US ecology

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VIA EMAIL and US MAIL

November 14, 2022

Rich Conforti
Environment, Great Lakes, and Energy
Hazardous Waste Section
Constitution Hall 525 W. Allegan St.
P.O. Box 30241
Lansing, MI 48909-7741

RE: Response to Notice of Deficiency for Renewal Application, Hazardous Waste Management Facility Operating License Renewal Application; EQ Detroit, Inc. or EQD (DBA US Ecology Detroit South; Detroit, Michigan); MID 980 991 566; Waste Data System Number 399367

Dear Mr. Conforti,

EQ Detroit, Inc. (EQD) is providing Michigan Environment Great Lakes, and Energy (EGLE) with responses to Technical Notices of Deficiency (TNOD) dated June 30, 2022. The TNOD consisted of over five hundred and fifty comments from two technical memos from EGLE and one from United States Environmental Protection Agency's, Region 5 (USEPA) staff. EQD expects that the revised application being submitted today will resolve most of the 550+ deficiency comments. However, EQD is requesting additional time to submit the updated Ambient Air Monitoring Plan in connection with the comments on Section E – Environmental Monitoring. EQD has hired RWDI Engineering and Trinity Consultants to review site emissions and ambient air monitoring in connection with updating the AAMP. EQD proposes to submit the AAMP no later than December 30, 2022.

The changes that were made were extensive and therefore a complete copy of all the documents is being provided outside of the AAMP.

Note that attachment C4 Treatment contains proprietary and confidential business information and therefore is being provided in a separate submittal. EQD requests that this information be provided confidential treatment and not be disclosed except as provided in 40 C.F.R. Part 2, Subpart B and Section 324.11129 of Act 451.

EQD made a concerted effort to respond constructively to the issues presented in the notice of deficiency, and EQD provided explanations in instances where EQD believes that the requested changes are not warranted. We believe that significant progress has been made. To the extent

issues remain open, we would welcome the opportunity to meet with you as soon as possible to discuss these issues further.

EQD looks forward to continuing to work with EGLE to ensure we can meet our common goal of safe and compliant waste management.

Please contact us if you have any additional questions.

Sincerely,

John C. Barta
General Manger

Enclosures

cc (via email): Ronda Blayer, EGLE
Elizabeth Brown, EGLE
James Day, EGLE
Chris Lambesis, U.S. EPA
Jane K. Murphy, Jones Day (w/attachments)
Jacob Runge, EGLE (w/attachments)
Shaun Shields, EGLE
Charles T. Wehland, Jones Day (w/attachments)
Dale Bridgford, EGLE
Mary Carnagie, EGLE
Tiana Kilgore, EGLE
John McCabe, EGLE
Todd Ramaly, U.S. EPA (w/attachments)
Nicole Sanabria, EGLE
Kimberly Tyson, EGLE
Todd Zynda, EGLE (w/attachments)

cc (US Mail): Todd Ramaly, U.S. EPA (w/enclosures)
Todd Zynda, EGLE (w/enclosures)

Attachment 1
Notice of Deficiency – US Ecology Detroit South (EQD)
Review Comments on Hazardous Waste Management Facility Operating License Renewal Application (Application)

Overall Comments:

1. Application must be updated to reflect current conditions of the site and surrounding areas/neighborhoods, as delay in processing and review of the application has resulted in a change in both facility operations and surroundings.

EQD Response: Additional information was added.

2. Application must be updated to reflect current organization names and position titles, both internally for US Ecology and state agencies.

EQD Response: Complete

3. Application must be updated to ensure references to updated sections are accurate.

EQD Response: Complete

4. All acronyms should be defined in every section of the application in which they are used, to eliminate ambiguity and improve clarity.

EQD Response: Complete

5. All instances of Michigan Department of Environmental Quality and MDEQ should be replaced with Michigan Department of Environment, Great Lakes, and Energy and EGLE, respectively.

EQD Response: Complete

6. Where Standard Operating Procedures (SOP) are relied upon to secure information EQD needs for waste characterization, waste analysis, treatment, environmental monitoring, or any other requirements for appropriate storage or treatment of hazardous waste, EQD must include the SOPs in the license application as required by Rule (R) 299.9508. The Materials Management Division (MMD) must review such SOPs to determine if EQD procedures comply with the administrative rules promulgated pursuant to Part 111, Hazardous Waste Management, of the Natural Resources and Environmental Protection Act (Part 111). It is not EGLE's intent to impede the business interests of the facility, or to slow the improvements of these documents. SOPs may not need to be license attachments if a license condition requires compliance with the approved SOPs. However, a review process for critical SOPs (those fitting the definition in the first sentence of this paragraph) is non-negotiable.

EQD Response: EQD internal SOPs are intended to be explanatory and flexible business tools that provide direction and guidance to EQD staff regarding the implementation of the WAP, laws, rules, and license conditions applicable to the operation of EQD's facility. Procedures contained within a SOP may be discontinued, revised, or replaced by EQD to improve facility operations, to increase the safety of EQD staff, or for any other reason, so long as the procedures EQD employs results in compliance with the license, the approved WAP, and other applicable regulatory requirements.

With that in mind, and to preserve the facility's ability to control its internal SOPs, it is appropriate to document analytical methods in the WAP to ensure that the facility is obligated to meet these requirements and ensuring EGLE can enforce them. As such, analytical method SOPs developed in accordance with

EPA's Publication SW-846, ASTM methods, or the Standard Methods for Examination of Water and Wastewater have been referenced in the WAP.

7. All unit capacities and calculations must be checked for accuracy and consistency. There have previously been discrepancies over the course of modular updates of the application, especially the Waste Analysis Plan (WAP), (e.g., LPA max capacity on Sheet C-14, versus Section D-3d(ii), capacities in Table D-5 and Section D-1b).

EQD Response: Complete

Section A – License Application & General Facility Information:

8. Please update the site information section. For example, John Barta is now the site general manager, not Raymond Landsberg.

EQD Response: Complete

CERTIFICATION OF CAPABILITY

9. PE certification that the facility was constructed according to approved plans in the construction permit, or that an existing facility is capable of managing hazardous waste in compliance with Part 111 of Act 451.

    a. Appendix A-12: The appendix document is titled "Certification Statement of Capability to Dispose of Hazardous Waste" but the text certifies that the facility is "capable of storing and treating hazardous waste." It is signed by a Professional Engineer and dated 9/10/2008. Note that the text of the certification statement references R 508 (d), and not 508 (1)(d). Please correct these discrepancies.

EQD Response: An addendum has been prepared and included in this section to document the correction.

Section B – General Facility Description:

10. Update the information on the surrounding community, including number of residents and general neighborhood characterizations. For instance, it is estimated in the application that 500 people live within one mile of the facility, whereas the United States Postal Service estimates at least 2500 addresses within one mile (realizing not all are residential).

EQD Response: This information is not specifically required by the applicable regulations, or the application form provided by EGLE. As such, we have deleted the information. Information concerning the surrounding community is more pertinent to the Environmental Assessment than the General Facility Description and, as discussed below, additional information has been added to the Environmental Assessment.

11. The application states that only ~45% of the site is paved. Is this still accurate as stated, and can it be clarified? The soil monitoring waiver requires that all active areas of the facility be impermeable, and thus the use of unpaved areas is a potential for unplanned (and potentially unperceived) releases to accumulate in site soils and spread. Therefore, the unpaved area that has been used for truck staging should be sampled for contamination and paved if current monitoring program waivers are to be renewed.

EQD Response: The Engineering Manager reevaluated this information and found that EQD occupies 15.6 acres of land. Approximately 65 percent of the property is covered by buildings or concrete. The remaining area is approximately 15 percent gravel lot used to store empty trailers, unused equipment, and trucks waiting for approval to offload waste which is considered to still be in transit, and 20 percent is green space. No loading, unloading or treatment activities take place on the gravel lot or green space.

Section C – Waste Analysis Plan:

12. Technical deficiencies for the WAP are provided as a standalone document due to ongoing discussions and addendums since initial submission. United States Environmental Protection Agency (U.S. EPA)-specific documentation is also included with our WAP comments.

Section D – Plans and Specifications:

13. The draft WAP re-write included the same "C-2" confidential treatment attachment as MDI's WAP, but this attachment was not included in the official WAP re-write submittal. It was clarified with EQD staff that this was a deliberate omission. Therefore, a description of the requisite treatment must be added, as the Application must include treatment procedures per R 299.9508(b).

EQD Response: The reference to "C-2" was a typographical error and the reference should be to C4. Confidential treatment of C4 is being requested in this submittal. A description of the treatment procedures with the requisite requests for confidentiality is being submitted with the WAP under separate cover.

TREATMENT

14. The Application must include the following information regarding EQD treatment procedures:
    a. Demonstration of how the treatment will change the physical, chemical, or biological character or composition of the waste; neutralize the waste; recover energy or material resources from the waste; render the waste nonhazardous, safer, etc.
    b. The proper treatment technique, feed rates, operating conditions, and accuracy of devices intended to measure treatment parameters.
    c. Whether the wastes or treatment chemicals will have any detrimental effect on the facility, and measures to control these effects.
    d. Whether the wastes contain contaminants that may interfere with the treatment process and how the interference will be controlled.
    e. Whether the wastes contain contaminants that might cause the release of toxic gases or fumes and how they will be controlled.
    f. Whether the wastes contain contaminants that might form toxic constituents with treatment chemicals and how they will be controlled.
    g. Trial tests.

EQD Response: EQD included the C.4 Treatment Attachment which covers a-f above. With respect to subsection g., EQD is not proposing treatment for hazardous wastes that are new or significantly different from hazardous waste previously treated, thus trial tests are not necessary to verify the information provided by EQD to address subsection b. *See* 299.504(5)(g) ("Trial tests, including bench scale, pilot plant scale, or other appropriate tests, on each hazardous waste that is new or significantly different from hazardous waste previously treated to verify the information required in subdivision (b) of this subrule").

