; if the paperwork contains incorrect or incomplete information. Discrepancies may result in changes that may require additional handling procedures or modifications to the paperwork or waste characterization. Additional samples for verification may be required to verify information provided by the generator or their representative.

If the discrepancy reveals the waste cannot be managed at MDWTP or WDI the waste may be transshipped to an alternate facility, or rejected to the generator or an alternate facility.

Table A2.B.2 Pre-Acceptance Analysis Procedures

Preacceptance: Incoming waste evaluation at the time of receipt to determine acceptability with permit conditions and handling procedures

Parameter	Parameter Rationale	Test Method	Reference	Frequency	Rationale for Frequency
Free Liquids	Verify presence of free liquids	Visual Inspection or Paint Filter Liquids Test	Visual ;SW846, 9095	As needed	Dependent on visual assessment
Ignitability	Verify ignitability	Flashpoint by Pensky-Martens or Setaflash	SW 846 1010A or SW 846 1020B	As needed	Verify match test result
Ignitability-Match Test	Verify potential for ignitability	Attempt to ignite gases or vapors emitting from waste	Internal Procedure	Each shipment	Verification for proper storage and handling.
Reactivity	Verify potential for adverse reaction	Water, caustic and acid addition to waste and monitor for adverse reaction	Internal Procedure	First shipment then as needed	Verification for proper storage and handling.
Compatibility (MDI Only)	Verify potential for adverse reaction	Waste and reagents will be mixed together in a mock tank. Tank will be monitored for adverse reactions such as significant gas production and extreme heat.	Internal Procedure	Each stabilization/oxidation tank	To advert the potential for an adverse reaction.
Radioactivity	Verify potential for radioactivity	Shipments will be compared to background radiation levels using in instrument capable of detecting gamma radiation	Internal Procedure	Each shipment	Verification of Waste characterization, confirmation that waste meets landfill disposal limits
Cyanide Screening	Verify potential of the presence of cyanides	SW846 9014 coloring method reagents are added to a mixture of water and waste. In the presence of cyanide color change will occur.	Pyridine-barbituric acid colorimetry screening	First shipment then as needed	Waste acceptability
PCB Screen	Verify presence of PCBs	Extraction and comparison to 1 point standard using GC	Internal Procedure	TSCA shipment incidental free liquids	Confirm incidental liquids and generator knowledge
Hydrogen Sulfide Screening	Verify presence of sulfide	Mix waste in cup with acid. Detect H2S gas with lead acetate paper or other appropriate device	Internal Procedure	First shipment then as needed	Waste acceptability
pH	Verify pH	If not visually apparent after looking at pH paper, an electronic measurement will be made.	SW846 9040	Each shipment	Confirm profile values

**Alternative methods may be required on a case by case basis in order to properly analyze the waste

A2.C WASTE ACCEPTANCE

A2.C.1 CONTAINERIZED WASTE

[R 299.9504(1)(c) and 40 CFR §264.172]

A2.C.1(a) Wastes Container Compatibility

All wastes received by the facility are expected to arrive in a DOT compliant container. If compatibility issues with the container are identified the contents of the container will be transferred to a more appropriate container or the container will be placed in an over pack drum.

Stored containerized waste is segregated according to 49 CFR Subpart C—Segregation and Separation Chart of Hazardous Materials segregation rules (See Table A2.C.1). Based on the hazard assessment of the waste, the containerized waste is organized into segregated storage areas within the NCSA, ECSA, SECSA and the East and West Loading/Unloading Bays. MDWTP takes precautions to prevent the accidental ignition or reaction of ignitable or reactive waste being stored or processed per the requirements of 40 CFR §264.17. This waste must be separated and protected from sources of ignition or reaction including but not limited to: open flames, smoking, cutting, and welding hot surfaces, frictional heat, sparks, spontaneous ignition, and radiant heat. WDI does not accept ignitable or reactive waste for storage or processing.

TABLE A2.C.1 Segregation and Separation Chart of Hazardous Materials

CLASS OR DIVISION		2.1	2.2	3	4.1	4.3	5.1	5.2	6.1*	8A	8B	9
Non-Flammable Gases	2.1	C	C	C	C	C	C	C	C	C	C	C
Non-Toxic, Non-Flammable Gases	2.2	C	C	C	C	C	C	C	C	C	C	C
Flammable Liquids	3	C	C	C	C	C	X	C	C	C	C	C
Flammable Solids	4.1	C	C	C	C	C	C	C	C	X	X	C
Dangerous when wet materials	4.3	C	C	C	C	C	C	C	C	X	X	C
Oxidizers	5.1	C	C	X	C	C	C	C	C	X	X	C
Organic Peroxides	5.2	C	C	C	C	C	C	C	C	X	X	C
Poisonous Liquids (NOT PG I, Zone A materials)	6.1*	C	C	C	C	C	C	C	C	C	C	C
Corrosive Liquids-Acids	8A	C	C	C	X	X	X	X	C	C	X	C
Corrosive Liquids-Bases	8B	C	C	C	X	X	X	X	C	X	C	C
Other Regulated Materials and Non-Hazardous Wastes	9	C	C	C	C	C	C	C	C	C	C	C

Notes:

✓ This chart is from the USDOT Segregation and Separation Chart of Hazardous Materials, 49 CFR Subpart C (177.848) & additionally segregates the corrosive wastes into acids and bases.

✓ Acids have a pH ≤ 2.0 and bases have a pH ≥ 12.5.

* = Other than Poisonous Liquids PG I, Zone A will not receive wastes with Class 1, or Division 2.3, 4.2, 6.1 PG I, Zone A Hazardous Material classifications.

C = Compatible

X = Non-Compatible

A2.C.1(b) Containers without Secondary Containment System

Containers holding waste without free liquids are exempt from secondary containment requirements. The presence of free liquids can be determined by visual inspection and/or using Paint Filter Liquids Test, Method 9095 in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846.

F020, F021, F022, F023, F026, and F027 waste streams with or without free liquids will only be stored in concrete container storage areas

A2.C.2 WASTE IN TANK SYSTEMS

[R 299.9504(1)(c) and 40 CFR §§264.190(a), 264.191(b)(2), 264.192(a)(2)]

A2.C.2(a) Tank Assignment (MDWTP)

During the pre-approval process treatment requirements are assessed based the concentrations of the constituents of concern and applicable waste codes and underlying hazardous constituents (UHC) that make up the waste. The generator LDR notification is used as verification of the contaminants present requiring treatment. Individual waste streams are consolidated into treatment tanks based on similar waste codes and treatment requirements.

A2.C.2(b) Waste Compatibility with and within Tanks

Compatibility testing as described in Table A2.A.2 evaluates the potential for reactions to occur inside the treatment tank. Samples from bulk and non-bulk containers are combined along with reagents to be used in the treatment process. If an adverse reaction occurs the waste mixtures are evaluated by qualified personnel to determine if changes are needed to the order in which the waste or reagents are added or if material needs to be managed separately.

Prior to transferring any wastes into a waste treatment tank, the compatibility of the wastes to be combined will be evaluated by mixing in a bench scale "mock tank." The parameters used to determine compatibility are briefly outlined below:

- Gas Evolution - Materials that upon mixing, appear to liberate excessive amounts of vapors, fumes, or mists, will not be combined.
- Heat Generation - Materials that, upon mixing, would generate excessive amounts of heat will not be combined.
- Adverse Reactions - Materials that, upon mixing, result in the formation of a large amount of sludge, or solidify or gel may not be combined if this causes a removal or subsequent handling problem.

As outlined in Attachment C2 Tank Systems, the waste treatment tanks are lined with steel. If waste has the potential to react with the tank construction materials, processing activities will account for this and the material will be managed to prevent ignition, reaction or release to the environment. For example, neutralizing reagents may be placed into the tank prior to waste placement.

A2.C.2(c) Tanks without Secondary Containment System

All liquid storage tanks at the facility are in secondary containment.

A2.C.3 WASTE BULKING AND/OR CONSOLIDATION COMPATIBILITY

Different like-wastes that are combined in a container, (excluding empty containers, debris or closed and intact containers of non-hazardous waste) are subjected to the same compatibility (Table A2.A.2) evaluations as applied to wastes that are mixed in the treatment tanks.

Pending compatibility confirmation, liquid and solid hazardous and non-hazardous wastes may be bulked or consolidated into larger or fewer containers in any MDWTP permitted storage area. If a roll-off box or other bulk reusable shipping container will be used for bulking or consolidation of listed hazardous waste to an off-site location, a liner will be utilized to prevent contamination when switching from listed wastes to characteristic wastes.

The following waste streams will not be bulked or consolidated: reactives, incompatibles and wastes that alone or when mixed are capable of causing excess odor at the facility property line.

A2.C.4 TRANSSHIPPED WASTE

Any waste to be transshipped off-site to other permitted TSDF's will be received under a valid approval. Waste will be sent to an authorized TSDF that can manage the material for treatment and/or disposal.

A2.D POST TREATMENT AND LAND DISPOSAL RESTRICTION

A2.D.1 TREATMENT FOR PURPOSE OF LAND DISPOSAL

[R 299.9627, R 299.9208, and R 299.9212 and 40 CFR §261.3(d)(1), 264.13(a)(1), 268.7, 268.9, 268.37, 268.40, 268.41, 268.42, and 268.43 and Part 268, Appendix I and Appendix IX]

As stated in the 1997 preamble, the ultimate objective of the LDR program is to ensure all of the hazardous waste to be land disposed is treated in a way that minimizes the threats that land disposal could pose. MDWTP treats wastes that require treatment to comply with the LDRs using well designed treatment methods such as stabilization, immobilization, neutralization, deactivation, oxidation, and/or reduction using such treatment reagents as inorganic binders (e.g., cement, fly ash, kiln dust), organic binders (e.g., activated carbon), ferrous sulfate, ferric chloride, sodium sulfide, acids, bases, oxidizers and/or reducing agents. Treatment reagents may be commercially available materials, other untreated waste (e.g., an acid waste used to treat a base waste and vice versa), and/or treated waste (e.g., a stabilized waste meeting LDRs used to absorb free liquids in a non-hazardous waste whose only required treatment is solidification to pass the paint filter test). Treatment of applicable waste codes and UHCs reasonably anticipated to be present at the point of generation as identified by the generator during the pre-approval process occurs in accordance with Attachment C4 Treatment. Table A2.D.1 details the recommended treatment that may occur for the characteristic category.

Table A2.D.1 Characteristic Treatment Identification

CHARACTERISTIC	TREATMENT
Ignitable waste	Deactivation 40CFR Part 268 Appendix VI
Oxidizer	Deactivation 40CFR Part 268 Appendix VI
Corrosive	Deactivation 40CFR Part 268 Appendix VI
Reactive	Deactivation 40CFR Part 268 Appendix VI or an equivalent
Metal bearing waste	Stabilization, Precipitation, Chemical Reduction
Cyanide bearing waste	Chemical Oxidation
SVOC and VOC bearing waste	Chemical Oxidation
Pesticide/Herbicide Bearing Waste	Chemical Oxidation
Hazardous Debris	Immobilization

Constituents that do not qualify as UHCs in the original waste, but are concentrated to above UTS levels during treatment are not required to meet UTS levels in the treatment residual. If after treatment a hazardous waste displays a characteristic for the first time, the characteristic waste code will be added to facility records. Wastes will be retreated, as appropriate, to meet the applicable characteristic treatment standards of 40 CFR 268.40 and 268.48 or an alternative treatment standard specified in §40 CFR 268.44-49, prior to land disposal (Federal Register 64:90 (11 May 1999)).

A2.D.2 LAND DISPOSAL RESTRICTIONS

[R 299.9627, R 299.9208, and R 299.9212 and 40 CFR §261.3(d)(1), 264.13(a)(1), 268.7, 268.9, 268.37, 268.40, 268.41, 268.42, and 268.43 and Part 268, Appendix I and Appendix IX]

In accordance 40 CFR 268.40, prohibited waste identified in the table "Treatment Standards for Hazardous Wastes" may be land disposed at WDI or another authorized landfill only if it meets the requirements found in the table. Hazardous constituents in waste or in treatment residual will be disposed of only if the following applicable conditions are met:

- All hazardous constituents in the waste or in the treatment residue must be at or below the values found in the table for that waste ("total waste standards"); or
- The hazardous constituents in the extract (Method 1311, the Toxicity Characteristic Leaching Procedure (TCLP) is utilized except for D004 and D008 which may also utilize 1310B) of the waste or in the extract of the treatment residue must be at or below the values found in the table ("waste extract standards"); or
- The waste must be treated using the technology specified in the table ("technology standard"), which are described in detail in § 268.42, Table 1 Technology Codes and Description of Technology-Based Standards.

Applicable alternative treatment standard specified in §40 CFR 268.44-49 may be applied to waste or treatment residual. When wastes with differing treatment standards for a constituent of concern are combined for purposes of treatment, the treatment residue will meet the lowest treatment standard for the constituent of concern.

A2.D.2(a) Characteristic Wastes

Characteristic waste codes acceptable for storage, treatment and disposal are outlined in Appendix A. Waste codes will be treated to treatment standards identified in 40 CFR 268.40. In addition to the waste codes, underlying hazardous constituents reasonably anticipated to be present at the point of generation will be treated to universal treatment standards (UTS) found in 40 CFR 268.48. Upon treatment and the appropriate demonstration that the waste has met applicable LDRs or has been appropriately decharacterized waste will be landfilled.

A2.D.2(b) Listed Wastes

[R 299.9627, R 299.9213, and R 299.9214 and 40 CFR, Sections 264.13(a)(1), 268.7, 268.30, 268.31, 268.33, 268.34, 268.35, 268.36, 268.39, 268.40, 268.41, 268.42, and 268.43]

Generator process knowledge strongly determines the applicability of the listed waste code. Listed waste codes acceptable for storage, treatment and disposal are outlined in Appendix A. Unless delisting provisions are applicable to the listed waste code, once applicable treatment standards are met listed waste will be disposed of in a Subtitle C landfill.

The treatment standard for F001-F005 constituent's carbon disulfide, cyclohexanone, and/or methanol requires compliance to be measured for these constituents as waste extract utilizing Method 1311 as required by 40 CFR 268.40(f). If the waste contains any other F001-F005 in addition to any of these three constituents, compliance with the treatment standards for carbon disulfide, cyclohexanone, and/or methanol is not required.

Dioxin waste (F020-F023, F026-F028, K043 and K099) are acceptable for disposal at WDI and may be present in waste processed at MDWTP, as so long as applicable LDRs are met. Waste accepted for treatment will receive treatment for other constituents subject to LDRs, but MDWTP does not perform treatment or analysis of dioxins.

A2.D.2(c) Laboratory Packs

[R 299.9627 and 40 CFR §268.7, 268.42(c) and Part 268, Appendix IV and Appendix V]

☒ The laboratory packs generated at the facility are not land disposed without meeting applicable Subpart D treatment standards

Lab pack waste generated with an LDR requesting lab pack alternatives to Subpart D treatment standards, will be transshipped offsite for incineration in accordance with 268.42(c). Lab packs received with the appropriate LDR designation indicating the compliance status of Subpart D treatment standards may be received processed to applicable 268.40 treatment standards.

A2.D.2(d) Radioactive Mixed Waste
[R 299.9627 and 40 CFR §§268.7, 268.35(c), 268.35(d), 268.36, and 268.42(d)]

☒ The facility does not generate radioactive mixed waste.

See Appendix B Radiological Waste Acceptance Criteria for acceptable waste.

A2.D.2(e) Contaminated Debris
[R 299.9627 and 40 CFR §§268.2(g), 268.7, 268.9, 268.36, 268.45, and 270.13(n)]

Hazardous debris that exhibits the characteristics of ignitability, corrosivity, or reactivity will be treated using one of the extraction, destruction, or immobilization technologies identified in Table 1 of 40 CFR §268.45. MDWTP does not knowingly accept hazardous debris deliberately mixed with non-debris hazardous waste in order to change the treatment classification.

MDWTP treats hazardous debris in accordance to immobilization technologies specified in 40 CFR 268.45, where there are no contaminant restrictions for the immobilization technologies nor are there limitations on the type of debris that that may be treated by the immobilization technologies.

When macroencapsulation or sealing is the applied immobilization technology, treatment may be performed in the MDWTP treatment tanks or any of the container storage areas.

A2.D.2(f) Waste Mixtures and Wastes with Overlapping Requirements
[R 299.9627 and 40 CFR §§264.13(a), 268.7, 268.41(b), 268.43(b), and 268.45(a)]

Wastes that carry more than one characteristic will be identified with a number for each characteristic and treated for each of the constituents of concern. The presence of a listed code or use of a treatment method or standard requiring Subtitle C disposal will result in disposal at WDI or an alternative Subtitle C landfill.

If immobilization is used in a treatment train, it will be the last treatment technology applied. Hazardous debris will be treated for each contaminant subject to treatment as specified by 40 CFR 268.45(b) for toxicity characteristic debris and debris contaminated with listed wastes.

A2.D.2(g) Dilution and Aggregation of Wastes
[R 299.9627 and 40 CFR §268.3]

Listed wastes, if destined for land disposal, may not be diluted in order to meet LDRs from the point of generation to the point of land disposal. Characteristic wastes may only be diluted if (1) the waste is managed in a CWA/CWA-equivalent surface unit or a Class I Safe Drinking Water Act injection well, (2) the waste has a concentration-based treatment standard or is treated using the DEACT technology-based treatment standard, and (3) the waste is not a D003 reactive waste.

The facility does not dilute or partially treat a listed waste to change its treatability category (i.e., from nonwastewater to wastewater), in order to comply with different treatment standards. MDWTP may combine different wastes for like treatment (e.g., a D007 waste may be combined with a D008 waste for stabilization). If the wastes are all amenable to the same type of treatment to be performed, the facility may combine wastes to perform the acceptable treatment.

A2.D.3 POST-TREATMENT SAMPLING AND ANALYSIS (MDWTP)

In accordance with the LDR regulations, wastes with concentration-based treatment standards must be evaluated to determine if applicable constituent concentration levels have been attained. This can be accomplished by either (1) testing the waste or (2) using knowledge (such as information provided on the waste characterization form, knowledge of the process or materials used to produce the waste, or knowledge of an effective treatment recipe) when appropriate, to determine whether the treated waste meets the applicable LDR treatment standards specified in R 299.9627 and 40 CFR §§268.41-43 or alternative treatment standards specified in §§268.44-49.

Treated waste will be sampled from the MDWTP treatment tanks in order to verify that the waste meets the applicable LDR numeric-concentrations prior to land disposal. Consistent with 40 CFR 268.40(b), compliance with LDR numeric-concentrations based treatment standards for non-wastewaters is determined using one grab sample (a one-time sample taken from any part of the waste) collected from a random vertical and horizontal location using an excavator to reach the selected sampling point, collecting the sample from the excavator bucket with a disposable scoop or cup. Using grab sampling to measure compliance with the treatment standards ensures conformity with LDR program goals such that all of the hazardous waste to be land disposed is treated to minimize the threats to human health and the environment (62 FR 26041, 26047; May 12, 1997). In addition, grab samples normally reflect maximum process variability, and thus reasonably characterize the range of treatment system performance (54 FR 26594, 26605; June 23, 1989). EPA established treatment standards for prohibited wastes based on grab sampling. The universal treatment standard for non-wastewaters are consequently enforced on the basis of grab sampling, and in turn is how MDWTP confirms treatment standards have been met.

The sample is then taken to the laboratory for analysis. Table A2.D.2 outlines the test methods that will be utilized to verify LDR. Limits of quantitation are set below treatment standards of the specific compound being analyzed in order to quantify concentrations in order to demonstrate concentrations are below UTS levels. Treatment batch residues, resulting from the treatment operations that exceed the applicable LDRs, are reevaluated. Options include re-testing after additional cure time, retreating on-site until the LDRs are achieved or sending the batch off-site for further treatment to meet the LDRs.