Section E – Environmental Monitoring:

General:

15. EQD must re-evaluate the locations of the ambient air monitoring stations taking into consideration of local meteorological conditions and emission sources and propose and justify the locations of the ambient air monitoring locations. Presently, there is no ambient air monitor located in the southeast corner of the facility property. There are residential areas to the east and southeast of the property. Based on an initial review of local climatological data from the Detroit City Airport, historic hourly wind direction measurements from 1992 to October 2021 indicate a monitoring station in the southeast corner would be downwind of the facility an estimated 35% of the time. In this same timeframe, the northeast station was downwind of the facility an estimated 31% of hourly

wind measurements. Based on this initial screening, a more thorough evaluation of the positioning of the ambient air monitoring stations is warranted, and (if revealed necessary) will require moving and re-installing the samplers.

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. The location of the Ambient Air Monitors will be determined and will be proposed by EQD no later than December 30, 2022.

16. EGLE did not provide a comment 16

17. EQD must add a co-located monitoring station to the monitoring network. This is necessary to more comprehensively assess data quality of collected samples. EQD must propose a location for the co-located sampler and update figures reflecting sampler locations in the application.

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. The co-located monitoring location will be determined and will be proposed by EQD no later than December 30, 2022.

18. EQD The ambient air monitoring program (AAMP) must identify the following information to be submitted with monitoring program data:
    a. Ambient air monitoring data must include, at a minimum, the following items in an electronic report:
        i. Analytical laboratory reports and associated quality assurance (QA), quality control (QC) information.
        ii. Sampler flow data.
        iii. Sample results.
        iv. Chain of custody documentation.
        v. Sampling narrative, which can include a certification statement and signature, as well as a narrative for any issues identified with monitoring data and actions to address issues, if needed.
        vi. An evaluation of the monitoring data including any supporting figures and tables.
    b. The monthly submission of monitoring results must include an electronic format (such as electronic data deliverables, excel, etc.) for ease of maintaining monitoring databases. If the monitoring method is based on sample volume (ex: metals), the sample results must be reported based on the calculated sample concentration based on air volume sampled, instead of non-detect values being reported as "<DL." At minimum, the submission of monitoring results must include the following fields:
        i. Site ID.
        ii. Monitoring Station ID.
        iii. Sample Date.
        iv. Parameter.
        v. CAS Registry Number.
        vi. Sample result.
        vii. Reporting limit and detection limit.
        viii. Data Qualifiers

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. The Ambient Air Monitoring Plan (AAMP) will be updated to include the requested information and submitted by EQD no later than December 30, 2022.

19. The SAP or method specific SOPs must describe what field documentation is collected as well as where field notes collected during sample collection will be stored if not submitted with the monitoring data submissions. For example, for leak testing or flow verification testing documentation, EQD may elect not to submit this information (unless it affects sample collection or results), but this information should be retained in the operating record.

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. The AAMP will be updated to include the requested information and submitted by EQD no later than December 30, 2022.

20. EGLE did not provide a comment 20

21. In the proposed AAMP, language states "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." This language is presently in the current AAMP; however, EQD does not report non-detect values in this method. Please revise language and monitoring data submissions to include reporting of non-detects at the detection limit. Data reported between the detection limit and quantitation limit should be reported and qualified.

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. See attached comments from RWDI.

22. The SAP must describe sample handling, preservation, hold time requirements, and all other sampling and analysis steps. Examples include where sampling materials are acquired from, confirming sampling materials are of proper quality, what checks are done before installation, how a flow check is performed, etc. The SAP should include a copy of the contaminants of concern (COC) form for reference as an example. As previously described, the SAP must specify that a copy of the COC be provided with each monthly submission. Note that SOPs can be separate from the SAP, but they need to be referenced in it. The SAP must also address record retention, what happens to outdated SOPs, and how are SOPs revised and sent out to operators.

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. See attached comments from RWDI.

23. Please provide SOPs for all sample collection activities, such as metals, and volatile organic compounds (VOC). SOPs must describe calibration procedures and frequency, sampling procedures, equipment/flow checks procedures, and associated QA/QC requirements. Guidance on SOPs are available in the U.S. EPA's Guidance for the Preparation of Standard Operating Procedures EPA QA/G-6. SOPs may be referenced in the SAP, but EQD may modify the SOP and submit the modified SOP to EGLE. The SOPs must also identify the make and model of the flow sampling equipment. Where a specific method is cited, such as the U.S. EPA's method TO-17, a copy of the method with any additional details or modifications to the SOP must be included. For example, EQD' SOP for TO-17 must clearly outline the pump flow verification and calibration procedures, frequency, and acceptance criteria.

EQD Response: Please see Section E – Environmental Monitoring. EQD internal SOPs are intended to be explanatory and flexible business tools that provide direction and guidance to EQD staff regarding the implementation of the WAP, laws, rules, and license conditions applicable to the operation of EQD's facility. Procedures contained within an SOP may be discontinued, revised, or replaced by EQD to improve facility operations, to increase the safety of EQD staff, or for any other reason, so long as the procedures EQD employs results in compliance with the license, the approved WAP, and other applicable regulatory requirements. For these reasons, EQD is unable to provide copies of the SOPs as part of the License Renewal Application.

24. EQD must describe within the AAMP how ambient air monitoring data will be evaluated to detect a potential violation of 40CFR, Part 55, Outer Continental Shelf Air Regulations (Part 55), including any statistical calculations and ambient air action levels (concentration and duration). The AAMP must also identify and describe what procedures are enacted if monitoring data indicates a potential violation of Part 55.

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. The AAMP will be updated to include the requested information and submitted by EQD no later than December 30, 2022.December 30, 2022

25. EQD must re-evaluate the frequency of sample collection of the AAMP. The frequency of sample collection must be justified based on an assessment of hazardous constituents managed by the facility, potential nearby community exposures, sources of emissions (including estimated emissions in a failure mode assessment), and local meteorological conditions.

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. The AAMP will be updated to include the requested information and submitted by EQD no later than December 30, 2022.December 30, 2022

Polychlorinated Biphenyls (PCB):

26. Table E-2 includes PCBs as an analyte to be measured. The monitoring methods specified in the attachment, TO-17; Code of Federal Regulations, Title 40, Protection of the Environment (40 CFR) Part 50, National Primary and Secondary Ambient Air Quality Standards (Part 50), Appendix B, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere; do not include PCBs within the scope of the method and are not appropriate to monitor for PCBs in ambient air. An alternative monitoring method must be proposed.

EQD Response: EQD does not accept PCB waste. This seems to be inadvertently added from the Belleville application. An updated table has been provided in the attached RWDI comments.

VOCs:

27. EGLE has identified concerns regarding the adequacy of the proposed TO-17 VOC monitoring method. Since EQD has used (and proposes to use) a version of method TO-17 similar to Wayne Disposal, Inc. (WDI), and there have been previously documented instances of moisture interference with VOC samples collected at EQD, EGLE believes the moisture interferences observed with samples collected at WDI are also present at samples collected at EQD. If EQD wishes to demonstrate that moisture interference with the TO-17 method is not a systemic issue at EQD, EQD may provide a response to this comment, including the previous three years of monitoring data laboratory reports and associated batch QC sample data. On February 4, 2021, EGLE received laboratory and QA documents for VOC ambient air samples collected from September 1, 2019, and August 31, 2020, at WDI. EGLE, MMD, and the Air Quality Division (AQD) reviewed the submitted laboratory results and associated QA/QC information. The monitoring data and associated QC information was compared to criteria and guidance contained in U.S. EPA Method TO-17, U.S. EPA's Quality Assurance Handbook for Air Pollution Measurement Systems, U.S. EPA Method TO-15, and University Laboratories' established QC limits for TO-17 analyses. Based on the review of the submitted QC data and other laboratory documents, the MMD and AQD have identified over 80% of the samples collected between September 2019 and August 2020 as impacted by moisture in the sorbent tubes. During this same time, the relative percent difference (RPD) between collocated samples showed poor precision using the current TO-17 method. For VOC analytes, >50% of collocated samples exhibited RPDs greater than 30% and for many analytes, most collocated samples exceeded 50% RPD. Based on this information, it appears moisture interference contributes to a loss of accuracy and precision for VOC samples collected via TO-17. The MMD and AQD have determined that an alternative VOC sampling method is necessary to adequately measure ambient concentrations of VOCs at facility fence line monitoring positions.

    a. EGLE requests clarification and response to the following items:

i. Most laboratory reports included footnotes for moisture interference. However, in some laboratory reports, internal standard recovery was low and surrogate recovery was outside of QC limits, but no footnote indicating moisture interference was present. Additional clarification is needed if the laboratory uses information not presented in the QA/QC reports to identify analytical interference caused by moisture.

ii. Please provide an SOP for the TO-17 analysis or additional detail regarding the laboratory's current TO-17 analytical procedure, specifically the following steps:
    a) What moisture management steps are implemented (for example, is a dry purge step used and is this step performed at elevated temperature?)
    b) A description of how and when internal standards and surrogates are added during sample analysis (for example, are internal standards added after a dry purge step?).
    c) Please confirm which internal standards are used to quantitate which target analytes.

iii. EGLE requests EQD submit an alternative VOC monitoring method for EGLE review utilizing U.S. EPA Method TO-15 or an equivalent method. U.S. EPA Method TO-15 is the recommended sampling method for many VOCs and has been demonstrated to be capable of meeting recommended data quality objectives for AAMPs. If EQD elects to use a modified version of TO-17 for VOC monitoring, EQD must submit a workplan for EGLE review which at minimum includes the following information:
    a) A detailed description of sampling equipment, field sampling method, and analytical procedures. This description must identify any modifications from the current sampling and analytical method.
    b) Target reporting limits for analytes.
    c) A sampling plan to demonstrate, through field testing, a modified TO-17 method with results comparable to TO-15, and which is sufficiently robust to achieve ≥ 75% data completeness with valid samples not affected by moisture or other QC deficiencies (≥ 75% data completeness is a recommended data quality objective per the U.S. EPA's QA handbook). The field tests must include concurrent sampling using TO-15, the current TO-17 method, and the modified TO-17 method. Please refer to U.S. EPA Method 301 and 40 CFR 53 subpart C for guidance on evaluating comparability between methods.
    d) A description of any proposed statistical analysis performed as part of the above item.
    e) A determination of the safe sampling volume and a description of the method to be used to determine the safe sampling volume.
    f) Any sampling data collected using a modified TO-17 method collected prior to or outside of the scope of the workplan submitted to EGLE (such as data from preliminary tests used to select a sorbent packing material or operating a moisture trap).

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. See attached comments from RWDI.

28. If TO-17, or a modified TO-17 method is utilized, the SOP must state whether a particulate filter or ozone scrubber is part of the sampling equipment as well as their frequency for replacement.

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. See attached comments from RWDI.

29. If TO-17, or a modified TO-17 method is utilized, Section 13.1.2 of TO-17 recommends the safe sampling volumes of sorbent tubes should be retested annually or once every 20 uses, but two methods are outlined in section 10.8. The method SOP should specify which method is utilized to verify the safe sampling volume of the sorbent tubes, frequency, and where the information is retained. While it is not necessary for this information to be submitted with regular data submissions, records of this information may be relevant during in investigating data irregularities or other audit activities and records of this information must be maintained in the operating record.

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. See attached comments from RWDI.

Metals

30. In the SAP it states "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." With the following statement "Quality control and assurance requirements specified in the method will be incorporated in the sampling protocol." It is unclear exactly what QA/QC requirements are being cited as Appendix G indirectly references 40 CFR Part 58 Appendix A and Appendix B. The referenced appendices have some differences in terms of their QA/QC requirements. EGLE requests EQD provide more detail as to which QA/QC requirements are being referenced.

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. See attached comments from RWDI.

E-2c(i)

31. Target detection or reporting limits must be revised to reflect what the laboratory is capable of meeting on a practical basis for analyte detection or quantitation. For example, current monitoring reports suggest that the actual detection limit for toluene is lower than the 1 µg/m3 detection limit listed in the table. Additionally, please add a detection limit for zinc in Table E-1.

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. The AAMP will be updated to include the requested information and submitted by EQD no later than December 30, 2022.

32. EQD must provide justification for the analytes to be analyzed as part of the AAMP. This justification should consider possible emission scenarios (including failure mode assessment), types of wastes received, quantity of wastes received, and waste handling and treatment procedures. EGLE recommends this evaluation include monitoring for Arsenic, 1,1,2-trichloroethane, 1,1,2,2-tetrachloroethane, and 1,2-dichloroethane (both isomers) as these parameters are either presently monitored for at EQD and or are believed to be present in the wastes received at the facility and exhibit relatively low Secondary Risk Screening Levels or Initial Threshold Screening Levels developed by AQD.

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. See attached comments from RWDI.

E-2c(ii)

33. EQD must establish quantitative QC criteria for the AAMP to assist in evaluation of data and self-initiate corrective action. EGLE recommends establishing the following criteria:
    a. A rolling 3-month data completeness requirement of 75% for each monitoring station. EGLE requests a data completeness requirement whereas at least 75% of the samples in a 3-month period are sampled and there are no data quality issues which may impact the

validity of the results (for instance, if TSP filters show pinholes upon evaluation in the lab, those samples would be biased low).

b. A measure of precision between co-located samplers (unless otherwise specified in a referenced method). For instance, a relative percent difference limit of 30% could be established and used for evaluating field and laboratory precision and to initiate corrective measures if needed.

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. The AAMP will be updated to include the requested information and submitted by EQD no later than December 30, 2022.

34. Ambient air monitoring data submissions must include sufficient laboratory and field information to review and perform data validation. Laboratory or field QC information and samples (such as noted holes in TSP filters, continuing calibration verification samples) must be available for both EQD and EGLE to review the validity of the submitted monitoring data and apply appropriate data qualifications. As referenced in item 16 above, EGLE requests this information was submitted as a report with monthly submissions. The AAMP should describe how EQD performs data validation and when data is qualified or rejected.
    a. Field documentation indicating any issues such as flow verification discrepancies which could impact sample results
    b. Laboratory narrative identifying any issues identified with analysis
    c. Data qualifications
    d. Batch laboratory QC samples such as method blanks, laboratory controls samples, and calibration samples.

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. The AAMP will be updated to include the requested information and submitted by EQD no later than December 30, 2022.

35. EGLE requests an assessment of ambient air monitor siting locations. Several sources (Quality Assurance Handbook for Air Pollution Measurement Systems Volume 2, Technical Assistance Document for the National Air Toxics Trends Stations Program Revision 3) offer recommendations for monitor siting criteria to help ensure representative sample collection and prevent interferences between inlets/monitors and nearby obstructions. It is noted that due to the nature of perimeter monitoring, not all siting criteria may be able to be achieved. To this point, the facility should identify siting criteria that cannot be achieved due to site limitations and develop a management plan or maintenance schedule to maintain achievable siting criteria. For example, vegetation near the monitoring stations may need to be periodically monitored, and obstructions to the monitor (such as parked vehicles or equipment which are taller than the monitor) must be avoided during sample collection. Additionally, it is recommended that site observations are recorded if during sample collection, sample interferences such as construction, vegetation, or temporary obstructions can be noted. EGLE recommends EQD establish the following siting criteria to be maintained at the facility monitoring locations:
    a. Height from ground to inlet: 2-15Mm
    b. Horizontal and vertical distance from supporting structures to inlet: >1 meter.
    c. Distance to trees: >10 meters.
    d. Distance from obstructions: Twice the height the obstacle protrudes above the sampler.
    e. Collocated monitors must be within four meters of each other.
    f. TSP or high-volume samplers must be greater than two meters apart from all other sampling inlets.
    g. TSP or high-volume sampler outlets should be greater than two meters apart from all other sampling inlets.

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. The AAMP will be updated to include the requested information and submitted by EQD no later than December 30, 2022.

36. Please provide laboratory QA/QC protocols, QC sample frequency, and criteria for laboratory analytical analyses performed as required in R299.9611(2)(a)(viii). For example, TO-17 does not explicitly establish surrogate recovery limits but may be relevant in evaluating sample analysis. A QA manual may be submitted as a response to this request if it contains all the requested information or alternatively may be incorporated into method specific SOPs.

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. The AAMP will be updated to include the requested information and submitted by EQD no later than December 30, 2022.**E-5:**

37. This section states, "Should any sudden, unplanned discharge to sewers occur, the facility will notify the GLWA in accordance with the provisions established in Environmental Safeguard and Engineering Descriptions. Please provide the referenced provisions.

EQD Response: The language in this section appears to be outdated. The wording has been changed and the permit is attached for reference.

38. EQD must provide any records of releases to soil or groundwater, in addition to the mentioned 1989 UST removal. EGLE is aware of at least one incident – a 2017 household hazardous waste release which was cleaned up – and is not mentioned in the application.

EQD Response: There are no documented releases to the soil or groundwater. The 2017 household hazardous waste spill was determined to not be a release to soil nor groundwater. The amount of material which left the container was below the reportable quantity (RQ) threshold and was completely cleaned up. Therefore, no waste was released to the environment. This was reported to EGLE in a letter addressed to the Lansing office dated May 24, 2017.

ENVIRONMENTAL MONITORING

39. SAP. Sampling and Analysis Plan for each environmental monitoring program
    a. Section E.: Environmental Monitoring Program (AAMP) discussion is minimal here. Detailed information on the types of samplers, the methods for deploying and collecting the samplers, the collection procedures for the samplers (including procedures to prevent contamination of the samplers), and sampler transport and submittal to the analytical laboratory (including chain of custody procedures), along with all relevant forms, must be provided.

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. The AAMP will be updated to include the requested information and submitted by EQD no later than December 30, 2022.

40. SAP. Data analysis, including statistical method used.
    a. Section E must be revised to include the standards that sample results will be compared to and any statistical or other treatment of the data used to make the comparisons to the standards.

EQD Response: EQD contracted RWDI Engineering to assist with this evaluation. The AAMP will be updated to include the requested information and submitted by EQD no later than December 30, 2022.

41. AAMP per Part 55 of Act 451.
    a. Tables E-1 and E-2 must be updated to indicate analytical method used for each monitored constituent. One monthly sample is not considered adequate: reference Section E, "Environmental Monitoring," for more details.

EQD Response: A minor modification to sample monthly was approved by EGLE in a letter dated November 20, 2008. However, EQD contracted RWDI Engineering to assist with this evaluation, including

the proposal for more frequent sampling. The AAMP will be updated to include the requested information and submitted by EQD no later than December 30, 2022.

CORRECTIVE ACTION

42. Dates of operation for waste management units.
    a. Please clarify as to whether this information is covered in Table D-1 or elsewhere (specify where) in the application.

EQD Response: Year of construction is included in Table D-1.

Section F – Procedures to Prevent Hazards:

43. Define and include a schedule for when fire, spill control, and decontamination equipment, and communications systems are tested and maintained.

EQD Response: This information is included in Section O and the corresponding referenced attachments.

Section G – Contingency Plan:

44. EGLE requests that tabletop exercises be regularly hosted with local emergency services to ensure continuity and compliance with the Contingency Plan.

EQD Response: The local emergency services have routinely been asked and, occasionally, have joined EQD in Contingency Plan exercises. In more recent years this has not occurred due to the COVID pandemic. This practice will be restarted in the future. However, we request that this be evaluated for inclusion in the Host Community Agreement (HCA) or other means. The inclusion in the permit is not an appropriate restriction to include, as the local emergency services are not obligated to agree to routine exercises with our facility.

45. Clarify "Evacuation Plan" language – it initially is interpreted as only being concerned with on-site, but later in the section neighborhood evacuation is mentioned – please clarify on what level local authorities would be contacted and when the evacuation of offsite properties would be implemented.

EQD Response: Added Figures G-2 and G-3 for further clarification.

46. Clarify what procedures will be taken for on-site releases of hazardous waste. Even if immediate exposure risks are addressed following a spill, wholistic soil and/or groundwater impacts must be addressed through the RCRA/Part 111 corrective action program.

EQD Response: The Contingency Plan is written to respond to releases both on and off-site. The measures taken to clean up a spill will be the same on site as they will be off site. Additionally see Figure G-2 for details.

Section H – Personnel Training Program:

47. Various sections of the Outline for Intro Training Table (H-1a) have a frequency of "PERIODIC." Please revise to define timeframes when training will occur (i.e., six months, annually).

EQD Response: The frequency has been updated.

Section I – Closure and Post-Closure Plans:

General Comments

48. Please update the Closure and Post-Closure Plan using the updated EGLE Hazardous Waste License Application Forms previously provided to you.

EQD Response: The Closure Plan has been written based on the forms provided by EGLE. Note that Post-Closure does not apply as the facility is not a landfill.