A2.D.4 DOCUMENTATION OF VARIATIONS ON TEST METHODS USED FOR WASTE ANALYSIS

For the purposes of waste characterization and LDR verification, MDI analyzes mercury in waste extracts using a modified version of USEPA 245.7 with QAQC procedures outlined by Method 7470A (SW-846): Mercury in Liquid Waste (Manual Cold-Vapor Technique. USEPA 245.7 was developed for wastewater and drinking water standards and is designed with lower detection and calibration levels than required by RCRA. As a result the parts per trillion (ppt) levels desired by the method have been modified to parts per billion (ppb) to comply with mercury's LDR concentration of 25 ppb. The low levels required by the method are achieved through handling procedures and reagent concentrations defined by the method. Instead reagent concentrations have been increased, and handling procedure defined in SW-846 are utilized.

TABLE A2.D.2 LAND DISPOSAL RESTRICTION VERIFICATION

Land Disposal Restriction (LDR):Verification applicable 40 CFR 268 LDRs are met or prohibited from land disposal

Parameter	Rationale	Test Method	Reference	Frequency	Rationale for Frequency
Land Disposal Restrictions (LDR)	Verify applicable 40 CFR 268 treatment standards are met	See metals/mercury, VOC, SVOC, Pesticide, and Herbicide parameters.	See applicable parameter below	Each tank as needed based on applicable properties and contaminates of concern.	Wastes with concentration-based treatment standards must be evaluated to determine if applicable constituent concentration levels have been attained. This can be accomplished by either (1) testing the waste or (2) using knowledge.
Ignitability	Verify Deactivation	Flashpoint by Pensky-Martens or Setaflash	SW 846 1010A or SW 846 1020B		
Reactivity	Verify Deactivation	Water, caustic and acid addition to waste and monitor for adverse reaction	Internal Procedure		
pH	Verify Neutralization	If not visually apparent after looking at pH paper, an electronic measurement will be made. Full Sw846 method used when characterizing waste	SW846 9040		
Free Liquids	Verify free liquids are not present for purposes of disposal	Paint Filter Liquids Test	SW846, 9095		
Cyanide	Verify applicable 40 CFR 268 treatment standards are met	Total and Amenable Cyanide: Distillation; Cyanide in Waters and Extracts Using Trimetric and Manual Spectrophotometric Procedures	SW846 9010 and 9014		
Sulfide	Verify Deactivation	Addition of water and caustic to verify hydrogen sulfide generation above thresholds that are harmful to human health and the environment	Internal Procedure		
PCB	Verify applicable 40 CFR 268 treatment standards are met	PCBs by GC	SW846 8082		
Metals/Mercury	Verify applicable 40 CFR 268 treatment standards are met	Solid or liquid digestion procedure followed by analysis	SW846 6010, SW846 7473, 245.7M		
Semi-volatiles	Verify applicable 40 CFR 268 treatment standards are met	Solid or liquid extraction procedure followed by analysis on GC	SW846 8270		
Volatiles	Verify applicable 40 CFR 268 treatment standards are met	Solid or liquid extraction procedure followed by analysis on GC	SW846 8260, 8015 (non-halogenated compounds)		
Pesticides	Verify applicable 40 CFR 268 treatment standards are met	Solid or liquid extraction procedure followed by analysis on GC	SW846 8081		
Herbicides	Verify applicable 40 CFR 268 treatment standards are met	Solid or liquid extraction procedure followed by analysis on GC	SW846 8151, 8270		

**Alternative methods may be required on a case by case basis in order to properly analyze the waste

A2.E LANDFILLED WASTES

[R 99.9504(1)(c) and 40 CFR §§264.13(c)(3) and 264.314]

A2.E.1 CONTAINERIZED OR BULK WASTES

Prior to landfilling, waste is inspected for the presence of free liquids. The presence of free liquids can be determined by visual inspection and/or using Paint Filter Liquids Test, Method 9095 in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846.

A2.E.2 PROCEDURES TO DETERMINE ADDITION OF BIODEGRADABLE SORBENT

The presence of biodegradable sorbents is identified from the waste characterization form and through visual inspection and sampling of incoming waste. MDWTP/WDI do not add biodegradable sorbents to any onsite generated waste

A3.E.3 WASTE SHIPPED TO SUBTITLE C FACILITIES

[R 299.9627 and 40 CFR §§268.7(a) and 268.7(b)(6)]

For restricted waste or waste treatment residues that will be further managed at a Subtitle C (hazardous waste management) facility, the facility will submit notifications and certifications in compliance with the notice and certification requirements applicable to generators under R 299.9627 and 40 CFR §268.7(a) and (b)(6).

A3.E.4 WASTE SHIPPED TO SUBTITLE D FACILITIES

[R 299.9627 and 40 CFR §§268.7(d) and 268.9(d)]

If the facility may ship nonhazardous and decharacterized waste to a Subtitle D facility, the facility will submit a one-time notification and certification for characteristic wastes, or listed wastes that are listed only because they exhibit a characteristic, that have been treated to remove the hazardous characteristic and are no longer considered hazardous. The facility will place a certification and all treatment records in the facility's file. The notification and certification will be updated if the process or operation generating the waste changes and/or if the Subtitle D facility receiving the waste changes.

A3.E.5 RECYCLABLE MATERIALS

[R 299.9627 and 40 CFR §268.7(b)(7)]

For wastes that are recyclable materials used in a manner constituting disposal, in accordance with R 299.9206 and 40 CFR §266.20(b), the facility will submit a notice and certification to the Director, or delegated representative, with each shipment of waste describing the waste and applicable treatment standards and identifying the facility receiving the waste. Recyclable materials may be stored and transshipped from MDWTP.

Materials from offsite sources that are beneficially reused by MDWTP for waste treatment (e.g., kiln dust, ferrous sulfate) alter the physical and/or chemical properties of the original materials such that the originally received material no longer exists and therefore does not qualify as land application. Thus such beneficially reused materials qualify as recycling and are not subject to RCRA waste management requirements.

A2.F NOTIFICATION, CERTIFICATION, AND RECORDKEEPING REQUIREMENTS

[R 299.9627 and R 299.9609 and 40 CFR §§264.73, 268.7, and 268.9(d)]

A2.F.1 RETENTION OF GENERATOR NOTICES AND CERTIFICATIONS

[R 299.9627 and 40 CFR §268.7(a)(7)]

MDWTP/WDI will retain a copy of all notices, certifications, demonstrations, data, and other documentation associated with compliance to LDRs as described in A2.F.6.

The following notices and certifications submitted by the initial generator of the waste will be reviewed and maintained:

- Notices of restricted wastes not meeting treatment standards or exceeding levels specified in RCRA §3004(d), including the information listed in R 299.9627 and 40 CFR §268.7(a)(1).
- Notices of restricted wastes meeting applicable treatment standards and prohibition levels, including the information in R 299.9627 and 40 CFR §268.7(a)(2).

A2.F.2 NOTIFICATION AND CERTIFICATION REQUIREMENTS FOR TREATMENT FACILITIES

[R 299.9627, 299.9608 and 40 CFR §268.7(b), 40 CFR 264.71]

The treatment facility will submit a notice and certification to the land disposal facility with each shipment of restricted waste or treatment residue of a restricted waste. The notice will include the information specified in R 299.9627 and 40 CFR §§268.7(b)(4) and 268.7(b)(5).

If the waste or treatment residue will be further managed at a different treatment or storage facility, the facility will comply with the notice and certification requirements applicable to generators as specified in R 299.9627 and 40 CFR §268.7(b)(6).

If a significant manifest discrepancy is discovered (such as variation in one-piece count or misrepresentation of the type of waste or corrosive rather than flammable) that cannot be resolved with the generator or transporter within 15 days of receipt, facility personnel will submit to the Director and/or manifest processing division, a letter describing the discrepancy and all attempts to reconcile the discrepancy. The letter will include a copy of the discrepant manifest or shipping document.

A legible copy of the manifest will be sent to the manifest processing division as specified in R 299.9608 and the generator within 30 days of receiving the waste.

A2.F.3 RECORD KEEPING

[R 299.9608(4), R 299.9609, R 299.9610(3), and R 299.9627 and 40 CFR §§264.72, 264.73, 268.7(a)(5), 268.7(a)(6), 268(a)(7), and 268.7(d)]

MDWTP/WDI maintains a facility operating log in accordance with R 299.9609 and 40 CFR §264.73. Copies of all necessary notifications and certifications, as well as relevant inspection forms and monitoring data, are also maintained on file in hard copy form or electronically at the facility. The operating log is maintained as follows:

Maintained in the operating log in hard copy or electronic format for three years unless specified otherwise:

- Off-site manifest or shipping paper, as well as the original foreign movement document
- Records and results of waste analyses and waste determinations performed for onsite waste characterization and LDR compliance.
- Summary reports and details of all incidents that require implementing the contingency plan.
- For off-site facilities, notices to generators.
- Records and results off inspections required by Attachment A5 Inspection Schedule.
- Waste minimization certification.
- LDR generator notices and TSDF certifications and demonstration, including notices of exclusion from the definition of hazardous waste, solid waste, or Subtitle C regulation required by 40 CFR 268.7 that
- Onsite generated waste LDR notice and certification and demonstration.
- Monitoring, testing or analytical data, and corrective action required as a result of a release.
- Foreign source notice
- Major manifest discrepancy notifications

Items kept in hard copy or electronic format until the closure of the facility include:

- A description and the quantity of each hazardous waste received, and the method(s) and date(s) of its treatment, storage, or disposal.
- For each day that waste is placed into the WDI landfill, a record showing the coordinates within which waste was placed.
- Ground water cleanup, monitoring, testing or analytical data, and corrective action required as a result of a release.
- Closure cost/postclosure cost estimate.
- Certifications of major changes to a tank system.

A2.F.7 REQUIRED NOTICE

[R 299.9605(1) and 40 CFR §264.12(a) and (b))]

When the facility is to receive hazardous waste from an off-site source, the facility will inform the generator in writing that the facility has the appropriate license for and will accept the waste the generator is shipping. The facility will keep a copy of this written notice in the operating record as described in A3.C.6.

Hazardous waste from a foreign source Subject to 40 CFR 262, Subpart H must submit the following notices:

- A copy of the movement document bearing all required signatures within 3 working days of receipt of the shipment to the foreign exporter; to the competent authorities of the countries of export and transit that control the shipment as an export and transit shipment of hazardous waste respectively; and on or after the electronic import-export reporting compliance date, to EPA electronically using EPA's Waste Import Export Tracking System (WIETS), or its successor system
- Waste imported from a foreign source where the competent authority of the country of export does not require the foreign exporter to submit to it a notification proposing export and obtain consent from EPA and the competent authorities for the countries of transit, such owner or operator of the facility, if acting as the importer, must provide notification of the proposed transboundary movement in English to EPA at least 60 days before the first shipment departs the country of export. The notification may cover up to one year of shipments of wastes having similar physical and chemical characteristics, the same United Nations classification, the same RCRA waste codes and OECD waste codes, and being sent from the same foreign exporter.

APPENDIX A

HAZARDOUS WASTES ACCEPTED AT THE FACILITY

Description of Acceptable Hazardous Wastes
Wayne Disposal, Inc., Site # 2
MID 048 090 633

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE	D1 PROCESS CODES		
1	D001[R]	2000000	Y	D80		
2	D002	2000000	Y	D80		
3	D003[R]	2000000	Y	D80		
4	D004	2000000	Y	D80		
5	D005	2000000	Y	D80		
6	D006	2000000	Y	D80		
7	D007	2000000	Y	D80		
8	D008	2000000	Y	D80		
9	D009	2000000	Y	D80		
10	D010	2000000	Y	D80		
11	D011	2000000	Y	D80		
12	D012	2000000	Y	D80		
13	D013	2000000	Y	D80		
14	D014	2000000	Y	D80		
15	D015	2000000	Y	D80		
16	D016	2000000	Y	D80		
17	D017	2000000	Y	D80		
18	D018	2000000	Y	D80		
19	D019	2000000	Y	D80		
20	D020	2000000	Y	D80		
21	D021	2000000	Y	D80		
22	D022	2000000	Y	D80		
23	D023	2000000	Y	D80		
24	D024	2000000	Y	D80		
25	D025	2000000	Y	D80		
26	D026	2000000	Y	D80		
27	D027	2000000	Y	D80		
28	D028	2000000	Y	D80		
29	D029	2000000	Y	D80		
30	D030	2000000	Y	D80		
31	D031	2000000	Y	D80		
32	D032	2000000	Y	D80		
33	D033	2000000	Y	D80		
34	D034	2000000	Y	D80		
35	D035	2000000	Y	D80		
36	D036	2000000	Y	D80		
37	D037	2000000	Y	D80		
38	D038	2000000	Y	D80		
39	D039	2000000	Y	D80		
40	D040	2000000	Y	D80		
41	D041	2000000	Y	D80		
42	D042	2000000	Y	D80		
43	D043	2000000	Y	D80		
44	F001	2000000	Y	D80		
45	F002	2000000	Y	D80		
46	F003	2000000	Y	D80		
47	F004	2000000	Y	D80		
48	F005	2000000	Y	D80		
49	F006	2000000	Y	D80		
50	F007	2000000	Y	D80		
51	F008	2000000	Y	D80		
52	F009	2000000	Y	D80		

[R] Reacted

Description of Acceptable Hazardous Wastes
Wayne Disposal, Inc., Site # 2
MID 048 090 633

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
53	F010	2000000	Y	D80		
54	F011	2000000	Y	D80		
55	F012	2000000	Y	D80		
56	F019	2000000	Y	D80		
57	F020	2000000	Y	D80		
58	F021	2000000	Y	D80		
59	F022	2000000	Y	D80		
60	F023	2000000	Y	D80		
61	F024	2000000	Y	D80		
62	F025	2000000	Y	D80		
63	F026	2000000	Y	D80		
64	F027	2000000	Y	D80		
65	F028	2000000	Y	D80		
66	F032	2000000	Y	D80		
67	F034	2000000	Y	D80		
68	F035	2000000	Y	D80		
69	F037	2000000	Y	D80		
70	F038	2000000	Y	D80		
71	F039	2000000	Y	D80		
72	K001	2000000	Y	D80		
73	K002	2000000	Y	D80		
74	K003	2000000	Y	D80		
75	K004	2000000	Y	D80		
76	K005	2000000	Y	D80		
77	K006	2000000	Y	D80		
78	K007	2000000	Y	D80		
79	K008	2000000	Y	D80		
80	K009	2000000	Y	D80		
81	K010	2000000	Y	D80		
82	K011	2000000	Y	D80		
83	K013	2000000	Y	D80		
84	K014	2000000	Y	D80		
85	K015	2000000	Y	D80		
86	K016	2000000	Y	D80		
87	K017	2000000	Y	D80		
88	K018	2000000	Y	D80		
89	K019	2000000	Y	D80		
90	K020	2000000	Y	D80		
91	K021	2000000	Y	D80		
92	K022	2000000	Y	D80		
93	K023	2000000	Y	D80		
94	K024	2000000	Y	D80		
95	K025	2000000	Y	D80		
96	K026	2000000	Y	D80		
97	K027[R]	2000000	Y	D80		
98	K028	2000000	Y	D80		
99	K029	2000000	Y	D80		
100	K030	2000000	Y	D80		
101	K031	2000000	Y	D80		
102	K032	2000000	Y	D80		
103	K033	2000000	Y	D80		
104	K034	2000000	Y	D80		

[R] Reacted

Description of Acceptable Hazardous Wastes
Wayne Disposal, Inc., Site # 2
MID 048 090 633

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
105	K035	2000000	Y	D80		
106	K036	2000000	Y	D80		
107	K037	2000000	Y	D80		
108	K038	2000000	Y	D80		
109	K039	2000000	Y	D80		
110	K040	2000000	Y	D80		
111	K041	2000000	Y	D80		
112	K042	2000000	Y	D80		
113	K043	2000000	Y	D80		
114	K044^{R}	2000000	Y	D80		
115	K045^{R}	2000000	Y	D80		
116	K046	2000000	Y	D80		
117	K047^{R}	2000000	Y	D80		
118	K048	2000000	Y	D80		
119	K049	2000000	Y	D80		
120	K050	2000000	Y	D80		
121	K051	2000000	Y	D80		
122	K052	2000000	Y	D80		
123	K060	2000000	Y	D80		
124	K061	2000000	Y	D80		
125	K062	2000000	Y	D80		
126	K069	2000000	Y	D80		
127	K071	2000000	Y	D80		
128	K073	2000000	Y	D80		
129	K083	2000000	Y	D80		
130	K084	2000000	Y	D80		
131	K085	2000000	Y	D80		
132	K086	2000000	Y	D80		
133	K087	2000000	Y	D80		
134	K088	2000000	Y	D80		
135	K090	2000000	Y	D80		
136	K091	2000000	Y	D80		
137	K093	2000000	Y	D80		
138	K094	2000000	Y	D80		
139	K095	2000000	Y	D80		
140	K096	2000000	Y	D80		
141	K097	2000000	Y	D80		
142	K098	2000000	Y	D80		
143	K099	2000000	Y	D80		
144	K100	2000000	Y	D80		
145	K101	2000000	Y	D80		
146	K102	2000000	Y	D80		
147	K103	2000000	Y	D80		
148	K104	2000000	Y	D80		
149	K105	2000000	Y	D80		
150	K106	2000000	Y	D80		
151	K107	2000000	Y	D80		
152	K108	2000000	Y	D80		
153	K109	2000000	Y	D80		
154	K110	2000000	Y	D80		
155	K111	2000000	Y	D80		

^{R}Reacted

Description of Acceptable Hazardous Wastes
Wayne Disposal, Inc., Site # 2
MID 048 090 633

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
156	K112	2000000	Y	D80		
157	K113	2000000	Y	D80		
158	K114	2000000	Y	D80		
159	K115	2000000	Y	D80		
160	K116	2000000	Y	D80		
161	K117	2000000	Y	D80		
162	K118	2000000	Y	D80		
163	K123	2000000	Y	D80		
164	K124	2000000	Y	D80		
165	K125	2000000	Y	D80		
166	K126	2000000	Y	D80		
167	K131	2000000	Y	D80		
168	K132	2000000	Y	D80		
169	K136	2000000	Y	D80		
170	K141	2000000	Y	D80		
171	K142	2000000	Y	D80		
172	K143	2000000	Y	D80		
173	K144	2000000	Y	D80		
174	K145	2000000	Y	D80		
175	K147	2000000	Y	D80		
176	K148	2000000	Y	D80		
177	K149	2000000	Y	D80		
178	K150	2000000	Y	D80		
179	K151	2000000	Y	D80		
180	K156	2000000	Y	D80		
181	K157	2000000	Y	D80		
182	K158	2000000	Y	D80		
183	K159	2000000	Y	D80		
184	K161	2000000	Y	D80		
185	K169	2000000	Y	D80		
186	K170	2000000	Y	D80		
187	K171	2000000	Y	D80		
188	K172	2000000	Y	D80		
189	K174	2000000	Y	D80		
191	K176	2000000	Y	D80		
192	K177	2000000	Y	D80		
193	K178	2000000	Y	D80		
194	K181	2000000	Y	D80		
195	P001	2000000	Y	D80		
196	P002	2000000	Y	D80		
197	P003	2000000	Y	D80		
198	P004	2000000	Y	D80		
199	P005	2000000	Y	D80		
200	P006	2000000	Y	D80		
201	P007	2000000	Y	D80		
202	P008	2000000	Y	D80		
203	P009	2000000	Y	D80		
204	P010	2000000	Y	D80		
205	P011	2000000	Y	D80		
206	P012	2000000	Y	D80		
207	P013	2000000	Y	D80		
208	P014	2000000	Y	D80		

[R] Reacted

Description of Acceptable Hazardous Wastes
Wayne Disposal, Inc., Site # 2
MID 048 090 633