49. Detailed Sampling and Analysis Procedures must be included which accurately describes the sampling and analytical methods that will be used to determine decontamination (see comment #12 below for more details)

EQD Response: See Section A11.A.5(a)B.4 and A11.A.5(b)B.4 for container storage area and tank system sampling and analysis plans, respectively.

50. Under R299.9613 (6) "The environmental protection standards established pursuant to the provisions of Part 201 of the act shall be used to perform closure and post-closure of a facility under Part 111 of the act if the limits are not less stringent than those allowed pursuant to the provisions of RCRA." Please update language referring to Part 201 criteria to include a statement clarifying that more stringent clean-up criteria might be needed for closure determination if Part 201 limits are less stringent than RCRA.

EQD Response: This has been added to A11.A.5(a)B.4 Analysis section and A11.A.5(b)B.4 Analysis section.

Unit Specific Information

I-1b

51. Please update the Unit Specific Information table so it is consistent with the information provided in the Plans and Specifications Section of the Operating License. The table does not include the silos S1, S2, and S3, and the vault 901.

EQD Response: Tanks S1, S2, S3, S4 and 901 are nonhazardous tanks. Table A11.A.2 lists all bulk hazardous waste tanks.

Schedule of Final Facility Closure

I-1c(i)

52. The specified extraction technologies are referenced in 40 CFR 268.45 not in 40 CFR 268.65. Please correct with appropriate reference.

EQD Response: The requested revision has been made. The reference to 40 CFR 268.65 was the result of a typo.

53. For this section, the brief description of the tasks to be completed and a schedule is sufficient. Other in-depth details about closing the specific units should be described in I-1e(i)- Unit Specific Closure procedures.

EQD Response: This has been addressed by using the EGLE template provided.

I-1c(iv-ix)

54. The generic groundwater volatilization to indoor air inhalation criteria and soil volatilization to indoor air inhalation criteria established under Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Part 201), have been found to be insufficiently.

    Recovery Act (RCRA) requirements and are therefore not applicable for use at RCRA regulated facilities for determining vapor intrusion risks. The U.S. EPA currently authorizes part 111 to use the statewide default background soil criteria provided in the September 28, 2012, Part 201 Tables,

or develop a site-specific background for metals in coordination with EGLE MMD project staff. The remainder of the criteria authorized for use in Michigan are in the September 28, 2012, Part 201 criteria tables. Please specify in the application which criteria EQD will be using for each media.

EQD Response: Statements added to A11.A.5(a)B.4 and A11.A.5(b)B.4 to address background sampling criteria.

55. Appropriate sampling methods, equipment, bottles, and containers must be used according to U.S. EPA 's and EGLE's guidance, and specific method requirements. Please include further detail on how samples will be collected and preserved accordingly to SW-846.

EQD Response: See A11.A.5(a)B.4 and A11.A.5(b)B.4 for sampling methods and references.

56. The plan must state that the following information will be collected and provided if contamination is found:
    a. The depth at which samples are to be collected
    b. The procedures to be used to collect soil samples
    c. The parameters that are proposed for testing.
    d. The procedures to be used to decontaminate any non-dedicated equipment and to document that the equipment was adequately cleaned.
    e. A description of the method(s) to be used to evaluate the analytical data.
    f. The proposed response activities that will be undertaken to address any contaminated areas.
    g. A schedule for the work to be conducted.

EQD Response: See A11.A.5(a)B.2 and A11.A.5(b)B.2.

57. The Operational Memorandum #2 Sampling and Analysis Guidance issued October 22, 2004, has been superseded by the DEQ Application of Target Detection Limits and Designated Analytical Methods, March 2016. Please use the updated reference document to determine appropriate method detection limits (Copy enclosed).

EQD Response: References updated, see A11.A.5(a)B.4 and A11.A.5(b)B.4.

58. Please describe the QA/QC procedures that will be followed.

EQD Response: The QA/QC plan contains the written procedures outlined in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, Third Edition, Chapter 1 (November 1986), and its Updates.

Unit Specific Closure Procedures:

59. The handling inherent in the process of compositing samples is highly likely to allow additional volatilization of contaminant mass, resulting in a non- representative sample that underrepresents contaminant concentrations. Please provide for collecting discrete samples for waste characterization that includes VOC and SVOC analysis for closure sampling activities.

EQD Response: Grab sampling specified in A11.A.5(a)B.4 and A11.A.5(b)B.4.

CLOSURE:

60. A description of the methods to remove, transport, treat or dispose of all hazardous wastes.
    a. Section I-1(c), Item 1. refers to "Removal, Treatment and Disposal of Waste Inventory" but no detail is provided The Application must identify the procedures EQD will use to remove, treatment, or disposal of the waste inventory at closure.

EQD Response: See A11.A.5(a)B. and A11.A.5(b)B.

61. A detailed description of the steps to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils.
    a. The Closure and Post Closure Care Plan states that cleaning of Tanks, Equipment and Concrete and Asphalt Surfaces, respectively, will be conducted "in compliance with the extraction technologies specified in 40 CFR 268.45 or will consist of triple rinsing." The specific methods (specific extraction technologies or triple rinsing) are to be used on which specific hazardous waste management units must be listed in sections I-1c(i) through I-1c(iii). Section I- 1b states that unit-specific methods of closure are "listed in the table below" but they are not.

EQD Response: See A11.A.5(a)B.3 and A11.A.5(b)B.3

62. Criteria for determining the extent of decontamination required.
    a. Section I-1e indicates that decontamination will be considered complete for concrete and bituminous surfaces, walls, secondary containment, and steel lined concrete vaults after triple rinsing (combined with a detergent wash in the case of steel lined concrete vaults) with no confirmatory sampling required. Confirmatory samples must be collected from (at a minimum) the point of lowest elevation in all these units.

EQD Response: See A11.A.5(a)B.4 and A11.A.5(b)B.4 for description of activities to be performed if contamination is found. Current language is sufficient based on A11 template provided by EGLE: "High pressure triple rinsing and visual inspection to verify that all contamination has been removed are adequate for solid surfaces like tanks, piping, and coated concrete containment systems." However, see A11.A.5.(b)B.4 which references confirmatory sampling at major low spot in the floor of tank system containment area.

63. A detailed description of other activities (run-on and run-off control, GWM, etc.) necessary to ensure that the closure performance standard is satisfied.
    a. No specific mention of methods to comply with this requirement was found. There were scattered references to collecting washwaters and the overall groundwater monitoring program, but a synthesis of these and other activities to satisfy the closure performance standard must be provided in the Closure and Post Closure Care Plan.

EQD Response: Hazardous waste storage and treatment processes are confined to containment areas, therefore, rinse water from decontamination will not contact run-off or groundwater. Run-on would not impact the results of the closure process.

Section J – Environmental Assessment:

64. Please clarify which parts of the facility are paved and where secondary and tertiary containment is implemented.
    a. Reevaluate statement made in Section J-1f regarding odors, dust, and/or other inconveniences to local residents. We have received complaints regarding nuisance dust emanating from EQD to the St. Aubin bike path, and EQD is currently in an administrative consent order with EGLE, MMD's Solid Waste Section to combat ongoing odor complaints.

EQD Response: A description of the paved/unpaved surfaces of the site are described in Section B. EQD has entered into a Consent Order with MMD which addresses odor complaints. However, the comment from EGLE on fugitive dust is not something that EQD has been made aware of. EQD does have a dust control obligation and procedures to address this.

ENVIRONMENTAL ASSESSMENT

65. Please update and include information that pertains to the residents, residential buildings, and recreational areas within a one-mile radius of the facility. This potentially includes:
    a. "nearest residential homes are located 0.25 miles to the east."
    b. ~500 ppl living within one mile of site, ~1,000 within three miles.

EQD Response: Additional information has been added including the following:

- The facility is in an area of Detroit zoned heavy industrial.
- The nearest residential homes are located .25 miles to the east.
- No residential or recreational properties are located within 60 meters of active portions of the facility; and
- Specific population characteristics in a one square mile area around the facility are provided in Appendix J- 2.

66. Many items close to site are not mentioned:
    a. The Eastern Market food processing facilities, located.
    b. The Greenway/bike path that is near the facility.
    c. The Judicial Complex that is being built near the facility.

EQD Response: The following non-exhaustive list of facilities is found within one-mile of the facility:

a. The Dequindre Cut pathway
b. The Judicial Complex that is being built near the facility.
c. Detroit Cultural Center establishments.

Section O – Inspection Schedules:

67. Please describe what EQD is conducting as inspections on the tanks, including tank integrity testing schedules (including tank thickness testing and the like).

EQD Response: Per 40 CFR 264.191 tank system integrity testing is not required for existing tanks within secondary containment that meets the requirements of 40 CFR 264.193. All hazardous tanks at EQD have secondary containment. Inspections of aboveground hazardous tank systems, containment, pumps, valves, piping and transfer lines, and ancillary equipment for leaks, corrosion, wear, etc., are performed and documented daily to satisfy the requirements of 40 CFR 264.193 and 40 CFR 264.195(a)-(d).

A2 - Introduction

1. Paragraph 1: Add "and that only waste treated to appropriate regulatory standards, such as LDRs, leave the facility." to ". . ., are received at the facility."

EQD Response: The requested language could not be added since received waste may leave the facility for further off-site treatment. EQD has revised the language to state, "EQD has developed this chemical and physical waste analysis plan to ensure only wastes that are authorized and properly characterized are received and waste sent off site for land disposal are treated to the appropriate regulatory standards."

A2.A.1(a)

2. Paragraph 3: Replace ". . . exceeding applicable land disposal restrictions may be approved for treatment at EQD or be. . ." with ". . . exceeding applicable land disposal restrictions will be approved for treatment at EQD or be. . ."

EQD Response: The requested change has been made.

3. Paragraph 3: Remove "to be delisted" from "Delisting of waste codes must utilize procedures detailed in the Code of Federal Regulations, Title 40, Protection of the Environment (40 CFR), §260.22 to be delisted."

EQD Response: The requested change has been made.

A2.A.1(b)

4. Please reword the bullet "Ignitable wastes (D001 when flashpoint is <140F) with a flashpoint <90F may be stored but may not be treated," for clarity and to explicitly state what waste is prohibited for treatment.

EQD Response: The requested change has been made.