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE	D1 PROCESS CODES		
209	P015	2000000	Y	D80		
210	P016	2000000	Y	D80		
211	P017	2000000	Y	D80		
212	P018	2000000	Y	D80		
213	P020	2000000	Y	D80		
214	P021	2000000	Y	D80		
215	P022	2000000	Y	D80		
216	P023	2000000	Y	D80		
217	P024	2000000	Y	D80		
218	P026	2000000	Y	D80		
219	P027	2000000	Y	D80		
220	P028	2000000	Y	D80		
221	P029	2000000	Y	D80		
222	P030	2000000	Y	D80		
223	P031	2000000	Y	D80		
224	P033	2000000	Y	D80		
225	P034	2000000	Y	D80		
226	P036	2000000	Y	D80		
227	P037	2000000	Y	D80		
228	P038	2000000	Y	D80		
229	P039	2000000	Y	D80		
230	P040	2000000	Y	D80		
231	P041	2000000	Y	D80		
232	P042	2000000	Y	D80		
233	P043	2000000	Y	D80		
234	P044	2000000	Y	D80		
235	P045	2000000	Y	D80		
236	P046	2000000	Y	D80		
237	P047	2000000	Y	D80		
238	P048	2000000	Y	D80		
239	P049	2000000	Y	D80		
240	P050	2000000	Y	D80		
241	P051	2000000	Y	D80		
242	P054	2000000	Y	D80		
243	P056	2000000	Y	D80		
244	P057	2000000	Y	D80		
245	P058	2000000	Y	D80		
246	P059	2000000	Y	D80		
247	P060	2000000	Y	D80		
248	P062	2000000	Y	D80		
249	P063	2000000	Y	D80		
250	P064	2000000	Y	D80		
251	P065	2000000	Y	D80		
252	P066	2000000	Y	D80		
253	P067	2000000	Y	D80		
254	P068	2000000	Y	D80		
255	P069	2000000	Y	D80		
256	P070	2000000	Y	D80		
257	P071	2000000	Y	D80		
258	P072	2000000	Y	D80		
259	P073	2000000	Y	D80		
260	P074	2000000	Y	D80		

[R]Reacted

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
261	P075	2000000	Y	D80		
262	P076	2000000	Y	D80		
263	P077	2000000	Y	D80		
264	P078	2000000	Y	D80		
265	P081	2000000	Y	D80		
266	P082	2000000	Y	D80		
267	P084	2000000	Y	D80		
268	P085	2000000	Y	D80		
269	P087	2000000	Y	D80		
270	P088	2000000	Y	D80		
271	P089	2000000	Y	D80		
272	P092	2000000	Y	D80		
273	P093	2000000	Y	D80		
274	P094	2000000	Y	D80		
275	P095	2000000	Y	D80		
276	P096	2000000	Y	D80		
277	P097	2000000	Y	D80		
278	P098	2000000	Y	D80		
279	P099	2000000	Y	D80		
280	P101	2000000	Y	D80		
281	P102	2000000	Y	D80		
282	P103	2000000	Y	D80		
283	P104	2000000	Y	D80		
284	P105	2000000	Y	D80		
285	P106	2000000	Y	D80		
286	P108	2000000	Y	D80		
287	P109	2000000	Y	D80		
288	P110	2000000	Y	D80		
289	P111	2000000	Y	D80		
290	P112	2000000	Y	D80		
291	P113	2000000	Y	D80		
292	P114	2000000	Y	D80		
293	P115	2000000	Y	D80		
294	P116	2000000	Y	D80		
295	P118	2000000	Y	D80		
296	P119	2000000	Y	D80		
297	P120	2000000	Y	D80		
298	P121	2000000	Y	D80		
299	P122	2000000	Y	D80		
300	P123	2000000	Y	D80		
301	P127	2000000	Y	D80		
302	P128	2000000	Y	D80		
303	P185	2000000	Y	D80		
304	P188	2000000	Y	D80		
305	P189	2000000	Y	D80		
306	P190	2000000	Y	D80		
307	P191	2000000	Y	D80		
308	P192	2000000	Y	D80		
309	P194	2000000	Y	D80		
310	P196	2000000	Y	D80		
311	P197	2000000	Y	D80		
312	P198	2000000	Y	D80		

^{R}Reacted

Description of Acceptable Hazardous Wastes
Wayne Disposal, Inc., Site # 2
MID 048 090 633

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
313	P199	2000000	Y	D80		
314	P201	2000000	Y	D80		
315	P202	2000000	Y	D80		
316	P203	2000000	Y	D80		
317	P204	2000000	Y	D80		
318	P205	2000000	Y	D80		
319	U001	2000000	Y	D80		
320	U002	2000000	Y	D80		
321	U003	2000000	Y	D80		
322	U004	2000000	Y	D80		
323	U005	2000000	Y	D80		
324	U006	2000000	Y	D80		
325	U007	2000000	Y	D80		
326	U008	2000000	Y	D80		
327	U009	2000000	Y	D80		
328	U010	2000000	Y	D80		
329	U011	2000000	Y	D80		
330	U012	2000000	Y	D80		
331	U014	2000000	Y	D80		
332	U015	2000000	Y	D80		
333	U016	2000000	Y	D80		
334	U017	2000000	Y	D80		
335	U018	2000000	Y	D80		
336	U019	2000000	Y	D80		
337	U020	2000000	Y	D80		
338	U021	2000000	Y	D80		
339	U022	2000000	Y	D80		
340	U023	2000000	Y	D80		
341	U024	2000000	Y	D80		
342	U025	2000000	Y	D80		
343	U026	2000000	Y	D80		
344	U027	2000000	Y	D80		
345	U028	2000000	Y	D80		
346	U029	2000000	Y	D80		
347	U030	2000000	Y	D80		
348	U031	2000000	Y	D80		
349	U032	2000000	Y	D80		
350	U033	2000000	Y	D80		
351	U034	2000000	Y	D80		
352	U035	2000000	Y	D80		
353	U036	2000000	Y	D80		
354	U037	2000000	Y	D80		
355	U038	2000000	Y	D80		
356	U039	2000000	Y	D80		
357	U041	2000000	Y	D80		
358	U042	2000000	Y	D80		
359	U043	2000000	Y	D80		
360	U044	2000000	Y	D80		
361	U045	2000000	Y	D80		
362	U046	2000000	Y	D80		
363	U047	2000000	Y	D80		
364	U048	2000000	Y	D80		

^{R}Reacted

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
365	U049	2000000	Y	D80		
366	U050	2000000	Y	D80		
367	U051	2000000	Y	D80		
368	U052	2000000	Y	D80		
369	U053	2000000	Y	D80		
370	U055	2000000	Y	D80		
371	U056	2000000	Y	D80		
372	U057	2000000	Y	D80		
373	U058	2000000	Y	D80		
374	U059	2000000	Y	D80		
375	U060	2000000	Y	D80		
376	U061	2000000	Y	D80		
377	U062	2000000	Y	D80		
378	U063	2000000	Y	D80		
379	U064	2000000	Y	D80		
380	U066	2000000	Y	D80		
381	U067	2000000	Y	D80		
382	U068	2000000	Y	D80		
383	U069	2000000	Y	D80		
384	U070	2000000	Y	D80		
385	U071	2000000	Y	D80		
386	U072	2000000	Y	D80		
387	U073	2000000	Y	D80		
388	U074	2000000	Y	D80		
389	U075	2000000	Y	D80		
390	U076	2000000	Y	D80		
391	U077	2000000	Y	D80		
392	U078	2000000	Y	D80		
393	U079	2000000	Y	D80		
394	U080	2000000	Y	D80		
395	U081	2000000	Y	D80		
396	U082	2000000	Y	D80		
397	U083	2000000	Y	D80		
398	U084	2000000	Y	D80		
399	U085	2000000	Y	D80		
400	U086	2000000	Y	D80		
401	U087	2000000	Y	D80		
402	U088	2000000	Y	D80		
403	U089	2000000	Y	D80		
404	U090	2000000	Y	D80		
405	U091	2000000	Y	D80		
406	U092	2000000	Y	D80		
407	U093	2000000	Y	D80		
408	U094	2000000	Y	D80		
409	U095	2000000	Y	D80		
410	U096	2000000	Y	D80		
411	U097	2000000	Y	D80		
412	U098	2000000	Y	D80		
413	U099	2000000	Y	D80		
414	U101	2000000	Y	D80		
415	U102	2000000	Y	D80		
416	U103	2000000	Y	D80		

^{R}Reacted

Description of Acceptable Hazardous Wastes
Wayne Disposal, Inc., Site # 2
MID 048 090 633

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
417	U105	2000000	Y	D80		
418	U106	2000000	Y	D80		
419	U107	2000000	Y	D80		
420	U108	2000000	Y	D80		
421	U109	2000000	Y	D80		
422	U110	2000000	Y	D80		
423	U111	2000000	Y	D80		
424	U112	2000000	Y	D80		
425	U113	2000000	Y	D80		
426	U114	2000000	Y	D80		
427	U115	2000000	Y	D80		
428	U116	2000000	Y	D80		
429	U117	2000000	Y	D80		
430	U118	2000000	Y	D80		
431	U119	2000000	Y	D80		
432	U120	2000000	Y	D80		
433	U121	2000000	Y	D80		
434	U122	2000000	Y	D80		
435	U123	2000000	Y	D80		
436	U124	2000000	Y	D80		
437	U125	2000000	Y	D80		
438	U126	2000000	Y	D80		
439	U127	2000000	Y	D80		
440	U128	2000000	Y	D80		
441	U129	2000000	Y	D80		
442	U130	2000000	Y	D80		
443	U131	2000000	Y	D80		
444	U132	2000000	Y	D80		
445	U133	2000000	Y	D80		
446	U134	2000000	Y	D80		
447	U135	2000000	Y	D80		
448	U136	2000000	Y	D80		
449	U137	2000000	Y	D80		
450	U138	2000000	Y	D80		
451	U140	2000000	Y	D80		
452	U141	2000000	Y	D80		
453	U142	2000000	Y	D80		
454	U143	2000000	Y	D80		
455	U144	2000000	Y	D80		
456	U145	2000000	Y	D80		
457	U146	2000000	Y	D80		
458	U147	2000000	Y	D80		
459	U148	2000000	Y	D80		
460	U149	2000000	Y	D80		
461	U150	2000000	Y	D80		
462	U151	2000000	Y	D80		
463	U152	2000000	Y	D80		
464	U153	2000000	Y	D80		
465	U154	2000000	Y	D80		
466	U155	2000000	Y	D80		
467	U156	2000000	Y	D80		
468	U157	2000000	Y	D80		

^{R}Reacted

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
469	U158	2000000	Y	D80		
470	U159	2000000	Y	D80		
471	U160	2000000	Y	D80		
472	U161	2000000	Y	D80		
473	U162	2000000	Y	D80		
474	U163	2000000	Y	D80		
475	U164	2000000	Y	D80		
476	U165	2000000	Y	D80		
477	U166	2000000	Y	D80		
478	U167	2000000	Y	D80		
479	U168	2000000	Y	D80		
480	U169	2000000	Y	D80		
481	U170	2000000	Y	D80		
482	U171	2000000	Y	D80		
483	U172	2000000	Y	D80		
484	U173	2000000	Y	D80		
485	U174	2000000	Y	D80		
486	U176	2000000	Y	D80		
487	U177	2000000	Y	D80		
488	U178	2000000	Y	D80		
489	U179	2000000	Y	D80		
490	U180	2000000	Y	D80		
491	U181	2000000	Y	D80		
492	U182	2000000	Y	D80		
493	U183	2000000	Y	D80		
494	U184	2000000	Y	D80		
495	U185	2000000	Y	D80		
496	U186	2000000	Y	D80		
497	U187	2000000	Y	D80		
498	U188	2000000	Y	D80		
499	U189	2000000	Y	D80		
500	U190	2000000	Y	D80		
501	U191	2000000	Y	D80		
502	U192	2000000	Y	D80		
503	U193	2000000	Y	D80		
504	U194	2000000	Y	D80		
505	U196	2000000	Y	D80		
506	U197	2000000	Y	D80		
507	U200	2000000	Y	D80		
508	U201	2000000	Y	D80		
509	U202	2000000	Y	D80		
510	U203	2000000	Y	D80		
511	U204	2000000	Y	D80		
512	U205	2000000	Y	D80		
513	U206	2000000	Y	D80		
514	U207	2000000	Y	D80		
515	U208	2000000	Y	D80		
516	U209	2000000	Y	D80		
517	U210	2000000	Y	D80		
518	U211	2000000	Y	D80		
519	U213	2000000	Y	D80		
520	U214	2000000	Y	D80		

[R]Reacted

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
521	U215	2000000	Y	D80		
522	U216	2000000	Y	D80		
523	U217	2000000	Y	D80		
524	U218	2000000	Y	D80		
525	U219	2000000	Y	D80		
526	U220	2000000	Y	D80		
527	U221	2000000	Y	D80		
528	U222	2000000	Y	D80		
529	U223	2000000	Y	D80		
530	U225	2000000	Y	D80		
531	U226	2000000	Y	D80		
532	U227	2000000	Y	D80		
533	U228	2000000	Y	D80		
534	U234	2000000	Y	D80		
535	U235	2000000	Y	D80		
536	U236	2000000	Y	D80		
537	U237	2000000	Y	D80		
538	U238	2000000	Y	D80		
539	U239	2000000	Y	D80		
540	U240	2000000	Y	D80		
541	U243	2000000	Y	D80		
542	U244	2000000	Y	D80		
543	U246	2000000	Y	D80		
544	U247	2000000	Y	D80		
545	U248	2000000	Y	D80		
546	U249	2000000	Y	D80		
547	U271	2000000	Y	D80		
548	U278	2000000	Y	D80		
549	U279	2000000	Y	D80		
550	U280	2000000	Y	D80		
551	U328	2000000	Y	D80		
552	U353	2000000	Y	D80		
553	U359	2000000	Y	D80		
554	U364	2000000	Y	D80		
555	U367	2000000	Y	D80		
556	U372	2000000	Y	D80		
557	U373	2000000	Y	D80		
558	U387	2000000	Y	D80		
559	U389	2000000	Y	D80		
560	U394	2000000	Y	D80		
561	U395	2000000	Y	D80		
562	U404	2000000	Y	D80		
563	U409	2000000	Y	D80		
564	U410	2000000	Y	D80		
565	U411	2000000	Y	D80		
566	001S	2000000	Y	D80		
567	002S	2000000	Y	D81		
568	003S	2000000	Y	D82		
569	004S	2000000	Y	D83		
570	005S	2000000	Y	D84		
571	006S	2000000	Y	D85		
572	007S	2000000	Y	D86		

[R] Reacted

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
573	001K	2000000	Y	D80		
574	002K	2000000	Y	D80		
575	001U	2000000	Y	D80		
576	002U	2000000	Y	D80		
577	003U	2000000	Y	D80		
578	004U	2000000	Y	D80		
579	005U	2000000	Y	D80		
580	006U	2000000	Y	D80		
581	007U	2000000	Y	D80		
582	008U	2000000	Y	D80		
583	009U	2000000	Y	D80		
584	011U	2000000	Y	D80		
585	012U	2000000	Y	D80		
586	013U	2000000	Y	D80		
587	014U	2000000	Y	D80		
588	015U	2000000	Y	D80		
589	016U	2000000	Y	D80		
590	017U	2000000	Y	D80		
591	020U	2000000	Y	D80		
592	021U	2000000	Y	D80		
593	022U	2000000	Y	D80		
594	023U	2000000	Y	D80		
595	024U	2000000	Y	D80		
596	025U	2000000	Y	D80		
597	027U	2000000	Y	D80		
598	028U	2000000	Y	D80		
599	029U	2000000	Y	D80		
600	030U	2000000	Y	D80		
601	031U	2000000	Y	D80		
602	032U	2000000	Y	D80		
603	033U	2000000	Y	D80		
604	034U	2000000	Y	D80		
605	036U	2000000	Y	D80		
606	037U	2000000	Y	D80		
607	038U	2000000	Y	D80		
608	040U	2000000	Y	D80		
609	041U	2000000	Y	D80		
610	042U	2000000	Y	D80		
611	043U	2000000	Y	D80		
612	044U	2000000	Y	D80		
613	046U	2000000	Y	D80		
614	047U	2000000	Y	D80		
615	048U	2000000	Y	D80		
616	049U	2000000	Y	D80		
617	050U	2000000	Y	D80		
618	051U	2000000	Y	D80		
619	052U	2000000	Y	D80		
620	054U	2000000	Y	D80		
621	055U	2000000	Y	D80		
622	056U	2000000	Y	D80		
623	057U	2000000	Y	D80		
624	058U	2000000	Y	D80		

^{R}Reacted

Description of Acceptable Hazardous Wastes
Wayne Disposal, Inc., Site # 2
MID 048 090 633

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	D1 PROCESS CODES		
625	059U	2000000	Y	D80		
626	061U	2000000	Y	D80		
627	063U	2000000	Y	D80		
628	064U	2000000	Y	D80		
629	065U	2000000	Y	D80		
630	068U	2000000	Y	D80		
631	070U	2000000	Y	D80		
632	071U	2000000	Y	D80		
633	072U	2000000	Y	D80		
634	073U	2000000	Y	D80		
635	074U	2000000	Y	D80		
636	075U	2000000	Y	D80		
637	076U	2000000	Y	D80		
638	077U	2000000	Y	D80		
639	078U	2000000	Y	D80		
640	079U	2000000	Y	D80		
641	080U	2000000	Y	D80		
642	082U	2000000	Y	D80		
643	083U	2000000	Y	D80		
644	086U	2000000	Y	D80		
645	088U	2000000	Y	D80		
646	089U	2000000	Y	D80		
647	090U	2000000	Y	D80		
648	092U	2000000	Y	D80		
649	093U	2000000	Y	D80		
650	094U	2000000	Y	D80		
651	095U	2000000	Y	D80		
652	096U	2000000	Y	D80		
653	097U	2000000	Y	D80		
654	098U	2000000	Y	D80		
655	099U	2000000	Y	D80		
656	100U	2000000	Y	D80		
657	101U	2000000	Y	D80		
658	102U	2000000	Y	D80		
659	103U	2000000	Y	D80		
660	104U	2000000	Y	D80		
661	106U	2000000	Y	D80		
662	108U	2000000	Y	D80		
663	110U	2000000	Y	D80		
664	111U	2000000	Y	D80		
665	112U	2000000	Y	D80		
666	113U	2000000	Y	D80		
667	114U	2000000	Y	D80		
668	115U	2000000	Y	D80		
669	116U	2000000	Y	D80		
670	117U	2000000	Y	D80		
671	118U	2000000	Y	D80		
672	119U	2000000	Y	D80		
673	120U	2000000	Y	D80		
674	121U	2000000	Y	D80		
675	122U	2000000	Y	D80		
676	124U	2000000	Y	D80		

^{R}Reacted

Description of Acceptable Hazardous Wastes
Wayne Disposal, Inc., Site # 2
MID 048 090 633

LINE NO.	A. EPA Hazardous Waste Code	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C.UNIT OF MEASURE	DI PROCESS CODES		
677	127U	2000000	Y	D80		
678	128U	2000000	Y	D80		
679	129U	2000000	Y	D80		
680	131U	2000000	Y	D80		
681	132U	2000000	Y	D80		
682	134U	2000000	Y	D80		
683	135U	2000000	Y	D80		
684	136U	2000000	Y	D80		
685	137U	2000000	Y	D80		
686	138U	2000000	Y	D80		
687	139U	2000000	Y	D80		
688	140U	2000000	Y	D80		
689	141U	2000000	Y	D80		
690	142U	2000000	Y	D80		
691	143U	2000000	Y	D80		
692	144U	2000000	Y	D80		
693	146U	2000000	Y	D80		
694	147U	2000000	Y	D80		
695	148U	2000000	Y	D80		
696	150U	2000000	Y	D80		
697	151U	2000000	Y	D80		
698	152U	2000000	Y	D80		
699	153U	2000000	Y	D80		
700	154U	2000000	Y	D80		
701	155U	2000000	Y	D80		
702	157U	2000000	Y	D80		
703	158U	2000000	Y	D80		
704	159U	2000000	Y	D80		
705	160U	2000000	Y	D80		
706	161U	2000000	Y	D80		
707	162U	2000000	Y	D80		
708	163U	2000000	Y	D80		
709	164U	2000000	Y	D80		
710	165U	2000000	Y	D80		
711	166U	2000000	Y	D80		
712	167U	2000000	Y	D80		
713	168U	2000000	Y	D80		
714	169U	2000000	Y	D80		
715	170U	2000000	Y	D80		
716	171U	2000000	Y	D80		
717	172U	2000000	Y	D80		
718	173U	2000000	Y	D80		
719	174U	2000000	Y	D80		
720	175U	2000000	Y	D80		
721	PCBs	2000000	Y	D80		
722	CAMU-eligible	2000000	Y	D80		

^{R}Reacted

APPENDIX B

WAYNE DISPOSAL INC. AND MICHIGAN DISPOSAL WASTE TREATMENT PLANT RADIOLOGICAL WASTE

Wayne Disposal, Inc. (WDI), the Michigan Disposal Waste Treatment Plant (MDWTP), and radioactive material received, processed, and disposed at these sites are regulated under Part 135, Radiation Control, of the Public Health Code, 1978 PA 368, as amended (MCL 333.13501 to 333.13537) and the associated "Ionizing Radiation Rules for Radioactive Material" (IRR).