5. Please attach the Host Community Agreement referenced for definition of radioactive waste; this ensures a change of the status of that waste at EQD will be addressed through the license modification process.

EQD Response: EQD has revised the bullet points in A2.A1(b) to include TENORM and Low Level Radioactive Mixed Waste, as the Host Community Agreement is not a requirement of Part 111.

A2.A.2

6. Delete one of the two uses of "odor" in the physical characteristics tab of the "Waste Description" bullet.

EQD Response: The requested change has been made.

A2.A.3(a)

7. Paragraph 2, bullet 2: For the statement, "A generating process that has an input with fluctuations that do not alter the characterization, as demonstrated by knowledge, will not require reoccurring sampling analysis unless there is a change to the generating process that impacts the

characterization (which includes the constituents subject to treatment)," how will it be established that fluctuations are not altering characterization?

EQD Response: Fluctuations will be established through testing or acceptable generator knowledge which is described in A2.A.2 as, "Acceptable generator knowledge (referred to in this WAP as "knowledge"), that may be used. "Knowledge" includes but is 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 basis for the generator process knowledge will be documented in the waste streams file."

8. Paragraph 2, bullet 3: What, specifically, does "generated at the highest input levels" mean? Please provide examples of how that occurs in actual waste generation scenarios.

EQD Response: The following example has been added, "For example, the composition of an industrial rinse water would be characterized according to the upper estimate of material contained in the rinse water based on one or more of the following: (1) analytical data points collected, (2) the SDS(s) for material being rinsed and generator process knowledge (i.e. quantity of material being rinsed and quantity of water used for rinse).

9. Paragraph 3: The mid-sentence tense changes in the parenthetical makes it difficult to understand. Please revise for clarity.

EQD Response: The requested change has been made within the bullet points of paragraph 2. Paragraph 3 of section A2.A.3(a) does not have any parentheses.

10. Paragraph 5: Remove "as practicable" to begin the paragraph.

EQD Response: The requested change has been made.

A2.A.3(b)

11. Paragraph 1: Reword "general thought process" to state that, "the following steps will be taken to ensure waste is adequately characterized before EQD will agree to accept it" or similar.

EQD Response: The bulletized list is not meant to describe a step-wise list. The following language has been added: "Generator's basis for waste characterization generally falls into one of the following:

- Generators can conservatively characterize waste as hazardous for all potential contaminants of concern reasonably expected to be present above LDRs. This is supported by knowledge.
- A generating process that is not listed and that does not have any characteristically hazardous constituents placed in or created by the generating process, will not require any testing as knowledge can be utilized to determine it is not hazardous. Generators will be asked whether testing or knowledge is used for justification of their characterization.
- A generating process that does involve characteristically hazardous constituents and/or physical properties must be able to sufficiently characterize the waste to determine compliance with characteristic standards and applicable LDRs. This can be accomplished through knowledge and/or testing that provides the minimum and maximum representative constituent concentrations as determined by the generator. Concentrations that exceed applicable LDRs will be treated.
- A generating process that is listed must demonstrate compliance with applicable LDRs through knowledge and/or testing providing the representative constituent concentrations as determined by

the generator. Constituents of concern associated with the listing as well as any other characteristics that are exhibited by the waste will be evaluated for compliance with LDR. Concentrations that exceed applicable LDRs will be treated."

12. Bullet 2: Include a caveat saying that the rationale and justification used to make this decision will be provided.

EQD Response: Generators will be asked whether testing or knowledge is used for justification of their characterization.

13. Bullet 4: Remove "minimum and maximum" qualifier.

EQD Response: Requested change has been made

A2.A.4

14. Paragraph 1: Does EQD propose any other standards of reasonableness besides Table UTS in 268.48 or is this to be the sole standard?

EQD Response: 40 CFR 268.48 are the only standards that determine applicability of UHC.

15. Paragraph 3: Please define "Acceptable Treatment Methods," including a regulatory standard/citation.

EQD Response: The reference to "Acceptable Treatment Method" has been removed.

A2.A.4(a)

16. Paragraph 1: Regarding "knowledge of impermissible dilution," how will this knowledge be actively solicited and obtained by EQD?

EQD Response: Information is obtained through review of pre-acceptance information provided in section A2.A.2. For example, if analysis is provided that indicates the waste is characteristically hazardous for lead, but the generator identifies the waste as non-hazardous and explains it was because a mass balance determination showed the characteristic is not applicable, then EQD would treat the material as hazardous for lead.

17. Paragraph 2: Regarding "Constituents may fluctuate…," what defines a "fluctuation" and what degree of "fluctuation" is tied to what increased frequency of analysis?

EQD Response: Changes in concentration that will alter the applicability of a waste code or, constituents exceeding land disposal restriction or treatment technology required to meet land disposal requirements.

A2.A.5

18. Paragraph 2: "Contaminates" should be "contaminants".

EQD Response: The revision was made.

A2.A.6

19. Paragraph 1, bullet 1: How does EQD ensure/audit generators' compliance with this requirement?

EQD Response: Generators provide a certification stating their characterization and process information is representative, true, and accurate of their waste. This requirement is provided in section A2.A.2. EQD's pre-acceptance paperwork review, inspection, and sampling process screen for changes in the waste. Lastly as stated in this section, "The initial evaluation of waste from each generator will be reevaluated at least once a year to ensure the information provided is accurate and up-to-date. For each hazardous waste

approval, the generator will be provided with a notification that informs them their annual review is required. The generator must provide certification that the information previously provided is factual and an accurate representation of the waste. The generator is directed not to provide this certification if changes have occurred to the waste stream or if they cannot be confident in their representation that the previously provided information is still accurate. Changes which impact the waste characterization result in an amendment of the existing approval or, if the changes are too extensive, a new approval may be issued. Waste approvals that have not received an updated generator certification within one year of the last review will not be approved for receipt at the facility until a certification is obtained or any changes in the characterization have been approved."

20. Paragraph 2: Add "or the waste will not be accepted" as a condition at the end of "Changes which impact the waste characterization…"

EQD Response: The revision was made.

A2.B.1

21. Paragraph 2: Add "of the waste," after, "Prior to allowing the transporter to relinquish possession" and before "paperwork is…"

EQD Response: The revision was made.

22. Paragraph 3: Please specify what kind of knowledge triggers this additional sampling?

EQD Response: The following language has been added, "Examples of knowledge that could trigger additional samples include variability in the color from previous receipts or changes in the odor of the waste."

A2.B.1(b)

23. Paragraph 4: What are the decision criteria used to determine if layers or other heterogeneities are composited or analyzed separately?

EQD Response: Paragraph 9 states, "If the containers contain waste materials that visually differ from each other, an additional 10 percent of the manifested container count from each unique non-bulk approval number per shipment will have a minimum of one grab sample collected from the container(s) that are visually inspected. Each sample will be analyzed separately."

24. Paragraph 5: Under what specific circumstances will grab samples be collected from the surface of the waste and under what specific circumstances will composite (or other) samples be collected from the surface of the waste? This discussion in unclear.

EQD Response: Paragraph 5 was updated to state, "All sampling is done via grab sample. The horizontal location in which the waste is sampled is also at the discretion of the sampler. The vertical depth of the sample is limited by the sampling equipment utilized and the physical properties of the waste. Grab samples will usually be collected from the top portion of the material as far down into the waste as the sampling apparatus allows. Surficial grab samples can quickly demonstrate whether material sampled does or does not match the waste profile. When possible, sampling devices that allow core samples to be collected will be used to collect as far into the sample containers as is practicable. This is influenced by factors such as the physical state of the waste, container sample size, and accessibility of the waste."

25. Paragraph 6: Revise the second sentence to read ". . . a roll-off box of soil may not be able to be sampled using an auger, etc.".

EQD Response: The revision was made.

26. Paragraph 6: Insert "to sample the free-standing liquids" after the word "utilized" at the end of the paragraph. Also, please describe how the solid portion of a waste with some free-standing liquid will be sampled.

EQD Response: The cup can be utilized to sample free standing liquids and solids. Therefore, no change is needed.

27. Paragraph 7: Please revise the sentence beginning with "Decontamination is only required if…" for clarity; it may be better to use a bulleted list of conditions.

EQD Response: The revision was made.

28. Paragraph 7: Please clarify that these "personnel" refers to personnel conducting sample collection at the facility.

EQD Response: The paragraph has been revised to state, "Note that site personnel performing sampling are trained…"

29. Paragraph 8: Insert the word "immediately" between "performed" and "following". If screening tests are not performed immediately (less than an hour) after sample collection, please provide the methods by which samples will be preserved until they can be subjected to screening tests.

EQD Response: Preservation and hold times are provided in table A.2.

A2.B.1(c)

30. Level 2 bullet: What does the use of "supplement" mean in this instance? Does it mean that all incoming waste streams will be sampled unless it is physically impossible to do so? If that is the case, please state it.

EQD Response: As stated, "Level 2 analysis will be performed for initial shipments of waste sampled to obtain reasonable assurance that the pre-approval information was accurate, by analyzing additional parameters on the first receipt as identified in Table B.2."

31. Paragraph 3: Please identify when "Expected screening results are assigned to a waste," and the personnel making the assignment. Are these "expected screening results" the "pre-approval information" mentioned in the following sentence?

EQD Response: Yes.

A2.B.1(d)

32. Bullet 1: What is "the solvent" discussed here? Are these supposed to be solid (state of matter) wastes contaminated with solvents? Please clarify.

EQD Response: This language has been removed.

33. Paragraph 2: Delete the phrase "whenever possible". If the following sentence is corrected as noted, this phrase is redundant. Replace "exceptions" to begin the next sentence with, "the only exceptions are. . ."

EQD Response: This language has been removed. EQD is requesting EGLE describe what will be considered by the Director in the case-by-case evaluations.

34. Paragraph 2: The final sentence is a non-sequitur. Please redraft for clarity.
    a. "Debris" sub-bullet 2: This is the first mention of "data quality objectives" in the document. If formal data quality objectives (a specific and defined term) exist, please provide a

detailed discussion of what they are, how they were developed, and the quantitative and qualitative procedures for determining if they are met. If they do not exist as described, please remove this term here and throughout the remainder of the document.

EQD Response: Language has been revised to state, "Therefore, no sampling or analysis are necessary."

b. "Filters from inside tanks…" sub-bullet 2: "Reason for exception: Representative samples can cannot reasonably be collected." needs to be redrafted.