Radiological waste will be approved and accepted consistent with procedures outlined for all waste in the Waste Analysis Plan.

Michigan Disposal Waste Treatment Plant

MDWTP is authorized to receive material containing radium-226, radium-228, lead-210, and their progeny at any concentration for waste treatment and/or aggregation. MDWTP is also authorized to receive and treat waste meeting at least one of the IRR exemptions below including source material that meets the uranium and thorium criteria in Table 1. MDWTP may not process any exempt devices for treatment.

Wayne Disposal, Inc.

Before placement in the WDI landfill, radiological waste will either meet the limits specified in the following Table 1 or meet an applicable exemption from the IRR.

Table 1 – Michigan Concentration-Specific Landfill Limits

Nuclide	Concentration
Ra-226	50 pCi/g
Pb-210	260 pCi/g
Total combined uranium and thorium*	Less than 500 mg/kg

* Consistent with R 325.5052, "Source material as low percentage of weight" and 10 CFR 40.13, "Unimportant Quantities of Source Material."

Applicable Exemptions from the "Ionizing Radiation Rules"

In instances where the current regulations in Part 10 of the Code of Federal Regulations differ from the IRR, the material must meet both exemption specifications. Administrative modifications of the exemptions provided below may be made without prior approval from the DEQ if the change is made to reflect a change in the IRR.

R 325.5052 Source material as low percentage of weight.
Rule 52. A person is exempt from this part to the extent that he or she receives, possesses, uses, or transfers source material in any chemical mixture, compound, solution, or alloy in which the source material is by weight less than 1/20 of 1% (0.05%) of the mixture, compound, solution, or alloy.

R 325.5053 Unprocessed ore containing source material.

Rule 53. A person is exempt from this part to the extent that he or she receives, possesses, uses, or transfers unrefined and unprocessed ore containing source material. However, the person shall not refine or process such ore except as authorized in a specific license.

R 325.5054 Thorium used in certain articles.

Rule 54. A person is exempt from this part to the extent that he or she receives, possesses, uses, or transfers any quantity of thorium contained in the following:

(a) Incandescent gas mantles.
(b) Vacuum tubes.
(c) Welding rods.
(d) Electric lamps for illuminating purposes if each lamp does not contain more than 50 milligrams of thorium.
(e) Germicidal lamps, sunlamps, and lamps for outdoor or industrial lighting if each lamp does not contain more than 2 grams of thorium.
(f) Rare earth metals and compounds, mixtures, and products containing not more than 0.25% by weight thorium, uranium, or any combination of these.

R 325.5055 Source material contained in ceramic and other articles.

Rule 55. A person is exempt from this part to the extent that he or she receives, possesses, uses, or transfers the following:

(a) Source material contained in the following products:
    (i) Glazed ceramic tableware, if the glaze contains not more than 20% by weight source material.
    (ii) Glassware, glass enamel, and glass enamel frit containing not more than 10% by weight source material; but not including commercially manufactured glass brick, pane glass, ceramic tile, or other glass, glass enamel, or ceramic used in construction.
    (iii) Piezoelectric ceramic containing not more than 2% by weight source material.
(b) Photographic film, negatives, and prints containing uranium or thorium.
(c) A finished product or part fabricated of, or containing, tungsten-thorium or magnesium/thorium alloys, if the thorium content of the alloy does not exceed 4% by weight. The exemption contained in this paragraph does not authorize the chemical, physical, or metallurgical treatment or processing of any such product or part.

R 325.5058 Thorium contained in lenses.

Rule 58. A person is exempt from this part to the extent that he or she receives, possesses, uses, or transfers thorium contained in finished optical lenses, if each lens does not contain more than 30% by weight of thorium. The exemption in this rule does not authorize either of the following:

(a) The shaping, grinding, or polishing of such lens or manufacturing processes other than the assembly of such lens into optical systems and devices without any alteration of the lens.
(b) The receipt, possession, use, or transfer of thorium contained in contact lenses, in spectacles or in eyepieces in binoculars or other optical instruments.

R 325.5059 Uranium contained in fire detection units.

Rule 59. A person is exempt from this part to the extent that he or she receives, possesses, uses, or transfers uranium contained in detector heads for use in fire detection units, if each detector head contains not more than 5 nanocuries of uranium.

R 325.5060 Thorium contained in aircraft engine parts.

Rule 60. A person is exempt from this part to the extent that he or she receives, possesses, uses, or transfers thorium contained in any finished aircraft engine part containing nickel-thoria alloy, if both of the following conditions are met:

(a) The thorium is dispersed in the nickel-thoria alloy in the form of finely divided thoria (thorium dioxide).
(b) The thorium content in the nickel-thoria alloy does not exceed 4% by weight.

R 325.5065 Exempt concentrations.
Rule 65. Except as provided in Rule 66, a person is exempt from this part to the extent that he or she owns, receives, acquires, possesses, uses, or transfers products or materials containing radioactive material in concentrations not in excess of those listed in Rule 146.

R 325.5067 Items containing tritium, promethium-147, or radium.
Rule 67. Except for persons who apply tritium, promethium-147, or radium to, or persons who incorporate tritium, promethium-147, or radium into, the following products, a person is exempt from these rules to the extent that he or she owns, receives, acquires, possesses, uses, or transfers the following products:
(a) Timepieces or timepiece hands or dials containing not more than the following specified quantities of radioactive material and not exceeding the following specified levels of radiation:
    (i) 25 millicuries of tritium per timepiece.
    (ii) 5 millicuries of tritium per hand.
    (iii) 15 millicuries of tritium per dial; bezels when used shall be considered as part of the dial.
    (iv) 100 microcuries of promethium-147 per watch or 200 microcuries of promethium-147 per any other timepiece.
    (v) 20 microcuries of promethium-147 per watch hand or 40 microcuries of promethium-147 per other timepiece hand.
    (vi) 60 microcuries of promethium-147 per watch dial or 120 microcuries of promethium-147 per other timepiece dial; bezels when used shall be considered as part of the dial.
    (vii) The levels of radiation from hands and dials containing promethium-147 will not exceed, when measured through 50 milligrams per square centimeter of absorber, the following:
        (aa) For wrist watches, 0.1 millirad per hour at 10 centimeters from any surface.
        (bb) For pocket watches, 0.1 millirad per hour at 1 centimeter from any surface.
        (cc) For any other timepiece, 0.2 millirad per hour at 10 centimeters from any surface.
(b) Timepieces or timepiece hands or dials containing not more than the following specified quantities of radium and meeting the following expressed conditions:
    (i) 0.15 microcuries of radium per watch.
    (ii) 0.03 microcuries of radium per watch hand.
    (iii) 0.09 microcuries of radium per watch dial.
    (iv) 0.20 microcuries of radium per clock.
    (v) 0.04 microcuries of radium per clock hand.
    (vi) 0.12 microcuries of radium per clock dial.
    (vii) The timepiece is not a pocket watch.
    (viii) Timepieces or timepiece hands or dials containing radium that were manufactured before the effective date of these rules.
    (ix) The timepiece is marked or coded to identify the date of manufacture and that it contains radium.
    (x) The timepiece emits sufficient luminosity, omitting photoactivation, that its dial can be read in the dark during its entire design lifetime.
(c) Lock illuminators containing not more than 15 millicuries of tritium or not more than 2 millicuries of promethium-147 installed in automobile locks. The levels of radiation from each lock illuminator containing promethium-147 will not exceed 1 millirad per hour at 1 centimeter from any surface when measured through 50 milligrams per square centimeter of absorber.
(d) Precision balances containing not more than 1 millicurie of tritium per balance or not more than 0.5 millicurie of tritium per balance part.
(e) Automobile shift quadrants containing not more than 25 millicuries of tritium.

(f) Marine compasses containing not more than 750 millicuries of tritium gas and other marine navigational instruments containing not more than 250 millicuries of tritium gas.

(g) Thermostat dials and pointers containing not more than 25 millicuries of tritium per thermostat.

(h) Electron tubes, including spark gap tubes, power tubes, gas tubes including glow lamps, receiving tubes, microwave tubes, indicator tubes, pick-up tubes, radiation detection tubes and any other completely sealed tube that is designed to conduct or control electrical currents, if the level of radiation due to radioactive material contained in each electron tube does not exceed 1 millirad per hour at 1 centimeter from any surface when measured through 7 milligrams per square centimeter of absorber and if each tube does not contain more than 1 of the following specified quantities of radioactive materials:
  - (i) 150 millicuries of tritium per microwave receiver protector tube or 10 millicuries of tritium per any other electron tube.
  - (ii) 1 microcurie of cobalt-60.
  - (iii) 5 microcuries of nickel-63.
  - (iv) 30 microcuries of krypton-85.
  - (v) 5 microcuries of cesium-137.
  - (vi) 30 microcuries of promethium-147.

(i) Ionizing radiation measuring instruments containing, for purposes of internal calibration or standardization, a source of radioactive material not exceeding the applicable quantity set forth in Rule 147.

R 325.5071 Resins containing scandium-46 for sand consolidation in oil wells.

Rule 71. A person is exempt from these rules to the extent that he or she owns, receives, acquires, possesses, uses, or transfers synthetic plastic resins containing scandium-46 which are designed for sand consolidation in oil wells if the resins were manufactured or imported in accordance with a specific license issued by the NRC, or were manufactured in accordance with the specifications contained in a specific license issued by the department or an agreement state to the manufacturer of such resins pursuant to licensing requirements equivalent to those in sections 32.16 and 32.17 of 10 CFR Part 32 of the regulations of the NRC. This exemption does not authorize the manufacturer of resins containing scandium-46.

R 325.5072 Gas and aerosol detectors.

Rule 72. Except for persons who manufacture, process, or produce gas and aerosol detectors, a person is exempt from these rules to the extent that he or she owns, receives, acquires, possesses, uses, or transfers the following:

(a) Byproduct material in gas and aerosol detectors designed to protect life or property from fires and airborne hazards, if the detectors containing byproduct material were manufactured, imported, or transferred in accordance with a specific license issued by the NRC pursuant to section 32.26 of 10 CFR Part 32, which license authorizes the transfer of the detectors to persons who are exempt from regulatory requirements.

(b) Naturally occurring material in gas and aerosol detectors designed to protect life or property from fires and airborne hazards, if the detectors containing naturally occurring material were manufactured, imported, or transferred in accordance with a specific license issued by the department or an agreement state pursuant to equivalent conditions as in section 32.26 of 10 CFR Part 32, which license authorizes the transfer of the detectors to persons who are exempt from regulatory requirements.

R 325.5073 Self-luminous products containing tritium, krypton-85, promethium-147, or radium-226.

Rule 73.

(1) Except for a person who manufactures, processes, or produces self-luminous products, a person is exempt from these regulations to the extent that he or she owns, receives, acquires, possesses, uses, or transfers the following:
  (a) Tritium, krypton-85, or promethium-147 in self-luminous products manufactured, processed, imported, or transferred in accordance with a specific license issued by the NRC pursuant to section 32.22 of 10 CFR Part 32, which license authorizes the transfer of the product to persons who are exempt from regulatory requirements.
  (b) Naturally occurring material in self-luminous products manufactured, processed, imported, or transferred in accordance with a specific license issued by the department or an agreement state pursuant to equivalent conditions as in section 32.22 of 10 CFR Part 32.

(2) The exemptions in subrule (1) of this rule do not apply to tritium, krypton-85, promethium-147, or naturally occurring material used in products for frivolous purposes or in toys or adornments.

R 325.5074 Exempt quantities.
Rule 74.

(1) Except as provided in subrules (3) and (4) of this rule, a person is exempt from these rules to the extent that he or she owns, receives, acquires, possesses, uses, or transfers a byproduct, naturally occurring, or accelerator material in individual quantities each of which does not exceed the applicable quantity set forth in Rule 147.

Other Determinations

An item with surface contamination including source material, radium-226, radium-228, and progeny may be disposed if the maximum near-contact gamma exposure rate is less than 40 microroentgens per hour above background. The documentation for each item shall include, at a minimum, the following:

a. Description of the item;
b. The manufacturer, model, and serial number of the meter and probe used;
c. The meter calibration date;
d. The background radiation measurement;
e. All gamma exposure measurements taken on the item;
f. The survey date and location; and
g. The surveyor's name and company.

WDI staff shall comply with the requirements of subrule 2 of R 325.5238, "Disposal of Radioactive Material," for disposal of any material not listed above. The subrule reads, in part,

> "A person may apply to the department for approval of proposed procedures to dispose of radioactive material in a manner not otherwise authorized in this part. The application shall include a description of the radioactive material, including the quantities and kinds of radioactive material and the levels of radioactivity involved, and the proposed manner and conditions of disposal."

Wayne Disposal Inc.
2018 TSCA Permit Renewal

Attachment 14
General Inspection Schedule

INSPECTION REQUIREMENTS

The administrative rules promulgated pursuant to Part 111, Hazardous Waste Management, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), being R 299.9504, R 299.9508, R 299.9605 and Title 40 of the Code of Federal Regulations (CFR) §§264.15 and 270.14(b)(5), establish requirements for inspections at hazardous waste management facilities. All references to 40 CFR citations specified herein are adopted by reference in R 299.11003

This license application addresses requirements for inspections at the following hazardous waste management facility: *Wayne Disposal Inc.* Michigan.
(Check as appropriate)

☒ Applicant for Operating License for Existing Facility

☐ Applicant for Operating License for New, Altered, Enlarged, or Expanded Facility

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INTRODUCTION

[R 299.9605 and 40 CFR §264.15(a)]

The facility is inspected for malfunctions and deterioration, operator errors, and discharges that may be causing, or may lead to: (1) release of hazardous waste constituents into the environment or (2) a threat to human health. The owner or operator must conduct these inspection often enough to identify problems in time to correct them before they harm human health or the environment

A5.A WRITTEN SCHEDULE

[R 299.9605 and 40 CFR §264.15(b)(1)]

The inspection schedule has been developed in accordance with the requirements outlined in 40CFR 264.195, 264.174 and 264.15, and is kept at the facility as part of the operating record.
Inspections have been developed for the following items in order to identify problems in time to correct them before they harm human health or the environment:

1) Monitoring equipment
2) Safety and emergency equipment
3) Security devices; and
4) Operating and structural equipment important to preventing, detecting, or responding to environmental or human health hazards.

A5.A.1 Types of Problems

[R 299.9605 and 40 CFR §264.15(b)(3)]

Landfill
The leachate collection system is inspected for the following items:

- Malfunction of leachate pump
- Flow meter malfunction
- Depth to leachate >1 foot above the primary liner

The leak detection system is inspected for the following items:

- Failure of the primary liner
- Malfunction of pump operation
- Improper protection of leak detection riser

Run-on/off controls are inspected for the following items:

- Erosion of interim cover
- Malfunction of storm water pumps
- Stressed vegetation

Tanks
Tank systems are inspected for the following items:

- Evidence of corrosion or release of waste from above ground tank system
- Erosion or evidence of a release in secondary containment systems

Emergency Equipment
Are inspected to ensure proper operation in the event of an emergency.

A5.A.2 Frequency of Inspection

[R 299.9605 and 40 CFR §§264.15(b)(4), 264.174, 264.193, 264.195 and 264.1084, 264.1086, 264.1089]

The frequency of inspection is based on the rate of possible deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, or malfunction, or any operator error goes undetected between inspections.

Landfill

In accordance with_40 CFR 264.303(b), WDI inspects the landfill weekly and after storms to detect evidence of any of the following:

Once each operating week:

- ◆ Proper functioning of wind dispersal control systems;
- ◆ Proper functioning of leachate collection and removal systems.
  - Pumps are operational
  - Flow meter has advanced
  - Leachate depth is <1 foot above the primary liner

Once each operating week and after >0.5 inches of rain

- ◆ Run-on and run-off control systems
  - Capacity can hold volume of water from a 24-hour, 100 year storm
    - o Pumps are operational
    - o Interim cover free of signs of stressed vegetation and erosion
    - o Dike is capable of preventing run on into the cell and run off out of the cell

Once each operating week or monthly as specified by Leak Detection Collection and Removal System Monitoring Plan:

In accordance with 40 CFR 264.303(c), WDI inspects the leak detection system in accordance with the following:

- Amount of liquids removed from each leak detection system sump
- Condition of the riser is acceptable
- No evidence of tapering
- Caps are present and properly seated
- Riser and sample port protected from direct contact with waste

Tank

In accordance with the requirements set forth in 40 CFR 264.193, 264.195, 264.1084 tank system components will be inspected as follows:

Once each operating day (every day the tank is in operation (i.e., storing or treating hazardous waste):

- ◆ Above ground portions of the tank including areas around the tank
  - o Erosion or signs of releases of hazardous waste
- ◆ Area around the tanks
  - o Free of cracks and gaps that could cause a release to the environment

- Accumulated precipitation is removed within 24 hours of detection in accordance with 40 CFR 264.193.
    - If spilled or leaked waste and accumulated precipitation cannot be removed from the secondary containment system within 24 hours, WDI will demonstrate to the DEQ that removal of the released waste or accumulated precipitation cannot be accomplished within 24 hours. (40 CFR 264.193(c)(4))

- Ancillary equipment without secondary containment
  - Equipment ancillary to Silos 1-6 will be inspected daily when hazardous waste is present in the tanks and the equipment is used. All other tank system ancillary equipment is in secondary containment.

Once each operating week:

- Leak detection system
  - Failure of the primary containment system resulting in hazardous waste in the secondary
    - If the leak detection system fails to detect the failure of the primary containment structure or the presence of any release within 24 hours, MDWTP will demonstrate to MDEQ that existing detection technologies or site conditions will not allow the detection of a release within 24 hours. (40 CFR 264.193(c)(3))

All tanks and ancillary equipment that must have secondary containment systems meet the requirements of 40 CFR 264.193. As a result, leak and fit testing of tanks and ancillary equipment will occur following the replacement or repair of the tank system.

The transfer tank receives waste meeting applicable LDR standards. As a result WDI does not store waste subject to Subpart CC requirements and is therefore exempt from subpart CC inspections.

Emergency Equipment

In accordance with the requirements set forth in 40 CFR 264.33 emergency equipment will be inspected monthly as follows:

- Fire extinguishing equipment
  - Completed and documented in accordance with MIOSHA inspection requirements found in R 408.10835.
- Spill control equipment
  - Present in sufficient quantities
- Decontamination Equipment
  - Operational

A5.B REMEDY SCHEDULE

[R 299.9605 and 40 CFR §264.15(c)]

The operator remedies any deterioration/malfunction of equipment or structures, which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action is taken immediately.