EQD Response: Language has been revised to state, "Representative samples cannot reasonably be collected. A visual inspection provides sufficient information to confirm the identity of the waste on the accompanying shipping paper and pre-approval information."

c. "Spent activated carbon…" sub-bullet 1: First sentence combines two fragments of different sentences; please redraft for clarity.

EQD Response: The sentences have been redrafted for clarity as follows: "Exception: Sampling is not required when it is not reasonably possible to collect a sample. For example, a filter media sealed inside a filter housing or filter media hardened into a monolith. It is acknowledged that these are expected to be relatively rare exceptions and that such filter media will normally be sampled. Visual inspection is still required."

d. "Spent activated carbon…" sub-bullet 2: First sentence needs to be redrafted.

EQD Response: Language has been revised to state, "Reason for exception: Representative samples cannot reasonably be collected."

e. "Waste with an acute health hazard…" bullet: Are there additional procedures (in terms of generator procedures) to ensure that waste that is an acute health hazard is adequately characterized by the generator? Potentially infectious waste can be sampled using the same personal protective equipment regularly used by personnel at the generating facility.

EQD Response: As stated in A2.B.1(b), "The sampling is not intended to characterize the waste." This is the obligation of the generator. 40 CFR 262.11. Regarding potentially infectious waste, a visual inspection can confirm that the waste consists solely of the sharps or other waste materials and all the waste is assumed to be infectious based on the generator's characterization and physical description of the waste. Additional sampling will not provide any additional information to change the generator's characterization and the sampling presents a significant risk of exposure to the sampler, even if personal protective equipment is used. Note that the risk mitigated by personal protective equipment at a generator (using, for example, one needle at a time under very controlled circumstances) is very different than the risks that would need to be mitigated at EQD (reaching into a container storing [hundreds] of needles).

Using personal protective equipment is often essential, but it is the last line of defense after engineering controls, work practices, and administrative controls. Sampling has a high to moderate risk of skin exposure during (i.e., exposed skin while reaching or unknown damage to PPE) and after sampling (i.e. During the removal of PPE). The exceptions to sampling have been limited to instances where sampling is not necessary to confirm the waste is consistent with the preapproval information.

35. Paragraph 3, "certification from the generator…" bullet: Insert "that" between "generator" and "waste".

EQD Response: The requested revision has been made.

36. Paragraph 3, "documentation that must be…" bullet: The parenthetical "(EQD or EQD)" -is confusing the sentence structure, please redraft for clarity.

EQD Response: The language has been removed to eliminate confusion.

37. Paragraph 4: Is the first sentence ("An inspection of the shipping document…") supposed to state that an inspection of the shipping document will be performed, and a land disposal restriction certification must accompany the hazardous waste manifest? As drafted, it is very confusing and open to varying interpretation. Redraft to state explicitly what is meant.

EQD Response: For clarity the section has been revised to state, "EQD will complete a paperwork review as described in A2.B.1(a) (generator must include the approval number and a certification stating the waste is fully and accurately described on the shipping document)."

38. Paragraph 4: What demonstration is the "such a demonstration" being referred to here? Revise to specify and clarify.

EQD Response: The language has been removed to eliminate confusion.

A2.B.2

39. Paragraph 1: What is the difference between "waste profile information" and the "pre-approval information"? Please revise or define what is being compared.

EQD Response: The language has been removed to eliminate confusion.

40. Paragraph 1: Please redraft to, first, define specifically what constitutes a "discrepancy" and, secondly, list how each type of discrepancy will (not might or may) be addressed.

EQD Response: The language has been revised as follows, "Consistent with 40 CFR 264.72, a discrepancy is defined as significant differences in the quantity or type of hazardous waste designated on the manifest or shipping paper and what EQD actually receives. Discrepancies will be determined by identifying inconsistencies between the waste received and the pre-approval information (or inaccurate or incomplete shipping documents). Discrepancy(ies) will be recorded on the receiving document when the receipt is created." Resolution of the discrepancy(ies) is evaluated on a case by case-by-case basis and is dependent on information provided by the generator. A description of the procedures is as follows, "EQD will make every effort to resolve the discrepancy and accept the waste. A representative of the generator or customer will be notified to resolve the discrepancy if EQD receives a shipment of waste that is inconsistent with the pre-approval information and/or if the waste shipment has incorrect, incomplete, or missing documentation including but not limited to the LDR notification or shipping paper. Discrepancies in paperwork or sample analysis may result in changes that may require additional handling procedures or modifications to the paperwork or waste characterization. Confirmatory analysis utilizing Level 3 screening can be performed on the waste to verify information provided by the generator or their representative if the generator cannot support their assessment of the waste through knowledge or analysis. Information obtained from the generator, or their representative will be utilized to evaluate the waste and determine the Level 3 parameters that will be analyzed. Samples tested will either be samples obtained for pre-acceptance or additional samples will be collected as described by A2.B.1(b). Alternatively, the waste will be rejected."

41. Paragraph 2: The second sentence states that the information (not the waste) will not be treated until the discrepancy is resolved. Please revise to state what is meant appropriately.

EQD Response: This has been revised to state, "If information indicates a change in the characterization and/or the LDR specifications of the waste, it will not be treated or disposed of until the generator amends the characterization."

42. Paragraph 2: Does "the designated facility" in the sentence "The transporter can retain custody…" refer to EQD or "an alternate facility" mentioned in the previous sentence? Please redraft for clarity.

EQD Response: The designated facility is referring to the designated facility indicated on the manifest. Language has been revised for clarity.

43. Paragraph 2: Add “appropriate to the container and waste type.” to the end of the sentence “. . . custody will be placed in a permitted storage area.”

EQD Response: Language has been revised to state, “Waste that remains in EQD custody will be placed in the appropriate permitted storage area.”

44. Paragraph 2: If re-packaging is required, please describe who will be responsible, the schedule on which it will proceed, and how and where documentation of any such re-packaging will be provided and maintained.

EQD Response: Language has been revised to state, “Containers will be repackaged either by the transporter or EQD. If repackaged by EQD this will occur prior to rejection. Note that container specifications are required to be documented on the manifest prior to shipment.”

A2.C.1(a)

45. Paragraph 1: What specific compatibility issues result in what specific waste types being transferred to what specific "appropriate containers"?

EQD Response: Additional explanation has been added.

46. Paragraph 2: Replace “This” in the sentence “This waste must be separated…” with “ignitable and/or reactive”

EQD Response: The requested change was made.

47. Table C.1, Poisonous Liquids row: Please define PG I, Zone A materials.

EQD Response: The regulatory reference has been added under the Table.

A2.C.2(a)

48. Paragraph 1: Please define “constituents of concern” and ensure that it is used consistently through the remainder of the document.

EQD Response: The requested change was made.

49. Paragraph 1: Add “and the results of pre-acceptance screening” to the end of the final sentence.

EQD Response: The requested change was made.

A2.C.2(b)

50. Level 1 Paperwork Compatibility (and throughout): Are the “Level X” references to the tiered screening approach in A2.B.1(c)?

EQD Response: Yes.

51. Level 1 Compatibility Assessment: The sentence “Compatibility grouping is not combined with incompatible waste or reagents that may cause adverse reactions,” is a non-sequitur. Please redraft for clarity.

EQD Response: Language has been revised to state, “Compatibility groupings should be evaluated as follows unless additional testing determines no adverse reaction will occur.”

52. Table C.3, Oxidizers row: “Single oxidizer type will most commonly be processed by itself followed by deactivation confirmation,” but how will single oxidizer types be handled in situations that are exceptions to what is "most common"?

EQD Response: Clarification has been provided as follows, “Supervisors may evaluate waste type for chemical oxidization properties. Single oxidizer type will most commonly be processed by itself unless Level 3 reactivity screening determines no adverse reaction will occur.”

53. Level 2 Reactivity Screening: The waste must be screened for reactivity with the specific reagent(s) that WILL be used to screen it. Please remove the word “may.”

EQD Response: Level 2 screening conservatively assesses reactions under extreme conditions. It is not intended to expose the waste to all reagents that will be added to the treatment tanks. This is the reason for Level 3 testing.

54. Excessive Gas Evolution bullet: Define "appear" and "significant amounts" as terms that can be assessed qualitatively (appear) and quantitatively (significant amounts).

EQD Response: Language has been revised as follows:

“Compatibility is determined based on an absence of an adverse reaction. A reaction is considered adverse if it results in unexpected and uncontrollable gas evolution, heat, or consistency in the mock tank as follows:

- Gas Evolution - Materials that upon mixing, appear to liberate flammable or explosive vapors, fumes, or mists. This is determined through visual observation of bubbling or foaming. If a reaction is observed a match test is completed to determine if the gas generated is ignitable. Ignitable gas is demonstrated through popping noises as the match approaches, flame in the mock tank, or a flare up of the match.
- Heat Generation - Materials that, upon mixing, generate heat that cannot be controlled through the addition of water. This is determined by feeling heat generated from the mock tank or by touching the side of the mock tank and visually through observation of boiling or splattering that is not reduced when water is added.
- Consistency- Materials that, upon mixing, result in the formation of a sludge, or solid or gel that causes a removal or subsequent handling problem. This is determined through visual observation of the consistency.”

55. Level 3 Mock Tank Compatibility, paragraph 1: Replace “which” with “and” in the first sentence.

EQD Response: The requested revision was made.

56. Level 3 Mock Tank Compatibility, paragraph 1: Wastes for which reactivity is a potential concern and for which a sample cannot be collected must be reevaluated (the "pre-approval" process) more frequently than annually. Quarterly reevaluation, along with reevaluation any time the process or inputs generating the waste change, is appropriate.

EQD Response: In the event EQD is aware a waste stream has a potential reactivity concern, controls to ensure an adverse reaction does not occur are implemented. Ultimately, it is the obligation of generators to properly characterize their waste pursuant to 40 CFR 262.11. Generators must notify EQD when there is a change in the process or operation generating the waste so that it can be reevaluated. Lastly, generators are required to identify the waste unique identification number on the hazardous waste manifest and certify the waste is accurately described on the manifest.

57. Level 3 Mock Tank Compatibility, paragraph 3: What happens to waste that has already been placed in a tank if it fails compatibility testing?