If an unacceptable condition is detected, it is reported to the facility manager in charge at that time. The facility manager assigns responsibility for corrective action and a deadline by which corrective action has to be taken on the condition.

On subsequent daily inspections, the inspector monitors the condition until the situation is completely rectified. Once it is rectified, the date and time that the correction was made is noted on the first and last inspection forms that note the problem.

A5.C INSPECTION LOG OR SUMMARY

[R 299.9605 and 40 CFR §264.15(d)]

Inspection records are maintained onsite at the facility as part of the operating record. These records, at a minimum, include the date and time of the inspection, the name of the inspector, a notation of the observations made, and the date and nature of any repairs or other remedial actions. These records are kept for at least three years from the date of inspection. (40 CFR 264.73(b)(5)

Form formats are revised as necessary for purposes of regulatory compliance or efficient recordkeeping by WDI. The attached inspection forms provide examples of the forms that are utilized to comply with the requirements of this attachment.

WAYNE DISPOSAL, INC. SITE #2
ACTIVE HAZARDOUS WASTE LANDFILL OPERATIONS
INSPECTION REPORT

Item	Description	Yes	No*	If "No" is checked, state required corrective action	Completed Yes/No
Daily					
1	Daily cover properly applied to new waste at end of work day and to previously covered areas where re-cover necessary due to weathering? Integrity of daily cover acceptable in all areas?[1]				
2	No spilled or tracked waste in area around transfer station?[2]				
3	After-Hours Waste Transfer Log is up to date?				
4	Is the Wheel Wash Operational?				
5	Is the Sweeper or Water Truck operational?				
6	Wind speed monitoring equipment is on and properly functioning?				
7	Wind Speed Monitoring Equipment Downtime Log is up to date?				
8	Wind speed sensor is no more than 10 ft below the elevation at which waste is currently being placed in the landfill, is located on the southwest slope of Master Cell VI, and is approximately vertical?				
Weekly					
10	Perimeter fence, gates and locks intact and secure? [3]				
Monthly					
11	Is the South Sedimentation Basin gate valve operational?				
12	Is the Landfill Fire Extinguisher present and charged?				
Quarterly					
13	Is there sufficient spill absorbent materials available on site				

Operating date: ______________________

Date and time cover application completed for specified operating date: ______________________

Signature of Inspector for items 2-15 (Landfill Manager or designated alternate): ______________________

Date of inspection for items 2-7: ______________________

Time of inspection for items 2-7: ______________________

---

[1] Daily cover is ConCover or 6 inches of soil. ConCover application in accordance with manufacturer's specification and of sufficient thickness and coverage to control dust emissions. New waste covered at end of each day. Previously covered waste that is becoming exposed due to weathering of cover material must be re-covered to required specification.

[2] Inspect for proper housekeeping around the truck transfer area (sweeping and shoveling of any waste material that may have fallen from truck bed onto the ground surface). Site personnel shall also follow the Track-out Management SOP (LOM-OP-012-BEL) and the Bulk Waste Unloading SOP (LOM-OP-001-BEL) to minimize or eliminate spillage/track-out.

[3] Performed daily when secondary gates are used. Inspect for vandalism, deterioration, or damage that could result in unauthorized entry to the active disposal area. Verify gates are locked.

WAYNE D SAL, INC. SITE #2
ACTIVE HAZARDOUS WASTE LANDFILL OPERATIONS
WEEKLY AND AFTER-STORM INSPECTION REPORT

Description	Yes	No	If "No", Explain, State Corrective Action.
Is this a WEEKLY inspection?			If yes, complete ENTIRE FORM
Is this an AFTER-STORM inspection?			If yes, complete ONLY Sections B & C
A. Leak Detection, Collection, and Removal System			Section A Inspected By: ____________ Date: ________
Sump riser caps present and properly seated?			
Condition of sump risers acceptable?			
No evidence of tampering?			
Is the top of the riser and sample port protected from direct contact with waste?			
Motor controller condition acceptable? Protected from weathering?			
B. Storm Water Structural Controls			Section B Inspected By: ____________ Date: ________
Contact water pumps and pump controls are properly functioning?			
Contact water is contained in the cell by separator berms and condition of berms is acceptable?			
C. Dike and Interim Cover Systems			Section C Inspected By: ____________ Date: ________
Interim cover free of signs of erosion which could leave waste exposed?			
Is the interim cover surface free of signs of stressed vegetation?			
Condition of perimeter dike acceptable? Able to prevent run-on into cell and runoff out of cell?			
Is the perimeter free of signs of waste outside of the active cell?			
Is the visual boundary around the active cell in tact?			

Specify Type of Inspection

Check yes for the appropriate type of inspection (i.e. a weekly or an after-storm inspection).

A. Leak Detection, Collection, and Removal System

Caps required at all times to prevent contaminants from entering the sumps. Check that caps are present and properly sealed.

Inspect aboveground exterior of sump risers for damage, buckling and deterioration.

Note if there is any evidence of tampering that could introduce contamination into the sump.

Waste must not be in contact with the sample port or in the vicinity of the riser opening.

If present, the pump control box must be closed and protected from weathering. If not in use the controller should be moved indoors.

B. Storm Water Structural Controls

Inspect containment berms for damage and wear that could result in failure to contain runoff either due to leakage, permeation, spillage over, or slope failure. Immediately report to the Landfill Manager (or designee) erosion, soil displacement, equipment-induced damage, cracks, wet soil during dry weather, etc.

C. Dike and Interim Cover Systems

Inspect interim cover soil for erosion which could lead to waste exposure.

Inspect interim cover soil for signs of stressed vegetation. Immediately notify the landfill manager (or designee) of any areas of stressed vegetation for further evaluation.

Inspect the perimeter dike for erosion and vehicle/equipment damage that could weaken the dike and/or allow runon into the cell or runoff out of the cell. Report any exposed geosynthetics. Report tire rutting which may have damaged underlying geosynthetics.

Inspect the perimeter of the active cell for debris that has blown outside of containment. Collect immediately and return to landfill.

Verify visual boundary around the active cell is intact.

WAYNE DISPOSAL SITE #2 LANDFILL
WASTE TRANSFER TANK INSPECTION REPORT

Daily ☐
Weekly ☐
Annual ☐

Date: ____________________
Time: ____________________
Inspector: ____________________

INTERVAL	DESCRIPTION	ACCEPTABLE?		CORRECTIVE ACTION (Who, What)	COMPLETED (When)
		Yes	No		
Daily	Cement Floor				
	Steel Walls				
	Sump				
Weekly	Leak Detection Observation Well				
	Run-on Control				
	Retaining Wall				
	Integrity of Contact Water Piping				
Annually	Cement Thickness				
	Steel Thickness				

INSPECTION CRITERIA

Daily

Cement Floor - Check for cracks, gaps, or damage to integrity of concrete surface.
Steel Walls - Check for damage to steel, loose bolts, and displacement along seams.
Sump - Check for water in sump. If water present, pump to contact water pond.

Weekly

Leak Detection Observation Well - Check for presence of water in leak detection well with electronic sounding device.
Run-on Control - Check curbs, gutters, speed bumps, and asphalt surface for damage or obstructions.
Retaining Wall - Check for erosion of earth or displacement of seams.
Integrity of Contact Water Piping - Check for water discharge within the contact water sump at the transition of the double-contained HDPE conveyance piping to the primary pump discharge pipe.

Annual

Cement Floor Thickness - Survey floor to determine how much wear has occurred, at 4-inches of wear the surface should be repaired.
Steel Thickness - Measure thickness to determine degree of degradation. Replace if less than two-thirds of the original plate thickness.

WEEKLY INSPECTION CHECKLIST FOR LEACHATE COLLECTION SYSTEM
WAYNE DISPOSAL, INC. SITE #2 HAZARDOUS WASTE LANDFILL MASTER CELLS

Inspector: ______________________ **Date:** ______________

Cell	Meter Reading	Meter Advance?		Compliance Depth to Leachate (ft)	Actual Depth to Leachate (ft)	Level in Complaince?		Pump Functioning?		Meter Functioning?	
		Y	N			Y	N	Y	N	Y	N
V-A				68.8							
V-B				62.5							
V-C				55.9							
V-E				61.2							
VI-CONTACT				[redacted]	[redacted]	[redacted]	[redacted]				
VII-A				53.3							
VII-BN				49.3							
VII-BS				51.8							
VII-C				46.2							

Note: Report items needing immediate attention to the Site Manager

Comments/Action Taken ______________________________

The electronic version of this document is the controlled version. Each user is responsible for ensuring that any document being used is the current version.

WEEKLY INSPECTION CHECKLIST FOR LEACHATE COLLECTION SYSTEM
WAYNE DISPOSAL, INC. SITE #2 HAZARDOUS WASTE LANDFILL MASTER CELLS

Inspector: ______________________________ **Date:** ____________________

Cell	Meter Reading	Meter Advance?		Compliance Depth to Leachate (ft)	Actual Depth to Leachate (ft)	Level in Complaince?		Pump Functioning?		Meter Functioning?	
		Y	N			Y	N	Y	N	Y	N
VI-AS				128.4							
VI-AN				127.4							
VI-B				137.2							
VI-C				102.1							
VI-D				126.6							
VI-ESW				26.0							
VI-ESE				37.0							
VI-ENW				69.8							
VI-ENE				102.7							
VI-G				225.8							

Note: Report items needing immediate attention to the Site Manager

Leachate and Contact Water Collection Systems	Yes	No
Leachate collection sump riser covers present and properly seated (if applicable)?		
Condition of leachate collection sump risers acceptable?		
Leachate depths in each collection sump in compliance?		
Pumps functioning properly?		
Condition of flow meters acceptable?		
Secondary containment monitoring sumps for leachate and contact water force mains free of liquid?		

Comments/Action Taken ______________________________

____

____

____

____

Leachate and Contact Water Collection Systems

Top cover is required only if riser rim is low enough to be a fall hazard. If present, verify that cover is properly seated.

Inspect aboveground exterior and visible interior portions of risers for damage, stress (buckling) and deterioration.

Measure depth to leachate in each collection sump. If leachate head is non-compliant, immediately notify the Landfill Manager (or designee).

Inspect flow meters for damage or malfunction. Report meter readings to Landfill Manager (or designee).

Check for liquid in the secondary containment monitoring sumps for both the leachate and contact water force mains. If liquid is present, determine whether it is condensate, groundwater or leachate/contact water. If condensate, no action required. If groundwater, there is a leak in the secondary pipe. If leachate or contact water, there is a leak in the primary pipe. Any leaks must be reported to the Landfill Manager immediately and repaired.

LEAK DETECTION SYSTEM INSPECTION

Cell	Meter Reading	Riser Pumped Dry?		Pump Functioning?		Meter Functioning?		Cap Secure and in Good Condition?		Cap Seals Tight?		Waste Away From Cap & Discharge?		Discharge Pipe Sealed Off?		Condition of Riser Pipes Ok?		Condition of Motor Controller Ok?		No Evidence of Tampering?	
		Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
6AS																							
6AN																							
6B																							
6C																							
6D																							
6E-SE																							
6E-SW																							
6E-NW																							
6E-NE																							
6G																							

INSPECTOR:

DATE:

INSPECTION START TIME:

DESCRIBE ANY ITEM THAT WAS CHECKED "NO" AND/OR PROVIDE OTHER COMMENTS/OBSERVATIONS:

Wayne Disposal Inc.
2018 TSCA Permit Renewal

Attachment 15
Personnel Training

PERSONNEL TRAINING

The administrative rules promulgated pursuant to Part 111, Hazardous Waste Management, of the Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), R 299.9501, R 299.9605 and Title 40 Code of Federal Regulations (CFR) §§264.16 and 270.14(b)(12), establish requirements for personnel training programs at hazardous waste management facilities. All references to 40 CFR citations specified herein are adopted by reference in R 299.11003.

This license attachment addresses requirements for a personnel training program at the hazardous waste management facility for the [redacted] in [redacted] Michigan. The information included in the template demonstrates how the facility meets the personnel training requirements for hazardous waste management facilities.

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A10.A CONTENT OF INTRODUCTORY AND CONTINUING EDUCATION TRAINING PROGRAMS
[R 299.9605 and 40 CFR §264.16(a)]

Facility personnel shall successfully complete a program of instruction and on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this part. Michigan Disposal Waste Treatment Plant (MDWTP) and Wayne Disposal Inc. (WDI) provide both introductory and ongoing training on a wide variety of health and safety, emergency and operational modules. Per the regulations, training includes the following:

- Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment
- Key parameters for automatic waste feed cutoff systems
- Communications or alarm systems
- Response to fires or explosions
- Response to groundwater contamination incidents
- Shutdown of operations

A10.A.1 OUTLINE FOR INTRODUCTORY TRAINING PROGRAM
[R 299.9605 and 40 CFR §§264.16(a)(1) and 264.16(d)(3)]

All facility personnel filling position related to hazardous waste management at the facility receive introductory training. The training consists of the following topics:

- HAZWOPER
- Health and Safety Programs
- Departmental Specific Operating Procedures
- Job Specific Regulatory Required Training
- Emergency Response and Preparedness, including:
  - Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment
  - Key parameters for automatic waste feed cut-off systems
  - Communications or alarm systems
  - Response to fires or explosions
  - Response to ground water contamination incidents; and
  - Shutdown of operations

Job specific training teaches employees how to perform their duties in a way that ensures the facility's compliance with the requirements of license. Training may include procedures such as those outlined in attachments A2 Chemical and Physical Waste Analysis Plan, C4 Treatment and A7 Contingency Plan.

A10.A.2 OUTLINE FOR CONTINUING EDUCATION
[R 299.9605 and 40 CFR §§264.16(a)(1) and 264.16(d)(3)]

Continued training is conducted on a schedule administered by the site management team. A training matrix identifies training requirements by position and by the individual in each position. In addition to annual HAZWOPER refresher training requirements, each employee is assigned additional training directly applicable to their job description as needed. The level of training (awareness or operational) depends on the individuals job description.

A10.B PERSONNEL SUBJECT TO TRAINING REQUIREMENTS
[R 299.9605 and 40 CFR §§264.16(a),(d)]

A10.B.1 JOB TITLES AND JOB DESCRIPTIONS

[R 299.9605 and 40 CFR §§264.16(d)(1),(2)]

A written job description is provided for each position held at MDWTP/WDI. Each position description that identifies job tasks, job location and required training.

A10.B.2 DESCRIPTION OF HOW TRAINING IS DESIGNED TO MEET ACTUAL JOB TASKS

[R 299.9605 and 40 CFR §§264.16(a)(1) and (d)(3)]

The training program is designed to teach facility personnel hazardous waste management procedures, including contingency plan implementation relevant to the position in which they are employed. The facility management team is responsible for identifying the initial and continuing training needs of his/her employees to ensure facility compliance with RCRA. Departmental managers also provide instruction for job-specific procedures and are responsible for overseeing the employee's on-the-job training. Specialized mandatory training requirements are coordinated through regulatory and health and safety staff.

A10.C FREQUENCY OF REQUIRED TRAINING

[R 299.9605 and 40 CFR §§264.16(b), (c)]

A10.C.1 INITIAL TRAINING

[R 299.9605 and 40 CFR §264.16(b)]

Each affected person completes the program within six months after the effective date of these regulations or six months after the date of their employment or assignment to a facility, or to a new position at a facility, whichever is later. Employees hired after the effective date of these regulations must not work in unsupervised positions until they have completed the required initial training as well as job specific training needed to perform their tasks.

A10.C.2 CONTINUING EDUCATION

[R 299.9605 and 40 CFR §264.16(c)]

Continuing education training is completed in accordance with the requirements of the mandatory training. Job specific training requirements are refreshed on an as needed basis at the discretion of the management team.

A10.D TRAINING DIRECTOR

[R 299.9605 and 40 CFR §264.16(a)(2)]

Training will be completed by qualified personnel or contractors (based on experience or education) knowledgeable in hazardous waste management procedures.

A10.E DOCUMENTATION AND RECORDKEEPING REQUIREMENTS

[R 299.9605 and 40 CFR §§264.16(d) and (e)]

A10.E.1 DOCUMENTATION

[R 299.9605 and 40 CFR §264.16(d)

A10.E.1(a) Job Titles and Names of Employees Filling Each Job
[R 299.9605 and 40 CFR §264.16(d)(1)]

Job titles and employee names filling the positions are maintained at the facility in electronic or paper form and may be regularly updated to meet the needs of the facility.

A10.E.1(b) Written Job Descriptions
[R 299.9605 and 40 CFR §264.16(d)(2)]

Job descriptions are maintained at the facility in electronic or paper form and are regularly updated by facility personnel and human resources to reflect the needs of the position.

A10.E.1(c) Written Description of Type and Amount of Training Given to Each Position
[R 299.9605 and 40 CFR §264.16(d)(3)]

Written descriptions of the type and amount of training given to each position are maintained by the facility management and are determined based on the tasks performed by personnel.

A10.E.1(d) Documentation That Training Has Been Given to and Completed by Facility Personnel
[R 299.9605 and 40 CFR §264.16(d)(4)]

Training is documented by electronic or paper records indicating completion of the training. Forms that may be used to document training include, but are not limited to certificates of completion or sign in sheets. Where the facility deems it necessary testing may be completed to determine competency.

A10.E.2 RECORD KEEPING
[R 299.9605 and 40 CFR §264.16(e)]

Training records are maintained at the facility in paper or electronic form. Record retention is completed in accordance with RCRA requirements with current personnel being kept until the closure of the facility and former personnel being kept for 3 years after their departure.

CLOSURE PLAN

40 CFR 270.14b (13) & PART 111, R504(1)c

CLOSURE PLAN

40 CFR 270.14(b)(13)
Part 111 R504(1)c
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CLOSURE PLAN

40 CFR 270.14(b)(13)

I. INTRODUCTION

A. Facility Conditions

Originally Wayne Disposal, Inc. Site #2 was a 427 acre facility with approximately 360 acres available for co-disposal of both hazardous and non-hazardous waste via landfill.

Wayne Disposal Site#2 Landfill has set aside Master Cells (MC) V, VI and VII for hazardous waste disposal. The hazardous waste boundary which circumscribes MC V, VI and VII contains 120 acres of which 105.6 are actual disposal area. Since the Fall of 1982, the co-disposal of hazardous and non-hazardous waste has been discontinued, with the remaining capacity in MCs V, VI, and VII reserved for hazardous waste.

All hazardous waste cells have leachate collection and removal systems. MC V and MC VII have been closed with multilayer final cover systems. This closure plan was developed to describe closure activities for cells VI-AS through VI-E. Cells VI-F and VI-G, which have not been constructed, must be incorporated into this Plan incrementally as each phase is constructed and licensed. Updates to the closure plan must include an updated sampling plan based on the configuration of the landfill licensed at the time. The updated closure plan and closure cost estimate must be submitted to MDEQ along with the construction certification for each phase. Financial assurance must also be adjusted at this time.

The base of the existing portions of the disposal area, as licensed under Michigan Natural Resources and Environmental Protection Act, (Act 451) of 1994, consist of clay soils with an average permeability of less than 5 X 10^{-8} cm/sec, underlain in most areas by varying thickness of CL-ML or ML soil with permeabilities in the 10^{-6} to 10^{-7} range, followed by a water bearing sand formation.

B. Scope

This document is the Closure Plan for the cells of the Wayne Disposal, Inc. Site #2, Van Buren Township, Michigan, EPA facility ID number MID048090633. It is organized to address 40 CFR Subpart G: Closure and Post-closure, and 40 CFR 264.310: Closure and Post-closure Care for Landfills.

The plan describes activities related to construction of the cover system, decontamination of remaining facility areas and equipment, and long term monitoring, inspection and maintenance activities required during post-closure. The plan is intended to satisfy the requirements for closure of the cells in accordance with State and Federal regulations.