EQD Response: As stated, “Waste is assigned to a tank if no adverse reaction is observed”. The compatibility precedes the assignment of the tank.

58. Level 3 Mock Tank Compatibility, paragraph 4: Why is this expected that the reagents used to retreat are compatibilized? Is the waste being retreated with the same reagents used in the initial treatment? If this is the case, please state it. Also, in what specific circumstances will this alternate approach be used? What does "may be compatibilized" mean? Does it mean that the reagent(s) will be exposed to a sample of the unsuccessfully treated tank?

EQD Response: For clarity the following revision has been made, “If a batch is to be retreated, the reagents used to retreat will be combined with the mock tank to confirm they are compatible. Alternatively, additional reagent will be combined with an actual sample of the well-mixed tank.”

The alternate approach is available as an additional tool for facility operations. No specific circumstance was envisioned. This is a tool that the operations staff can choose to use.

59. Last paragraph page 32, including bullets: This text is redundant, duplicated verbatim previously. It should be deleted.

EQD Response: Complete. Language is included in both Level 2 and Level 3 as it applies to both screening processes.

60. First paragraph, page 33, final sentence: To whom must it be acknowledged and why? This sentence reads like it is a justification for the compatibility testing (as proposed) failing to detect incompatibilities leading to adverse reactions. If that is the case, please revise the proposed compatibility testing so that it is more dependable in detecting the potential for adverse reactions in real world waste treatment scenarios.

EQD Response: The proposed compatibility procedures are robust and reasonably expected to detect incompatibilities. EQD provided this representative sampling language to highlight the TSDFs obligation and potential limitations that exist even if we comply with the requirements of 40 CFR 264.13.

61. After Compatibility Testing, paragraph 1: replace “may” in the sentence “If an adverse reaction observed…” with “will either.” Add text describing the decision criteria used to determine if the waste in question should be treated in a different tank (or any other changes to the treatment process) or returned to the generator.

EQD Response: This change was made.

A2.C.3

62. Paragraph 1: Please define “different like-wastes.”

EQD Response: Language has been revised to remove “different” and define “like waste” as waste streams with similar waste properties.

63. Paragraph 1: In the sentence “EQD does not selectively bulk RCRA hazardous waste…,” replace “does not” with “will not.”

EQD Response: The requested revision has been made.

64. Paragraph 2: Please reword the phrase “pending compatibility confirmation” to indicate no waste will be bulked or consolidated until compatibility is confirmed, for clarity.

EQD Response: Language has been clarified to state, “Liquid and solid hazardous wastes may be bulked or consolidated into larger or fewer containers in any EQD permitted storage area. Note that no waste will be bulked or consolidated until compatibility is confirmed.”

65. Paragraph 2: If the intent of the sentence "If a roll-off box or other bulk reusable…" is to address wastes that are bulked, consolidated, and then transported to an offsite location, please redraft to make that clarification. If something else is meant by the sentence, please describe.

EQD Response: Language has been clarified to state, "When" in lieu of "If".

A2.D.1

66. Paragraph 1: Replace "treated" with "conducted" in the sentence "No other hazardous waste treatment is proposed to be treated…". Also, is this paragraph meant to state that immobilization is the only hazardous waste treatment to be conducted at EQD or that hazardous debris will only be treated by immobilization? As written, it states the former.

EQD Response: The requested revision has been made. For clarity the paragraph has been revised to state, "EQD to treats hazardous debris by immobilization."

67. Paragraph 1: Please redraft the sentence, "treatment of the constituents of concern associated with the waste codes…" for clarity (potentially "Treatment of the constituents of concern associated with the waste codes characterized and UHCs (when required) reasonably anticipated to be present at the point of generation, as identified by the generator during the pre-approval process, occurs in accordance with applicable treatment methods, as described in Table D.1, below." if EGLE interprets the meaning correctly).

EQD Response: Language has been revised to state, "Treatment of the constituents of concern associated with the waste codes characterized and UHCs (when required) reasonably anticipated to be present at the point of generation as identified by the generator during the pre-approval process occurs in accordance with applicable treatment methods (See Table D.1 for recommended treatments)."

68. Paragraph 1: Add "or not accepted by EQD." to the end of the final sentence.

EQD Response: The following language has been added, "If a resolution to the discrepancy cannot be obtained the waste will be rejected or not approved."

69. Paragraph 2: List (either in this paragraph or in a separate paragraph following Table D.1) the specific situations and decision criteria used to determine when a treatment will deviate from these recommended treatment methods.

EQD Response: We are not aware of a specific scenario. The technologies provided are considered recommended technologies by Appendix VI of 40 CFR 268. Language provided is consistent with the allowances in the rule.

70. Paragraph 3 (immediately following Table D.1): What defines "as appropriate" in this situation? Please redraft to list/define scenarios in which waste will be retreated.

EQD Response: EQD has redrafted this sentence to remove "as appropriate".

A2.D.2

71. Paragraph 1, bullets 1 and 2: Identify/cite these tables and where they are found (bullet 3 provides an excellent example).

EQD Response: The first two bullet points have been revised as follows:

- All hazardous constituents in the waste or in the treatment residue must be at or below the values found in the § 264.40 "Treatment Standards for Hazardous Wastes" 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 § 264.40 "Treatment Standards for Hazardous Wastes" the table ("waste extract standards"); or

A2.D.2(a)

72. Paragraph 1: Insert "as identified in the pre-approval, pre-acceptance or screening processes," between "generation" and "will" in the sentence, "In addition to the waste codes, UHCs reasonably…"

EQD Response: The requested change has been made. Note that "screening processes" are the same as "pre-acceptance".

73. Paragraph 2: This paragraph is inappropriately included here. Please move this paragraph to the appropriate section of the WAP.

EQD Response: The paragraph is included in this section because decontamination is only performed when the previous contents of the tank are listed, and the operation intends to treat characteristic waste destined for Subtitle D disposal. Therefore, this is an appropriate location. Further clarification has been added to make this clear.

A2.D.2(b)

74. Paragraph 1: In the sentence, "This includes waste streams in which generators…" please redraft to define what "this" is referred to in this sentence. As written, the sentence states that all waste received at EQD will be disposed of in a subtitle C landfill even if delisting makes disposal in a subtitle D landfill permissible. If this is the case, please leave as-is.

EQD Response: This language has been revised as follows, "Unless delisting (utilizing procedures detailed in 40 CFR 260.22) 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. Waste streams in which generators have obtained and executed the requirements of their delisting permits can be accepted by EQD and transshipped offsite to a Subtitle D landfill. Solid waste that has been exempted by 40 CFR 261.3(c) and (g) from being a hazardous waste after treatment occurs (i.e. K062 is not applicable when the process waste is treated with lime) may also be transshipped offsite to a Subtitle D landfill providing that LDR restrictions are met."

75. Paragraph 3: Replace "one, two, or three" with "any one or more".

EQD Response: The requested revision has been made.

76. Paragraph 3: Redraft the final sentence, beginning at "then compliance with treatment standards…" to describe which compliance standards are applicable.

EQD Response: Language has been revised to state, "If the waste contains any of these three constituents along with any of the other 25 constituents found in F001-F005, compliance with treatment standards for carbon disulfide, cyclohexanone, and/or methanol are not required."

77. Paragraph 4: Insert the regulatory reference to the specific concentration-based standards cited here.

EQD Response: Language has been revised to state, "Dioxin waste (F020-F023, F026-F028, K043 and K099) are acceptable for treatment at EQD, so long as the dioxin and furan constituents associated with the waste codes do not exceed the concentration-based standards (provided in 40 CFR 268.40) prior to treatment."

78. Paragraph 4: How will EQD verify that the concentration-based standards are NOT being exceeded if they do not perform any dioxin or furan analysis on the incoming waste?

EQD Response: 40 CFR 264.13 requires owners and operators to obtain a detailed chemical and physical analysis of waste to ascertain information that must be known to treat, store or dispose of the waste and allows off-site facilities to use generator-supplied information for that purpose. Verification testing is not a requirement or necessary, as EQD's pre-approval process will obtain information necessary to determine that the waste meets LDRs.

A2.D.2(c)

79. Paragraph 2: Does this re-packaging of "like kind wastes" consist of aggregating "like-kind" wastes from different incoming waste shipments? If so, state such.

EQD Response: Language has been revised to state, "The like-kind wastes from the same or different incoming shipments are then repackaged together."

80. Paragraph 3: Please redraft to add specific criteria for passing or failing the "pour-up compatibility test". If they are the same for the mock tank compatibility test, those criteria may be referenced here by name and WAP section number.

EQD Response: Labpack quantities can be smaller than quantities necessary to perform mock tank compatibility testing.

81. Paragraph 4: Please list (or reference an existing list or table elsewhere in the WAP) of waste types and compatible containers.

EQD Response: Language was changed to, "Pour-ups are combined in containers that are compliant with DOT container compatibility requirements (e.g., acids are poured-up into polyethylene or other appropriate plastic container and not into steel drums)."

A2.D.2(e)

82. Paragraph 3: The pair of sentences, "Hazardous debris that exhibits the characteristics of corrosivity, or reactivity (D003 sulfides and cyanides only) will be treated using one of the extraction, destruction, or immobilization technologies identified in Table 1 of 40 CFR §268.45. EQD treats hazardous debris in accordance with immobilization technologies specified in 40 CFR 268.45," contradict each other. Will EQD be using multiple treatment technologies, as indicated in the first sentence, or immobilization only, as indicated in the second sentence? Redraft to resolve this contradiction.

EQD Response: The applicable regulations at 40 CFR 268.45 specify that multiple treatment methods can be used. EQD only uses immobilization technology which is stated in the second sentence of the paragraph.

83. Paragraph 4: Redraft the clause "… for toxicity characteristic debris and debris contaminated with listed waste," to read "for the toxicity characteristic and for each listed contaminant."

EQD Response: Language has been changed to state, "Hazardous debris will be treated for each contaminant subject to treatment as specified by 40 CFR 268.45(b) for the applicable toxicity characteristic and for each listed contaminant."

A2.D.2(f)

84. Paragraph 1: Replace "its" with "the wastes".

EQD Response: The requested revision has been made.

85. Paragraph 2: Replace “constituent” with “constituents” when referencing PCBs.

EQD Response: The requested revision has been made.