II. CLOSURE PERFORMANCE STANDARD (40 CFR 264.111)

The Closure Plan for the cells is designed to ensure that after closure, minimum maintenance and controls will be required. The plan is also designed to minimize or eliminate threats to human health and the environment by preventing release of hazardous waste or hazardous waste constituents into the ground, groundwater, surface water, or air.

III. CLOSURE PLAN ACTIVITIES (40 CFR 264.112 (b))

The Closure Plan for the cells requires that completed areas be finished with final cover, topsoil, and vegetative growth. The Closure Plan minimizes the need for further maintenance. This reduces the potential for contamination and allows a monitoring record to be established before post-closure monitoring begins. The plan identifies the steps that will be necessary to close the cells at the facility.

IV. SITE PREPARATION (40 CFR 264.112 (b))

The cells to be closed will be prepared for clay capping by shaping and grading to meet the desired subgrade profile. The existing clay dike will be located before grading and shaping. The dike will serve as the baseline and starting point for constructing the clay cap. Surveyors will place corner stakes to mark the dike initially. All subsequent field stakes will be placed by Wayne Disposal, Inc. Site #2. Wayne Disposal, Inc. Site #2 will shape and grade an area capable of being capped with the FML foundation layer.

V. FINAL COVER (40 CFR 264.310 (a))

A. Purpose

The purposes for the final cover are (1) to provide long-term minimization of percolation from precipitation into the waste, (2) to function with a minimum level of maintenance, (3) to promote drainage while minimizing erosion, (4) to maintain integrity in the event of limited settlement of the waste surface, and (5) to achieve a permeability less than or equal to the bottom liner system or natural subsoils present.

B. Design Elements

The final cover system must consist of the following elements as approved by the Michigan Department of Environmental Quality (MDEQ), Waste and Hazardous Materials Division on June 4, 2004:

1. A leveling layer over the waste shall be installed per the Engineering Plans and Report on Basis of Design for Master Cell VI Cover Design Modification (11/20/02, with comment response of 4/27/04). This layer shall be installed above the surface of the waste consisting of a minimum of 12-inches of silt, clayey silt, or silty clay with a classification of ML, CL-ML, or CL as determined by ASTM Method D2487-83. This layer shall be installed in general accordance with section VI.A. of this plan;
2. A geosynthetic clay layer (GCL), placed directly over the leveling layer, consisting of a layer of sodium bentonite encapsulated between two geotextiles at least one of which shall be non-woven, and shall meet the requirements of Table 7.1 of the approved Engineering Plans and Report on Basis of Design for Master Cell VI Cover Design Modification. The lower and upper geotextiles should be either stitch bonded or needle punched together to provide stability. The manufacturers recommended overlap distance shall be marked on the GCL;
3. A 40-mil thick high density polyethylene (HDPE), very low density polyethylene (VLDPE), or linear low density polyethylene (LLDPE) flexible membrane liner (FML) installed per section VI C;
4. A double-bonded geocomposite drainage layer as specified in section VI D. of this plan;
5. A general soils layer, placed directly over the drainage blanket layer, consisting of a minimum of 30 inches of soil as described in section VI E. of this plan;
6. A layer of topsoil, placed directly over the compacted clay layer, consisting of a minimum of 6 inches of loamy sand as described in section VI F. of this plan;

7. A vegetative crop to be established per section VI G. of this plan.

C. Final Contours - Erosion Prevention (40 CFR 264.310 (b)(5))

The final contours of the constructed final cover will result in slopes between 4% and 25% and must conform to the topography for Master Cell VI as shown on Sheet 7 of the Engineering Plans for Design Modification, November 2002. Deviations from the elevations are permitted to the extent they are necessitated by complying with the thickness requirements stipulated for the clay liner, general soils and topsoil in sections VI B., VI E. and VI F. of this plan.

D. Gas Vents

At the time of closure Wayne Disposal, Inc. will develop a procedure to ensure that landfill cell(s) to be final capped will be evaluated to determine if a landfill gas collection system should be installed. Should the evaluation indicate that a landfill gas collection system is required; Wayne Disposal, Inc. will submit the evaluation and an updated landfill gas system design for MDEQ approval. However, if the evaluation indicates that the landfill gas collection system is not necessary the passive gas vents, as currently approved in the Design Modification, will be installed at the appropriate locations.

VI. CONSTRUCTION SPECIFICATIONS FOR FINAL COVER OF MASTER CELL VI

A. Construction of Intermediate Cover Layer

1. The layer upon which the geosynthetic clay liner is to be placed must consist of a minimum of 12-inches of compacted silt, clayey silt, or silty clay with an ASTM Method D2487-83 classification of ML, CL-ML or CL.

2. The CQAC or WDI will confirm the slope and correct elevations for the leveling layer surface by survey at a rate of at least once per half-acre over the entire master cell area. This survey, combined with a previous survey of top of waste elevations, will be used to confirm the thickness of the leveling layer and to determine if additional leveling osils are required. Alternatively, the required thickness of the leveling layer will be confirmed by soil borings conducted on a frequency of at least one per half-acre of final cover to be constructed. The thickness of the leveling layer shall not be less than one (1) foot.
3. The CQAC will confirm the classification of the leveling layer. A sample will be taken for every 25,000 cubic yards placed or change in borrow soil character and classified by the USCS (ASTM D2487). Additionally, the sample will be tested for gain size distribution by sieve analysis and hydrometer (ASTM D4222), and for Atterberg Limits (ASTM D4318). A test result not meeting those requirements will be reported immediately to the CQA officer.
4. The leveling layer will be smooth drum rolled in the presence of the CQAC to identify areas of excessive deflection and to prepare the surface for placmement of the GCL.

B. Installation of Geosynthetic Clay Liner (GCL)

1. The CQAC and the geosynthetics installer shall visually inspect the finished leveling layer surface and document unsuitable conditions such as soft or wet spots, large clay clods, and sharp rocks or other objects that could puncture or otherwise damage the GCL.
2. The geosynthetics installer shall supply and install the GCL in accordance with Section 7 of the approved CQA Plan.

C. Synthetic Liner

1. Introduction

The top of the geosynthetic clay liner (GCL) serves as the foundation for the synthetic liner and will be finished to the required elevations.

The synthetic liner will be a 40 mil (minimum) HDPE, VLDPE, or LLDPE.

The 40 mil (minimum) synthetic liner is placed upon the foundation materials. The individual sections of synthetic liner are welded together to form one continuous liner. During the installation of the synthetic liner, the seams will be tested with non-destructive methods.

2. Pre-Testing

Test seams shall be made on fragment pieces of geomembrane liner to verify that seaming conditions are adequate. Test seams shall also be made at the beginning of each seaming period, at the Inspector's discretion, and at least once each 4 hours, for each piece of seaming apparatus used that day.

The test seam sample shall be at least 2 feet long by 1 foot wide with the seam centered lengthwise. Two specimens 1 inch wide shall be cut from opposite ends of the test seam by the Contractor. These specimens shall be field tested by the contractor for shear and peel strength using a tensometer. If a test seam fails, the test shall be repeated in its entirety. If the additional test seam fails, the seaming apparatus or seamer shall not be accepted and shall not be used for seaming until the deficiencies are corrected and two consecutive successful full test seams are achieved.

3. Non-Destructive Seam Testing

The Contractor shall non-destructively test all field seams over their full length using a vacuum test unit. Continuity of testing shall be done as the seaming work progresses, not at the completion of all field seaming.

a. Air Vacuum Testing Process Equipment

- A vacuum box assembly consisting of a rigid housing, a transparent viewing window, a soft neoprene gasket attached to the bottom, port hole or valve assembly, and a vacuum gauge.
- A steel vacuum tank and pump assembly equipped with a pressure controller and pipe connections.
- A rubber pressure/vacuum hose with fittings and connections.
- An air pressurized solution spraying apparatus.
- A soapy solution.

b. Air Vacuum Testing Procedure

- Energize the vacuum pump and reduce the tank pressure to approximately -5 psi (gauge pressure).
- Wet a strip of geomembrane approximately 12 inches by 96 inches with the soapy solution.
- Place the box over the wetted area and compress.
- Close the bleed valve and open the vacuum valve.

- Ensure that a leak tight seal is created between the FML and neoprene gasket.
- Examine the geomembrane through the viewing window for the presence of soap bubbles.
- If no bubble(s) appear after a leak tight seal is formed, close the vacuum valve and open the bleed valve, move the box over the next adjoining area with a minimum 3 inches overlap and repeat the process.
- All areas where soap bubbles appear shall be marked and repaired and then retested.

The following procedures shall apply to situations where seams cannot be non-destructively tested, as determined by the Inspector:

- All such seams shall be cap-stripped with the same geomembrane where possible.
- If the cap strip is accessible to testing equipment, the seam shall be non-destructively tested.
- If the cap strip seam is not accessible for testing, the seaming and cap-stripping operations shall be observed by the Inspector for uniformity and completeness.

4. Destructive Seam Testing

a. Location and Frequency

The Contractor shall conduct a minimum of one destructive test per 500 feet of seam length. The Contractor shall not be informed in advance of the locations where the seam samples will be taken.

b. Sampling Procedure

Samples shall be cut by the Contractor at times and locations designated by the Inspector as the seaming progresses in order to obtain test results prior to completion of liner installation. The Inspector must witness the procurement of all field test samples and the Contractor shall mark all samples with that location and sample number. The Contractor shall also record in written form the date, time, location, sample number, ambient temperature, number of seaming unit, name of seamer, welding apparatus temperatures and pressures, and pass or fail description, and attach a copy of each sample portion.

All holes in the geomembrane resulting from obtaining the seam samples shall be immediately repaired in accordance with repair procedures. The integrity of the new seams in the repaired area shall be tested.

c. Size and Disposition of Samples

The samples shall be 12 inches wide by 24 inches long with the seam centered lengthwise. The sample shall be cut into two equal length pieces, half to be retained by the Contractor and the other half to be given to the Owner's Representative for archive storage and/or independent testing

d. Field Testing

The Contractor shall cut five 1-inch wide replicate specimens from his sample and these shall be tested by the Contractor. The Contractor shall test the five specimens from the seam sample for seam shear and peel, in accordance with the specified material tests and procedures. To be acceptable, four out of the five replicate test results must pass the material specification requirements. The results of these tests shall be provided to the Inspector by the conclusion of the second work day following the procurement of the field seam sample.

e. Independent Laboratory Testing

The Owner's Representative will require the Inspector to package and ship at least two seam samples received from the Installer to an independent laboratory for determination of seam shear and peel. Four of five specimens per sample must pass the material specifications requirements for the installation to be acceptable.

5. Procedures In The Event Of Destructive Test Failure

The following procedures shall apply whenever a sample fails the field destructive test. The Contractor shall have two options:

(a) The Installer can reconstruct the seam between the failed location and any passed test location.

(b) The Installer can retrace the welding path to an intermediate location (at 10 feet minimum from the location of the failed test) and take a small sample for an additional field test. If this additional sample passes the test, then the seam is reconstructed between that location and the original failed location. If this sample fails, then the process is repeated.

The Installer shall determine the length of seam failure to the satisfaction of the Inspector by additional tests or assume the seam is unacceptable between the two successful test locations, which bracket the test failure.

Over the length of seam failure, the Installer shall either cut out the old seam, reposition the panel and reseam or add a cap strip, as approved by the Inspector.

After reseaming or placement of the cap strip, one additional destructive test shall be taken within the reseamed area, and if test results are not acceptable, this process shall be repeated until the reseamed length is judged satisfactory by the Inspector.

In any case, all acceptable seams must be bounded by two passed test locations (i.e., the above procedures shall be followed in both directions from the original failed location), and one successful test must be obtained within the reconstructed area.

The Inspector shall document all actions taken in conjunction with destructive test failures.

Patches shall be round or oval in shape, made of the same geomembrane, and extend a minimum of 6 inches beyond the edge of defects.

Patches shall be applied using approved methods only. Small patches (less than 6 inches in least dimension) will require a cooling period after extruded welding half of the patch to prevent a burn through the liner before welding the second half of the patch.

6. Defects And Repairs

a. Identification

All seams and non-seam areas of the geomembrane shall be inspected by the Inspector for identification of defects, holes, blisters, undispersed raw materials and any sign of contamination by foreign matter. Because light reflected by the geomembrane helps detect defects, the surface of the geomembrane shall be clean at the time of inspection. The geomembrane surface shall be brushed, blown or washed by the Installer if the amount of dust or mud inhibits inspection.

b. Evaluation

Each suspect location in seam and non-seam areas shall be non-destructively tested. Each location which fails the non-destructive testing will be marked by the Contractor.

Where extrudate surface drifting occurs beyond 25 percent of the seam width, the affected seam length will be cap stripped as required by the Inspector. Reseaming over an existing seam will not be permitted, as it may be conducive to capillary leakage.

c. Repair Procedures

- Defective seams shall be restarted/re-seamed.
- Small holes shall be repaired by extrusion cap welding. If the hole is larger than ¼ inch, it must be patched.
- Blisters, larger holes, undispersed raw materials, and contamination by foreign matter shall be repaired by patches.

Surfaces of FML, which are to be patched, shall be abraded and cleaned no more than one hour prior to the repair.

7. Restart/Re-seaming Procedures

Restart of the extrusion welding process shall be achieved by grinding the existing seam and rewelding a new seam 2 inches from the termination of the previous seam and commencing at the start of grinding.

Re-seaming for the fusion welding process shall be achieved by cutting out the existing seam and welding in a replacement strip or if possible, cut the sheet next to the failed seam, move the panel over and seam with a single seam.

a. Verification of Repairs

Each repair shall be non-destructively tested using the methods described. Repairs which pass the non-destructive test shall be taken as an indication of an adequate repair. Failed tests shall indicate that the repair shall be redone and retested until a passing test results.

b. Record of the Results

Daily documentation of all non-destructive and destructive testing shall be provided to the Inspector by the Installer. This documentation shall identify all seams which initially failed the test and include evidence that these seams were repaired and retested successfully.

D. Construction of the FML Protection/Drainage Blanket Layer

1. The drainage layer must be a double-bonded geocomposite with a transmissivity of at least 1×10^{-5} m^2/sec when tested at a gradient of 25% under a normal load of 1,000 lbs/ft^2.
2. The perimeter drain pipe must consist of 4 inch diameter corrugated perforated pipe and 4 inch diameter non-perforated outlet pipe placed as shown in Sheet 13 of the Engineering Plans.
3. The perimeter drain pipe must be wrapped with geotextile filter material possessing an equivalent opening size of #70 standard sieve.
4. The double-bonded geocomposite comprising the layer must be placed on the FML in a manner that does not damage it or the drainage pipe system.
5. Initial double-bonded geocomposite placement must be done by placing the material at the toe of the lined slope and pushing the material up the side slope with appropriate equipment.

6. The full design thickness of the double-bonded geocomposite layer must be maintained when spreading the material and for any construction traffic on the layer.
7. Wayne Disposal, Inc. Site #2 must obtain direct layer thickness measurements at a rate of at least once per every half acre verify conformance with design requirements.

E. Construction of General Soil Layer

1. A layer of general soils a minimum of 30 inches in thickness must be placed over the granular material described in section VI D. of this plan.
2. General soils will consist primarily of inorganic soil constituents free of stumps, large roots, and other deleterious materials.
3. General soils shall not be compacted and shall be placed in such a manner as to cause minimum disturbance to the granular layer.
4. No frozen soil may be used in any lift, nor may any soil be placed on frozen base.
5. Wayne Disposal, Inc. Site #2 must obtain direct layer thickness measurements at a rate of at least once per every half-acre to verify conformance with design requirements.

F. Topsoil Specifications

- A layer of topsoil at least 6 inches thick after grading must be placed over the general soil layer described in section VI E of this plan.

- The topsoil must be a loamy sand, and confirmed by grain size analyses conducted according to ASTM Method D 422-63 at least once per 3,000 cubic yards to be placed.
- The top ½ inch of the topsoil layer must be loosely packed to provide an acceptable seed bed.
- Wayne Disposal, Inc. Site #2 must obtain direct measurements of topsoil thickness at the rate of at least once per half-acre to verify conformance with F1.

G. Vegetative Cover Specifications

1. The topsoil described in VI F. must be fertilized with 12-12-12 N-P-K at the rate which provides approximately 240 pounds per acre of total available nutrients, i.e. 80 pounds. per acre of available nitrogen, phosphoric acid, and potash, or an equivalent.
2. The following seed mix must be sown into the topsoil:

Seed	Percent by Weight
a. perennial rye	20 to 30
b. common creeping red fescue	20 to 30
c. common Kentucky bluegrass	5 to 10
d. Kentucky 31 tall fescue	100 to (a+b+c)

3. The seed mix must have a germination rate of at least 80%.
4. The seed mix must be applied at the rate of not less than 100 pounds per acre.
5. The seedbed must be rolled during or immediately after seed application unless a hydroseeding method is used to apply the seed.

6. Straw mulch/hay must be applied to the seedbed at the even rate of not less than 1.5 tons per acre in a manner that will minimize subsequent displacement by wind.

VII. <u>FINAL COVER DESIGN BASIS</u> (40 CFR 270.21(e))

The following is an evaluation of the proposed final cover to be used for the disposal cells in the hazardous waste management area at Wayne Disposal, Inc. Site #2. This evaluation is required under provision of 40 CFR 270.14(b)(13) and 270.21(e). Provisions relating to the cover requirements are included in 40 CFR 264.310(a). The proposed final cover is evaluated herein with respect to its ability to 1) provide long-term minimization of percolation into the landfilled waste, 2) function with a minimum of maintenance, 3) promote drainage while minimizing erosion, and 4) maintain integrity despite settlement of the landfilled waste surface. Additionally, 40 CFR 264.310 (a) requires that the cover possess a permeability less than or equal to the permeability of the leachate containment system at the base of the landfill.

A. <u>Description of Design</u>

The proposed cover system, exclusive of the vegetative cover, is presented in Sheet 10 (Liner and Final Cover System Details) of the Engineering Plans. The proposed cover consists of six elements. From the ground surface downward, these are 1) a minimum of 6 inches of topsoil, 2) a minimum of 30 inches of general soil, 3) a drainage layer consisting of a double-bonded geocomposite material, 4) a flexible membrane liner 40 mils in thickness, 5) a geosynthetic clay liner (GCL), and 6) a leveling layer consisting of at least 12-inches of compacted silt, clayey silt, or silty clay possessing a Unified Soil Classification of ML, CL-ML, or CL. The proposed surface slopes will range generally from 4 to 15 percent. The proposed vegetative cover will include a mixture of rye, fescue and bluegrass.

Additionally, it is proposed that the drainage blanket layer placed above the flexible membrane liner will be drained at the master cell boundaries and at diversion berms located along the slope of the final cover. The geocomposite will daylight in the various diversion berms along the slope and that water will be conveyed to the associated spillway to the perimeter. The lowest slope section of geocomposite will daylight at the perimeter toe drain which will allow the water to be conveyed through the peastone to the perimeter surface water ditches. See Sheets 11 and 12 of the Engineering Plans.

B. Function of System Components

The function to be served by the topsoil is self evident. It will provide the medium for vegetative root establishment and nourishment. The vegetative cover which will be supported by the topsoil will be essential to minimize soil erosion. The general soils will provide protection for the deeper FML and will provide soil moisture storage for support of the vegetative cover. The geocomposite drainage blanket will serve to transmit water which has percolated through the general soil layer off the landfill cells into the surrounding surface drainage ditches. The FML will serve to interrupt downward percolating moisture so that the drainage blanket can transmit the moisture off the cell cover. The geosynthetic clay liner (GCL) beneath the FML will serve as a barrier layer to minimize percolation and serve as a compacted, stable bedding on which to place the FML. Lastly, the underlying fine-grained soil layer will provide a stable base for geosynthetics placement.

C. Minimization of Percolation (40 CFR 264.310(a)(1))

Percolation of precipitation into the landfill is minimized by three components of the proposed cover system. The general soil just beneath the topsoil will provide soil moisture storage for the vegetative cover. This general fill will therefore minimize the percolation of moisture into the drainage blanket beneath it. The FML which will lie beneath the drainage blanket will maximize runoff and serve to prevent the vertical migration of moisture which reaches the drainage blanket from above. Similarly, the geosynthetic clay liner will serve as an additional barrier to prevent the vertical migration of moisture. This system therefore combines the beneficial, low permeability aspects inherent in both the FML and the GCL.

Hence, the proposed cover system should provide for short and long term minimization of percolation. As will be discussed later, this conclusion is dependent upon proper installation and construction techniques, the establishment of the vegetative cover, and the diligent application of a long term inspection and maintenance program.

D. Maintenance (40 CFR 264.310 (a)(2))

The proposed system will require regular maintenance only insofar as the vegetative cover is concerned. Proposed maintenance of the vegetative cover will be performed to minimize the establishment of native, undesirable species such as deep rooted, woody plants. Other potential efforts might include occasional mowing, fertilization, or even reseeding if determined to be necessary as described below.

Maintenance efforts will generally be limited to careful, periodic inspections (condition surveys) and repair of any problems identified during these inspections. Proposed inspections will specifically be directed toward the identification of: invasion by undesirable plant species; deterioration of the vegetative cover; areas of surface erosion; soft, or unstable areas of the cover; damage to the dikes; obstructions, erosion or deterioration of the surface drainage ditches; obstructions or damage to the discharge pipes for the drainage layer; burrowing by animals; or surface disturbance due to unwarranted vehicle traffic.

Detection of problems such as those presented above will require remedial efforts. The proposed remedial efforts will be undertaken to bring the cover back to the original designed condition insofar as possible.

E. <u>Drainage and Erosion</u> (40 CFR 264.310(a)(3))

Generally uniform slopes are planned for the proposed cover system. These slopes will range from approximately 4 percent to 25 percent. Slopes should be no less than 3 percent in order to minimize the impact of surface irregularities. The use of FML beneath the general soil and topsoil will promote runoff. Control and discharge of any runoff through ditches is described elsewhere in the permit application of which this report is a part.

Establishment and maintenance of a vegetative cover will serve to minimize erosion due to both runoff and wind. It is proposed that this vegetative cover will consist of a hardy grass mixture which will require a minimum of effort to maintain in full, thick growth on the entire cover surface. Deep rooted woody plants will not be used and their future establishment will be discouraged through a long term inspection and maintenance program. As previously discussed, placement of topsoil for the establishment of the vegetative cover is planned.

The universal soil loss equation has been applied to the proposed cover system. The analysis is presented in Appendix A of the Engineering Report on Basis of Design, MCVI Design Modification, March 2001. The analysis resulted in an estimate of soil erosion due to rainfall runoff of less than 2 tons per acre per year.

F. Cover Integrity During Settlement (40 CFR 264.310 (a)(4))

A large portion of the fill settlement will occur before cell closure. Nevertheless, the analysis attached herein provides an estimate that the maximum post-closure settlement of the final cover should be approximately 8 to 15 feet. This settlement will be greatest beneath the highest portions of the cover surface. Hence, some surface slopes may be reduced to approximately 3%. The cover will be inspected during the condition surveys discussed above to detect areas where the uniform surface grade may be disrupted, possibly impending surface drainage. Such a condition will be corrected by placing additional compacted clay fill (after stripping the topsoil) on the cover to restore the original grade insofar as necessary to reestablish proper drainage. Subsequent replacement of the topsoil and revegetation in the affected area will be undertaken.

The proposed cover system will have much more capability to maintain integrity during fill settlement than covers consisting of only compacted soil. This is because FML materials can withstand extensive elongation or strain (up to 700%) in comparison with soil materials. Nevertheless, it is intended that local differential settlements will be minimized by compaction during waste placement and prevention of major voids within the fill. It is anticipated that recommendations by the FML manufacturer will be followed regarding the provisions for sufficient excess material (slack) during placement of the FML.

The proposed final cover system is expected to accommodate settling and subsidence in a manner such that cover integrity is maintained, as required by 40 CFR 264.310 (a)(4).

G. Cover Permeability (40 CFR 264.310 (a)(5))

The use of membrane for one component of the cover system, if constructed properly, effectively reduces the potential leakage through the cover to a negligible level. As stated previously, 40 CFR 264.310 (a) requires that the cover possess a permeability less than or equal to the permeability of the leachate containment system at the base of the landfill. Since a synthetic membrane is proposed for use in both cases, the permeability of each can be considered roughly equivalent, as suggested in 40 CFR 264 Preamble (47 FR 32314). Further, the effective "leakage" rate through any barrier is related to the hydraulic gradient. The drainage blanket above the cover membrane and the leachate collection system on the base liner should both effectively reduce hydraulic gradients through the membranes to a negligible level.

The use of a flexible, synthetic membrane as one component of the cover system, if manufactured and installed properly, should effectively reduce the potential leakage through the cover system to a negligible level. There is a scarcity of hydraulic conductivity data for synthetic membrane materials. Gas transmission rates (specifically water vapor transmission rates) through these membrane materials nevertheless suggest that such materials possess equivalent hydraulic conductivities 4 or more orders of magnitude less than that of compacted clay soils. Therefore, polymeric membranes can be expected to be the controlling factors in liner or covers system permeability. Regardless of their hydraulic conductivities relative to each other, the polymeric membranes should effectively reduce the direct transmission of fluid through the cover and liner systems to a negligible level. Because of the low conductivity in these membranes, the prevention of membrane defects during manufacturing and installation is of relatively greater concern than direct fluid transmission through the polymeric materials. Hence, the quality control/assurance measures to be taken on this project will concentrate upon minimizing these defects.

H. Freeze-Thaw Effects (R299.9619(5)(a)(ii))

With regard to the potential depth of seasonal frost penetration and its effects upon the final cover, the proposed cover is expected to function as designed to provide long-term minimization of percolation with a minimum of maintenance. The expected depth of frost penetration in the region where the subject facility is located may be approximately 25 to 42 inches. The synthetic membrane and GCL layers in the cover system are both below this depth. Hence, neither will be directly subjected to seasonal frost.

The principal frost-heave effect which frost penetration may have upon a near-surface soil layer is through the formation of ice lenses. These lenses are caused by the tendency for capillarity to draw available moisture to the freezing front. Hence, ice lenses usually form parallel to this freezing front, i.e., horizontally. The direct effects of these lenses are generally horizontal zones of soil separation or increased porosity.

In order for these ice lenses to form, however, three conditions are necessary. These are a supply of moisture, freezing temperatures and a frost susceptible soil. With regard to the former, the moisture supply must generally be below the freezing front because moisture above this front will either be frozen and unavailable for capillary attraction or will be present because of thawing, i.e. freezing temperatures will not be present to create ice lenses.

The proposed cover system is designed with the purpose of eliminating the underlying supply of moisture available for ice lens formulation, thereby eliminating one of the fundamental, necessary conditions described above. As presented, the drainage blanket below the general soil layer will have more than sufficient capacity to transmit percolation off the cell in question. In addition, the geomembrane will serve as an effective barrier to upward moisture migration from the underlying soil and/or waste. Hence, the freezing front in the proposed final cover will be denied the moisture necessary for ice lens formation.

The proposed final cover which is expected to function as designed according to the requirements of 40 CFR 265.310 (a) and provide long-term minimization of percolation with a minimum of maintenance.

VIII. <u>EQUIPMENT DECONTAMINATION</u> (40 CFR 264.112 (a)(4))

All equipment used during the closure activity to install the leveling layer cover soils or other equipment that is in contact with hazardous waste will be thoroughly cleaned before being allowed to leave the facility. The cleaning will be conducted at the facility vehicle wash building using pressurized water. All equipment will be washed until visibly clean.

All wash water will be handled consistent with current wastewater discharge permits or transported to an appropriate hazardous waste treatment facility.

IX. DISPOSAL OR DECONTAMINATION OF EQUIPMENT, STRUCTURES, SOILS (40 CFR 264.114)

A. Access Road

This closure plan is intended to assess the impact that site operations may have had on the soils adjacent to the on-site haul/access roads. This plan is written to address the access roads currently utilized for waste operations. Should new access routes open to accommodate changes in operations, provisions in this plan must be expanded to include the new roads. These areas are not expected to be areas of significant contamination, as waste is only transported, not actively handled, on the road. Impact to soils around the access road would be limited to those caused by fugitive dust, small spills, etc. Metals and/or PCBs are the primary potential contaminants of concern. The sampling and data evaluation described in this plan will either be performed by Wayne Disposal, Inc. Site #2 staff or by a consultant retained by Wayne Disposal, Inc. Site #2. Analyses will be conducted by a qualified contract laboratory.

The first step in the closure of the access roads will be to wash the pavement to remove soil and dust. The transport road from the North I-94 Service Drive, through the reception area and to the Northwest corner of Master Cell VI will be thoroughly washed and swept with a wet vacuum sweeper. These paved roads will remain intact for post-closure activity access. The second step will be to sample soils adjacent to the paved roads. The procedures used to sample, analyze and evaluate soil data are described below.

Sampling Locations - The sampling locations have been chosen to identify the chemical characteristics of the surface soils in the shoulders of the on-site haul/access roads. There is approximately 2000 feet of roadway from the entrance to the waste unloading area at the northeast corner of Master Cell VI. The total length of roadway will be divided in 10 segments of approximately 200 foot intervals. Out of each 200 foot segment, three soil samples will be collected from the shoulder of the roadway. At least one sample will be collected from each side of the roadway in each segment. On the side where one sample is collected, the sample will be collected in the approximate mid-point of segment. On the side where two samples are collected, the segment will be divided in half with one sample collected in each half of the segment. The proposed approximate sampling locations are shown on Figure 1.

Sampling Method - The upper 6 inches of the soil surface will be sampled using a small stainless steel trowel or shovel. Large stones (greater than 1 inch in diameter) and vegetative matter will be removed by hand at the time of sampling. The shovel will be carefully cleaned between each sampling location with a mild detergent followed by a distilled water rinse. All soil samples will be individually placed in specially prepared glass containers. These containers will be obtained from the laboratory and will remain unopened until used in the field. Each container will be marked with the sample number, date, and time immediately after receiving its sample. Each sample will be temporarily stored in the field in an iced cooler until the sample can be placed into an on-site refrigerator. All collected samples will be stored in a secure location until transfer/transport to the laboratory. A Chain-of Custody form will be maintained for all samples obtained under the monitoring program. The form will, at a minimum, identify the sample number, sampling location, date, time, sampling individual, and amount/type of sample. A record of the sample handling and shipment, including the transfer of custody from one individual and organization to another, will also be maintained on the form. Signatures of each individual directly involved in the chain-of-custody will complete the form.

Sample Analysis - Each soil sample collected will be analyzed for the metals, Total PCB, volatile and semi-volatile organic parameters listed on Table 1. Analyses will be performed using the procedures outlined on Table 1. Target reporting limits are also listed on the table. If the laboratory is unable to meet the target detection limits, rationale must be provided to MDEQ. Results will be reported on a dry weight basis in units of mg/kg. The analyses will be conducted in accordance with standard laboratory QA/QC protocols.

Data Evaluation - The volatile, semi-volatile organics and metals data from each of the samples will be compared to the Part 201 Generic Cleanup Criteria (GCC) to determine if any standard has been exceeded. Data will be compared with residential or commercial & industrial risk-based clean-up standards or whatever standards are in use at the time of closure depending on which standards are appropriate for the future land use at the facility. If the applicable Part 201GCC standard is exceeded for any metal, WDI can, at its discretion, demonstrate that the concentration is within the normal background concentration for soils at the site. If WDI elects to make this demonstration, a plan will be submitted to MDEQ that outlines the strategy for collecting and analyzing native background samples and for establishing a statistically valid range for background concentrations. If the concentrations are found to be within native background ranges, then no corrective action will be required. PCB analysis results will be compared to a non-detect standard and will be remediated to meet that standard at the time of landfill closure.

If the applicable standards for Volatile and semi-volatile compounds are exceeded and a site-specific background demonstration is either not successful or not possible, WDI will submit a plan to mitigate the contaminated area to MDEQ. The plan shall include a description of the apparent extent of the problem, a proposed remedy, and methods for demonstrating clean closure.

TABLE 1. SOIL MONITORING PARAMETERS

Parameter	Analytical Method	MDEQ Target Detection Limit (mg/kg)
Metals		
Arsenic	7061	0.5
Antimony	7041	N.A.
Barium	6010/6020	1.0
Cadmium	6010/6020	0.5
Cobalt	6010/6020	5.0
Chromium(total)	6010/6020	2.0
Copper	6010/6020	1.0
Iron	6010/6020	2.5
Lead	6010/6020	1.0
Mercury	7470	0.1
Molybdenum	6010/6020	5.0
Nickel	6010/6020	5.0
Selenium	7741	0.5
Silver	6010/6020	0.25
Thallium	6010/6020	N.A.
Vanadium	6010/6020	1.0
Zinc	6010/6020	1.0

Volatile Organic Parameters (analyzed by method 8260)

Parameter	TMDL	Parameter	TMDL
Acteone	0.05	1,2-Dichloropropane	0.005
Bromodichloromethane	0.005	1,3-Dichloropropane	N.A.
Bromoform	0.005	1,1,2,2-Tetrachloroethane	0.005
Carbon Tetrachloride	0.005	Tetrachloroethane	N.A.
Chlorobenzene	0.005	Tetrachloroethene	0.005
2-Chloroethylvinyl Ether	N.A.	1,1,2-Trichloroethane	0.005
Chloroform	0.005	1,1,1-Trichloroethane	0.005
Chloromethane	0.010	Trichloroethene	0.005
Dibromodifluoromethane	N.A.	Trichlorofluoromethane	0.010
1,2 Dichlorobenzene	0.005	Vinyl Chloride	0.010
1,3 Dichlorobenzene	0.005	Methylene Chloride	0.010
1,4 Dichlorobenzene	0.005	Methyl Ethyl Ketone	0.010
Dichlorodifluoromethane	0.010	Benzene	0.005
1,1-Dichloroethane	0.005	Ethylbenzene	0.005
1,2-Dichloroethane	0.005	Toluene	0.005
1,1-Dichloroethene	0.005	Xylenes	0.010
1,2-Dichloroethene	0.005		

Parameter	Analytical Method	MDEQ Target Detection Limit (mg/kg)
Total PCBs	8082	0.5

Semi-Volatile Organic Compounds (analyzed by method 8270)

Parameter	TMDL	Parameter	TMDL
Acenapthene	0.100	Hexachlorobenzene	0.100
Acenapthylene	0.100	Hexachlorobutadiene	0.200
Anthracene	0.100	Hexachlorocyclopentadiene	0.200
Benzidene	N.A.	Hexachloroethane	0.100
Benzo(a)anthracene	0.100	Indeno (1,2,3-cd) pyrene	0.500
Benzo(b)fluoranthene	0.200	Isophorone	0.100
Benzo(k)fluoranthene	0.200	2-Methylnapthalene	N.A.
Benzo(ghi)perylene	0.500	Napthalene	0.100
Benzoic Acid	N.A.	2-Nitroaniline	N.A.
Benzo(a)pyrene	0.200	3-Nitroaniline	N.A.
Benzyl alcohol	N.A.	4-Nitroaniline	N.A.
Bis (2-chloroethoxy) methane	0.200	Nitrobenzene	0.200
Bis (2-chloroethyl) ether	0.100	N-Nitrosodiphenylamine	0.500
Bis (2)chloroisopropyl) ether	0.100	N-Nitroso-di-n-propylamine	0.200
Bis (2-ethylhexyl) phthalate	0.200	Phenanathrene	0.100
4-Bromo phenyl ether	0.200	Pyrene	0.100
Butyl benzyl phthalate	0.100	1,2,4-Trichlorobenzene	0.200
4-Chloroaniline	N.A.	4-Chloro-3-methylphenol	N.A.
2-chloronapthene	0.200	2-Chlorophenol	N.A.
4-Chlorophenyl phenyl ether	0.100	2,4-Dichlorophenol	N.A.
Chrysene	0.100	2,4-Dimethylphenol	N.A.
Dibenz (a,h) anthracene	0.500	4,6-Dinitro-2-methylphenol	N.A.
Dibenzofuran	N.A.	2,4-Dinitrophenol	N.A.
Di-n-butyl phthalate	0.100	2-Methylphenol	N.A.
1,2-Dichlorobenzene	0.100	4-Methylphenol	N.A.
1,3-Dichlorobenzene	0.100	2-Nitrophenol	N.A.
1,4-Dichlorobenzene	0.100	4-Nitrophenol	N.A.
3,3'-Dichlorobenzene	N.A.	Pentachlorophenol	N.A.
Diethyl pthalate	0.100	Phenol	N.A.
Dimethyl pthalate	0.200	2,4,5-Trichlorophenol	N.A.
2,4-Dinitrotoluene	0.500	2,4,6-Trichlorophenol	N.A.
2,6-Dinitrotoluene	0.500		
Di-n-octyl phthalate	0.200		
Fluoranthene	0.100		
Fluorene	0.100		

Note: MDEQ target detection limits may not be attainable. At the time of closure; the analytical methods listed above, the detection limits, and provisions to use alternate detection limits must be negotiated with MDEQ based upon regulatory criteria in place at the time of closure. (N.A.) indicates no MDEQ target MDL for soils is available at this time.

B. Vehicle Wheel Wash

In the event that Michigan Disposal Waste Treatment Plant ceases operations at the same time or prior to final closure of the Wayne Disposal, Inc. Site #2, the wheel wash building will be spray washed until visibly clean. Wash water will be handled as stated in Section VIII above. Solids retained in the holding tank will be buried in the landfill. The structure and the cleaned equipment would remain on site pending a determination on its disposition.

After the wheel wash building has been spray washed until visibly clean, the building's holding tank and floor will be inspected at closure for cracks and other signs of deterioration. If there are visible impacts to the holding tank and/or floor that could potentially breach the containment of the building, then soil sampling shall be conducted. Soil sampling should be performed in accordance with current MDEQ guidance at the time of closure for VOCs, SVOCs, PCBs and metals similar to that provided in the discussion in Section IX.A of this closure plan. Field QA/QC procedures for these sample activities will be in accordance with the Soil Monitoring SAP previously approved by the MDEQ.

If Michigan Disposal Waste Treatment Plant continues hazardous waste activities after closure of the Wayne Disposal, Inc. Site #2 operation, cleaning of the wheel wash building and disposal of cleaning residues will be the responsibility of Michigan Disposal Waste Treatment Plant.

C. Lined Pond

In the event that Michigan Disposal Waste Treatment Plant ceases operations at the same time or prior to final closure of the Wayne Disposal, Inc. Site #2, the lined pond will be spray washed until visibly clean. Wash water will be handled as stated in Section VIII above. Solids retained in the lined pond will be buried in the landfill.

After the lined pond has been spray washed until visibly clean, the geosynthetic liner will be inspected for rips, tears, holes and other signs of deterioration. If there are visible impacts to the geosynthetics liner that could potentially breach the containment of the lined pond, then soil sampling shall be conducted. Soil sampling should be performed in accordance with current MDEQ guidance at the time of closure for VOCs, SVOCs, PCBs and metals similar to that provided in the discussion in Section IX.A of this closure plan

If Michigan Disposal Waste Treatment Plant continues hazardous waste activities after closure of the Wayne Disposal, Inc. Site #2 operation, cleaning of the lined pond and disposal of cleaning residues will be the responsibility of Michigan Disposal Waste Treatment Plant.

D. Area A Soils

At the time of closure, WDI will make a final assessment of the level of metals and PCBs in the soil within Area A. Also, ten percent (10%) of the soil samples analyzed for the Area A characterization will be analyzed for the same expanded parameter list as along the roadway (metals, PCBs, VOCs, and SVOCs). Area A is a section of WDI defined in the WDI Soil and Sediment Sampling and Analysis Plan approved by the Waste and Hazardous Materials Division of the Michigan Department of Environmental Quality (WHMD/MDEQ). Area A includes, among other areas, the shoulder of the haul road leading to the WDI transfer station, and sediment in the on-site surface water ditches and storm sewers. The purpose of this final assessment is to determine if there are areas where analytical concentrations exceed applicable cleanup criteria. The cleanup criteria will be non-detect concentrations, or statutory equivalent at the time of closure.

The sample location plan will be prepared in accordance with the relevant guidance at the time of closure and in consideration of historical soil monitoring data collected in accordance with the Soil and Sediment Sampling and Analysis Plan, which may provide data from which to develop a biased sampling strategy.

On-site areas exceeding applicable cleanup criteria will be remediated by removing the top six inches of soil and disposing of the soil on site in a licensed landfill before the final cell is closed. After removal, the area will be sampled again to ensure applicable cleanup criteria are no longer exceeded. If analytical concentrations are found that exceed applicable cleanup criteria, another six inches will be removed and so on until analytical concentrations are verified below the applicable cleanup criteria. Then, clean soils will replace the soil that was removed and the clean backfill revegetated.

The following assumptions were made in preparing the cost estimate for sampling, analysis and remediation:

1. At the time of closure Area A will be 141 acres including the shoulder of the haul road leading to the WDI transfer station.
2. A biased sampling program will be developed resulting in an estimated 150 samples.
3. Assessment and Verification samples for Area A will be analyzed for PCBs and metals, with ten percent (10%) also being analyzed for VOCs and SVOCs.

   Remediation of Area A will consist of excavating one acre, six inches deep, 807 bank cubic yards -- about 1,290 tons.

E. Waste Transfer Box Decommission

This closure plan is intended to assess the impact that site operations may have had on the soils adjacent to the on-site waste transfer box. This plan is written to address the waste transfer box utilized for waste operations in a position outside the limits of the hazardous waste landfill boundary. Should alternate waste transfer box positions open to accommodate changes in operations, provisions in this plan must be expanded to include the new positions. Impact to soils around the waste transfer box positions would be limited to those caused by fugitive dust, small spills, etc. Metals, VOCs, SVOCs, and PCBs are the primary potential contaminants of concern. The sampling and data evaluation described in this plan will either be performed by Wayne Disposal, Inc. Site #2 staff or by a consultant retained by Wayne Disposal, Inc. Site #2. Analyses will be conducted by a qualified contract laboratory.

The first step in the closure of the waste transfer box will be demolition of the steel clad concrete walls and concrete floor of the receiving slab, and the demolition and removal of the tipping slab/access ramp. The soils, aggregate, and geosynthetics installed as part of the secondary containment structures for the receiving slab and access corridor between the waste transfer box and the landfill would be removed and disposed as part of the decommissioning of the waste transfer box. The secondary containment structure material will be cleaned of any visible liquids and the materials will be separated from the leachate collection system of Master Cell 6B at the anchor trench tie-in point. The remaining access pavement will be washed in a manner consistent with the wheel wash activities to remove soil and dust. The paved roads will remain intact for post-closure activity access. All demolition materials will be transported to the final active area of the hazardous waste landfill for disposal immediately prior to the landfill's final closure activities.

The second step will be to sample soils immediately adjacent to the paved surface and at a single point below the geomembrane of the secondary containment system. The procedures used to sample, analyze and evaluate soil data are described below and are similar in nature to the above referenced process for the paved roadway surfaces.

Sampling Locations - The sampling locations have been chosen to identify the chemical characteristics of the surface soils in the immediate vicinity of the waste transfer box. There is approximately 20,000 square feet of roadway from the tipping slab ramp to the actual waste transfer and unloading area. The proposed sampling locations would be along the east side of the tipping slab ramp at a point halfway between the roadway grade break to the actual push wall of the waste transfer box and just off the pavement. A second sample would be collected from the soils beneath the receiving slab of the waste transfer box after removal of the secondary containment geomembrane. The sample location will be beneath the collection sump and any additional samples would be collected, as necessary, wherever a potential crack or other breach was identified by inspection of the containment structures (floor and walls). These samples would only require collection and analysis if contaminated liquids were detected within the receiving slab secondary monitoring sump during the useful life of the structure.

Sampling Method - The upper 6 inches of the soil surface will be sampled using a small stainless steel trowel or shovel. Large stones (greater than 1 inch in diameter) and vegetative matter will be removed by hand at the time of sampling. The shovel will be carefully cleaned between each sampling location with a mild detergent followed by a distilled water rinse. All soil samples will be individually placed in specially prepared glass containers. These containers will be obtained from the laboratory and will remain unopened until used in the field. Each container will be marked with the sample number, date, and time immediately after receiving its sample. Each sample will be temporarily stored in the field in an iced cooler until the sample can be placed into an on-site refrigerator. All collected samples will be stored in a secure location until transfer/transport to the laboratory. A Chain-of Custody form will be maintained for all samples obtained under the monitoring program. The form will, at a minimum, identify the sample number, sampling location, date, time, sampling individual, and amount/type of sample. A record of the sample handling and shipment, including the transfer of custody from one individual and organization to another, will also be maintained on the form. Signatures of each individual directly involved in the chain-of-custody will complete the form. Field QA/QC procedures for these sample activities will be in accordance with the Soil Monitoring SAP previously approved by the MDEQ.

Sample Analysis - Each soil sample collected will be analyzed for the metals, the Total PCB, volatile and semi-volatile organic parameters listed on Table 1. Analyses will be performed using the procedures outlined on Table 1. Target reporting limits are also listed on the table. If the laboratory is unable to meet the target detection limits, rationale must be provided to MDEQ. Results will be reported on a dry weight basis in units of mg/kg. The analyses will be conducted in accordance with standard laboratory QA/QC protocols.

Data Evaluation - The volatile, semi-volatile organics and metals data from each of the samples will be compared to the Part 201 Generic Cleanup Criteria (GCC) to determine if any standard has been exceeded. Data will be compared with residential or commercial & industrial risk-based clean-up standards or whatever standards are in use at the time of closure depending on which standards are appropriate for the future land use at the facility. If the applicable Part 201GCC standard is exceeded for any metal, WDI can, at its discretion, demonstrate that the concentration is within the normal background concentration for soils at the site. If WDI elects to make this demonstration, a plan will be submitted to MDEQ that outlines the strategy for collecting and analyzing native background samples and for establishing a statistically valid range for background concentrations. If the concentrations are found to be within native background ranges, then no corrective action will be required. PCB analysis results will be compared to a non-detect standard and will be remediated to meet that standard at the time of landfill closure.

If the applicable standards for Volatile and semi-volatile compounds are exceeded and a site-specific background demonstration is either not successful or not possible, WDI will submit a plan to mitigate the contaminated area to MDEQ. The plan shall include a description of the apparent extent of the problem, a proposed remedy, and methods for demonstrating clean closure.

X. <u>MAXIMUM INVENTORY OF WASTES</u> (40 CFR 264 112(b)(3))

Waste is not stockpiled at the facility for future disposal. Waste is brought to the facility only after construction of the cell in which it is to be disposed is completed. No storage or treatment occurs at the facility.

The total volume of waste that will be placed in the cells will vary according to the size of the cells. All wastes placed in the landfill are recorded in the operating log.

XI. GROUNDWATER MONITORING, RUN-OFF CONTROL (40 CFR 264.112(b)(5))

1. Groundwater monitoring, in accordance with the permit, outlined for the active facility life will be continued through partial and final closure activities.

2. Leachate collection systems will be monitored and maintained as required during the active life of the facility, including the closure period.

3. Control of run-on and run-off will be monitored and maintained as required during the active life of the facility, including the closure period.

XII. GAS VENTING SYSTEM (R299.9619(3)(c))

The gas venting system is designed to prevent the accumulation of gas generated in closed cells. Details of the gas venting system are shown on Sheet 10 of the Engineering Plans for Design Modification, November 2002. These details show that the installation does not effect the permeability of the final cover system. Gases, if generated, can be collected and discharged through this system. If required under Part 111, gas emissions will be monitored, collected and treated.

XIII. ESTIMATED DATES OF CLOSURE ACTIVITY (40 CFR 264.112 (b)(7))

H.W. Unit	Type of Closure	Anticipated Closure Date
MC V	Partial	Closed
MC VII	Partial	Closed

*Closure schedule may change depending on usage rate.

XIV. ANTICIPATED FINAL/PARTIAL CLOSURE SCHEDULE (40 CFR 264.112(b)(6))

Activity	Time Required
1. Receive of Final Volume of Hazardous Waste	N/A
2. Decontaminate Haul Road, Area A, and demolition of the Waste Transfer Box	45 Days
3. Survey Benchmarks	Concurrent with #2 above
4. Construct Intermediate Cover	30 Days
5. Install Gas Vent System	Concurrent with #4 above
6. Decontamination of Equipment	5 Days
7. Construct Leveling Layer and Install GCL	108 Days
8. Install FML	54 Days
9. Construct Drainage Layer	54 Days
10. Construct General Soils Layer	54 Days
11. Place Top Soil	54 Days
12. Apply Vegetative Cover	27 Days
13. Complete Fence-Barrier around Perimeter of Hazardous Waste Management Area	27 Days
14. Complete and Submit Closure Certification	108 Days
TOTAL TIME	**566 Days**

XV. EXTENSION FOR CLOSURE TIME (40 CFR 264.113 (b))

It is anticipated that partial/final closure activities will exceed 180 days due to the substantial size of Master Cell VI and the uncertainty of the seasonal date when the final volumes of hazardous waste are received and the impact of that date on the sequencing of construction related closure activities. Therefore, the closure schedule assumes less than ideal conditions (see Section XIII). We therefore request an extension of the 180-day closure period. Steps necessary to prevent threats to human health and the environment from the unclosed but terminated hazardous waste management unit, including compliance with all applicable permit requirements, will be taken.

XVI. CERTIFICATION OF CLOSURE (40 CFR 264.115)

Within 60 days of the completion of final closure, certification will be submitted to the MDEQ Director by Wayne Disposal, Inc. Site #2 and an independent registered professional engineer that closure was completed in accordance with the specifications of this plan and Part 111 Rule 613 (3) and (4).

XVII. CLOSURE COST ESTIMATE (40 CFR 264.142, 264.112 (b)(2))

The closure cost estimate and associated information as presented is submitted in accordance with the requirements of 40 CFR 220.14 (b)(15), 264.142 and 264.143. These costs have been previously submitted and are updated each year using the Gross Nation Product (GNP) inflation factor and are presented in Section 39 "Financial Mechanism".

As identified in Section XIV, partial closure of Master Cell V and Master Cell VII is complete and final closure of Master Cell VI is expected in June 2015. Therefore the closure cost estimate includes the closure cost of MC VI, comprising 60.4 acres, and the final facility closure costs; i.e., haul road decontamination, Area A soil remediation, decommissioning of the Waste Transfer Box, and completion of hazardous boundary fencing, etc.

POST-CLOSURE PLAN

40 CFR 264.117(a)(1), 40 CFR 270.14(b)(13)

PART 111, R504(1)c

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POST-CLOSURE PLAN

40 CFR 264.117, 40 CFR 270.14(b)(13), PART 111, R504(1)c

1.0 GENERAL INFORMATION

This Post-closure Plan is prepared pursuant to requirements under 40 CFR Part 264.117 and 40 CFR 270.14(b)(13). This plan addresses those activities necessary for the proper management of the facility during the 30-year post-closure period (40 CFR Part 264.117(a)(1)]. Should the post closure plan need to be revised, an amendment to the plan shall be requested according to the provisions of 40 CFR 264.118(d).

This Plan was developed to describe post-closure activities for Master Cells V and VII as well as cells VI-AS through VI-E. Cells VI-F and VI-G, which have not been constructed, must be incorporated into this Plan incrementally as each phase is constructed and licensed. The updated post-closure plan and post-closure cost estimate must be submitted to MDEQ along with the construction certification for each phase. Financial assurance must also be adjusted at this time.

The primary areas of responsibility include monitoring, inspection, and maintenance activities and their frequencies. During post-closure, damaged or malfunctioning equipment or structures will be repaired or replaced as necessary to maintain the facility in proper condition.

Included in this Permit Application is the post-closure cost estimate, which details the expenses associated with the management and execution of the post-closure plan. In accordance with 40 CFR part 264.118(b)(3), the person to contact regarding Wayne Disposal Site #2 Landfill during the post-closure care period is:

Kerry Durnen
Wayne Disposal, Inc.
Phone:(734) 699-6265
49350 N. I-94 Service Drive
Belleville, MI 48111

In accordance with 40 CFR Part 264.120, no later than 60 days after the completion of the 30-year post-closure care period, Wayne Disposal Site #2 Landfill will submit to the MDEQ, by registered mail, a certification that the post-closure care activities were performed in accordance with this plan.

In accordance with 40 CFR Part 264.119(a), no later than 60 days after the certification of closure of each hazardous waste cell, WDI will submit to the MDEQ and Van Buren Township a record of the type, location, and quantity of hazardous waste disposed of within each cell.

2.0 INSPECTION ACTIVITIES AND FREQUENCIES

The post-closure inspections will be conducted using a grid system across the entire surface (final cover) of the landfill in order to discretize the area into specific regions. The approach will be conducted such that each master cell will be inspected and recorded on the Post Closure Inspection Checklist individually. The quarterly (1st & 3rd quarter) and the semi-annual (2nd quarter) inspections will be conducted on a quadrant grid system for each master cell. The annual inspection will be conducted on a 200 foot grid system (see attached Post-closure Inspection Grid Plan). Please refer to the attached Post-closure Inspection Report following this document for further information and inspection frequencies. When an identified problem is documented on the Post-Closure Inspection Report it shall be listed on the Maintenance Log Form. The purpose of this Maintenance Log Form is to track the items through completion of the repairs and to allow for a historical evaluation of any recurring items and locations.

The clay dikes and the perimeter dewatering tile system will be inspected for any surface evidence of deterioration or damage during each of the quarterly (1st and 3rd quarters), the semi-annual (2nd quarter), and the annual inspections. The two discharge points for the dewatering system will also be observed during each of these inspections to confirm that free-flowing conditions exist at the outlets. During each annual inspection, the manholes along the dewatering tile will be opened and the interiors inspected from the ground surface for evidence of deterioration, damage or tile blockage.

3.0 MAINTENANCE ACTIVITIES

In accordance with 40 CFR Part 264.118(b)(2) and 40 CFR Part 265.310(b), the following maintenance activities have been identified.

Security System

Signs will be replaced as they become illegible or if lost due to vandalism. In the event of fence or gate damage, those sections affecting site security will be repaired or replaced immediately.

Final Cover System

Periodic inspections are performed (refer to Subsection 2 of this Plan) to determine if and when additional maintenance is needed. Inspections of the final cover are specifically directed toward the identification of the following:

- Invasion of undesirable plant species
- Deterioration of vegetative cover
- Areas of surface erosion

- Soft or unstable areas of the cover
- Damage to the dikes
- Obstructions, erosion, or deterioration of the surface water drainage ditches
- Obstructions or damage to the discharge pipes for the drainage layer
- Burrowing by animals
- Surface disturbance due to unwarranted vehicle traffic

Detection of problems such as those presented above requires remedial efforts. The remedial efforts, including fertilizing and reseeding, are undertaken to bring the cover back to the original designed condition, as necessary. Documentation of these inspections is provided as shown in the Post-Closure Inspection Form following this document.

Erosion washouts will be repaired as soon as possible after detection. When cap integrity is in question, repair activities will begin immediately. Restoration of the vegetative cover will be performed during or at the end of the growing season.

In the event of localized subsidence that results in the ponding of surface water, repairs will involve building up the subsided area with soil to provide adequate surface water run-off. Based upon recommendations by the MDEQ; areas of localized subsidence must be evaluated prior to automatic application of surface soils to restore surface drainage. For relatively small areas of localized subsidence (i.e. no greater than 50 feet laterally and/or no greater than 12 inches vertically) soils may be added without notification to the MDEQ. However, larger areas must be evaluated and/or investigated, and shall require submittal of a Work Plan for WHMD approval prior to initiation of maintenance activities.

The vegetative cover is mowed to promote vegetative growth and surface water drainage, and to help improve the site's aesthetics. Vegetative cover that is lost or destroyed due to weathering is replaced in order to control erosion.

The maintenance of the vegetative cover also includes the elimination of undesirable trees or brush growth over the capped areas when apparent. Burrowing animals will be removed or exterminated immediately after being identified. In accordance with 40 CFR Part 264.310(a)(2), the Wayne Disposal Site #2 Landfill final cover functions with a minimum of maintenance.

Clay Dikes & Perimeter Dewatering Tile System

Periodic inspections of the clay dikes and the alignment of the perimeter dewatering tile systems are specifically directed toward the identification of the following:

- Deterioration of vegetative cover over the dikes
- Invasion of the dikes by deep-rooted, woody vegetation species
- Areas of dike surface erosion
- Soft or unstable conditions on dikes or along the tile system alignment
- Disturbance or damage to dikes or tile system manholes
- Blockage of the dewatering tile system outlets
- Excess fluid levels or non-flowing conditions in the dewatering tile system manholes

Vegetative deterioration or surface erosion on the clay dikes will be restored as soon as possible after detection. Vegetation restoration will be performed during or at the end of the growing season. When dike integrity is in question, repair activities will begin immediately.

Blockage at either outlet of the dewatering tile system will be cleared immediately after detection. Damage or disturbance of the concrete manholes on the dewatering tile system will be repaired as soon as possible after detection. Fluid levels in the concrete manholes which indicate partial or full blockage of the dewatering tile system will require jetting or cleaning of the blocked portion of the system as soon as possible after detection. Any surface evidence of collapse in the dewatering tile system will require investigation by sewer camera, open excavation, or other means. If partial or complete collapse has occurred, the affected portion of the system will be repaired and/or replaced as soon as possible after detection.

Leachate Collection System

The primary anticipated maintenance concerns will be pump operations. Should damage or failure occur to this system, repair or replacement of the defective equipment will be performed promptly.

The leachate collection piping will also be maintained by jetting or cleaning out the pipes interior as necessary.

Leak Detection, Collection, and Removal System

The primary anticipated maintenance concerns will be pump operations. Should damage or failure occur to this system, repair or replacement of the defective equipment will be performed promptly. Damaged surface pipes will also be repaired.

Drainage Structures

Ditches that have been damaged due to erosion will be properly repaired. Sediment buildup will be removed where necessary to allow free gravity drainage to the sedimentation basin. Removal of sediment buildup in the sedimentation basins will also be performed as needed to maintain adequate capacity for design flow conditions. The edge drain system may require occasional maintenance via sump clean-out & power-jetting to assure flow & reduce the hydraulic head against perimeter dikes to less than 5 feet of head.

Gas Venting System

Damaged gas venting risers will be repaired or replaced promptly after notification of needed repair. Dislodged gas venting risers will be reset.

Monitoring Wells

The primary anticipated maintenance concerns will be pump operation, security, and casing integrity. Should damage occur to the pumps, they will be repaired or replaced promptly. If damage is done to the locking system or the well casing, it will also be repaired.

Benchmarks

Should the benchmarks be removed or dislodged entirely, they will be reset or re-established at the original location and elevation.

4.0 MONITORING ACTIVITIES

In accordance with 40 CFR Part 264.310(b)(2) during the post-closure care period, the leachate collection and removal system will continue to be operated until leachate is no longer detected. In accordance with 40 CFR Part 264.310(b)(3), the groundwater monitoring system will be maintained and monitored throughout the post-closure period. The leak detection systems will also be maintained and monitored throughout the post-closure period. Refer to the environmental monitoring sections contained within this Permit Application for additional information regarding monitoring.