86. Paragraph 2: The final sentence of this paragraph is incomplete. Please redraft.

EQD Response: Language has been revised to state, “In situations where contaminated soil contains both analyzable and non-analyzable organic constituents, treating the analyzable constituents to meet the soil treatment standards is also reasonably expected to provide adequate treatment of the non-analyzable constituents. In situations where contaminated soil contains only non-analyzable constituents, soil will be treated by the method specified for the nonwastewater form of the waste as given in 40 CFR 268.40.”

The preambles to both the final and proposed rules on contaminated soils make clear that EPA intended to allow treatment of analyzable constituents to serve as a surrogate for treating unanalyzable constituents only when the analyzable and unanalyzable constituents.

87. Paragraph 3: Replace “may” with “will” and “must” with “will also.”

EQD Response: The language has been revised as requested.

88. Paragraph 5: While a single grab sample may be adequate in some cases to make pre-treatment decisions, additional samples are recommended in cases of greater waste volume or variable wastes to design the most effective treatment process(es). Single grab samples are not appropriate to determine if post-treatment wastes meet land disposal restrictions and a statistically based sampling strategy, designed to determine if the treated waste meets the treatment standard(s) with a 95% level of confidence, must be utilized.

EQD Response: EQD has proposed to collect a single representative sample prior to treatment and after treatment to demonstrate the soil is less than or equal to 1/10th of the concentration in the sample of untreated soil. The language has been revised as follows for clarity, “EQD collects a single grab sample from an aggregated waste treatment tank that is well mixed to distribute the constituents subject to treatment (utilizing the same tank sampling procedures identified in A2.D.3) to obtain a representative initial concentration of the waste.”

A2.D.2(g)

89. Paragraph 2: Replace “does not” with “will not.”

EQD Response: Revisions have been made as requested.

90. Paragraph 2: Redraft the final sentence of the paragraph so that it states that it is the waste that is being treated to the applicable standards and not (as it currently reads) the standards are treated to the applicable standards.

EQD Response: Language has been revised as follows, “When listed waste is combined with characteristically hazardous waste, the waste will be treated to the treatment standards applicable to the listed waste as well as the standards applicable to the characteristic waste (including the UHCs).”

A2.D.3

91. Paragraph 3: As previously discussed, with both EQD and EPA, a single grab sample is not adequate to be considered representative of the population of treated waste in all but the smallest treatment batches. A statistically based sampling strategy or set of strategies, sufficient to result in the collection of a sample (Incremental Sampling Methodology) or samples sufficient to characterize the true mean of the population of treated waste with a 95% level of confidence must be proposed, approved, and implemented.

EQD Response: EQD recognizes that it is obligated to comply with the LDRs in Part 268. In fact, sampling of its treated waste since 2015 [at its Michigan treatment facilities] has repeatedly demonstrated compliance, a consistent compliance record significantly higher than the compliance rate identified on page 2 of the April 2022 EPA guidance. This obligation is independent of the WAP – EQD can remain compliant with its WAP but still violate LDRs if a sample of the treated waste violates the applicable LDR standards. See 55 Fed. Reg. 22520 at 22539 (June 1, 1990).

The purpose of post-treatment sampling is to verify treatment performance, not to provide statistical certainty that the treated waste meets LDRs. The LDR standards are intended to establish "a treatment standard that should be achievable 99 percent of the time by a well-designed, well-operated system." The permit will contain innumerable provisions requiring that the treatment process at EQD remain an appropriately designed and operated system. The post-treatment sampling is a final, but by no means only check of the treatment performance.

Neither the federal regulations nor the state regulations specify the number of post-treatment samples. Altering those regulations to require a specific number of samples or a sampling program that provides a specific level of statistical certainty when those same regulations have not been previously interpreted in that manner and without evidence that the post-treatment waste fails to meet LDR standards is both arbitrary and capricious.

EQD has repeatedly stated it performs a robust, well designed mixing procedure on all waste batches, as described in detail in Attachment C4 Treatment. This robust mixing procedure ensures that waste and treatment reagents are uniformly distributed throughout each batch. Although the individual waste streams in some batches may start out as variable, the ultimate treatment residue is uniform.

The fact that a robust, well designed mixing procedure achieves a uniform treatment residue, and that a uniform treatment residue is adequately represented by a single grab sample has been demonstrated. For example, in 2018 EPA collected multiple grab samples from a treated batch of waste at EQD. The concentrations in all grab samples were uniform and met applicable LDRs. Proprietary mixing information is provided in Attachment C4 Treatment.

92. Paragraph 4: Why is this discussion of mixing inserted here? Please limit the discussion in this section to the collection and analysis of samples for the purpose of verifying that treatment has achieved LDRs or other applicable disposal standards

EQD Response: EQD included the discussion on mixing because it is a critical part of a well-designed and well-operated system. Thorough mixing is important to ensure a representative grab sample is collected. The mixing increases the representativeness of the grab sample.

93. Paragraph 5: Define when "cure samples" will be collected.

EQD Response: Cure samples have been defined as, "samples collected after additional cure time is allowed." Cure times may be less than two hours because treatment efficacy improves with more cure time. As noted in the WAP, the cure time will be approximately one to two hours. If a sample meets LDRs with less cure time, the waste can be land disposed.

94. Paragraph 5: What does "placed into testing" mean? Analyzed? Please redraft for clarity.

EQD Response: Language has been revised to states, "Cure samples are analyzed for constituents of concern that were subject to treatment."

95. Paragraph 6: Remove "as practicable" at the start of the paragraph. State that sampling techniques will adhere to 40 CFR §261, Appendix I and SW-846 except in the cases of specific exceptions. List those exceptions and why they are necessary.

EQD Response: The paragraph was removed as details on how samples are collected was already provided. All sampling will be consistent with all provisions of the WAP.

96. Paragraph 7: Insert “will be,” between “The excavator bucket” and “decontaminated to…”

EQD Response: Requested revisions have been made.

97. Paragraph 8: Insert and define "immediately" after "performed".

EQD Response: Language has been added to state, “Table A.2 provides preservation methods for samples not analyzed within timeframes specified in the table.”

98. Paragraph 9: How will the proposed check samples be identified and recorded so to ensure that they will not be submitted/used for compliance purposes?

EQD Response: The following language has been added, “Samples and data are labeled in a manner to identify them as check samples.”

99. Paragraph 10: Are "treatment residues" and 'treatment batch residues" the same thing or different things? If the same thing, use only one term for consistency, if the latter, define each term.

EQD Response: This language has been revised.

100. Paragraph 11: Please define "tank failure concentration."

EQD Response: Language has been revised to state, “The decision to retest or retreat is determined through experience with the waste and treatment process, the amount of time the waste has cured, and the concentration of the failing constituent.”

A2.E.1

101. Paragraph 1: Replace "the generator has" with "EQD will".

EQD Response: We have revised A2.E.1 to clarify responsibilities with respect to free liquids. The generator is responsible for certifying that the waste does not contain free liquids, but EQD performs an inspection for the presence of free liquids and may conduct further sampling if free liquids are identified via the visual inspection.

102. Paragraph 1: Replace “may” with “will” in the statement: “… appears to contain free liquids may be analyzed…”.

EQD Response: If there is visual evidence of free liquids, a sample of the waste may not require testing if the waste is handled as containing free liquids. As a result, EQD has not made the requested change.

A2.E.2

103. Paragraph 1: Which "facility" is meant here? EQD, the receiving facility, or the facility that originally generated the waste. Please clarify.

EQD Response: Clarification has been added.

A2.E.3

104. Paragraph 2: Please identify which “facility” is being referred to in this context

EQD Response: Clarification has been added.

A2.E.4

105. Paragraph 1: Please identify which "facility" is being referred to in this context.

EQD Response: Clarification has been added.

106. Paragraph 2: Please revise the statement "… originally received material no longer exists and therefore does not qualify as land application," for clarity.

EQD Response: This has been revised to state, "Materials from off-site sources that are beneficially reused by EQD for waste treatment (e.g., kiln dust, sodium hydroxide) alter the physical and/or chemical properties of the original materials such that the originally received material is altered and therefore does not qualify as land application."

A2.F.1

107. Paragraph 1: Replace "to" with "with" in the phrase, "… associated with compliance to LDRs as described in A2.F.6."

EQD Response: Language has been revised as follows, "EQD will retain a copy of all notices, certifications, demonstrations, data, and other documentation associated with LDR compliance as described in A2.F.6."

A2.F.2

108. Paragraph 1: Is the "treatment facility" meant to reference EQD? Please revise for clarity.

EQD Response: Clarification has been added.

109. Paragraph 2: Which "facility" will comply, EQD or the "different treatment or storage facility"?

EQD Response: Clarification has been added.

A2.F.3

110. Paragraph 1: "The operating log is maintained as follows: Maintained in the operating log…" needs to be revised for readability.

EQD Response: "The operating log is maintained as follows:" has been revised to state "The operating log is maintained…"

111. Paragraph 1, bulleted list: This is a list of documentation that is maintained in the operating log, not a description of how the operating log is maintained. Redraft the preceding paragraph to state such.

EQD Response: Language has been revised to state, "The operating log is maintained in hard copy or electronic format for three years with the following information (unless otherwise specified)"

112. Paragraph 1, "Monitoring…" bullet: Does this mean ALL monitoring, testing, or analytical data or just those data associated with corrective actions?

EQD Response: Language has been changed to "Any corrective action information (monitoring, testing or analytical data) required because of a release."

113. "Items kept in a hard copy…" statement and bullets: Are these items kept someplace other than the operating log? If yes, describe where they will be kept and maintained. If no, include them in the list immediately above.

EQD Response: Changed language to state, "Items kept in the operating log are in hard copy or electronic format until the closure of EQD include:"

A2.F.4

114. Paragraph 1: Replace each instance of "facility" with EQD.

EQD Response: This change has been made.

115. Paragraph 2 and bulleted list: The regulatory language itself is not a suitable description of what, specifically, EQD will do to meet these requirements and document that they are met. How, specifically, will EQD ensure compliance with these regulations for any waste accepted?

EQD Response: The bulleted list has been replaced with the language below:

As Subject to 40 CFR 262, Subpart H, EQD will submit the following notices:

- To confirm receipt of a hazardous waste import, EQD will mail and/or electronically send a copy of the movement document bearing all required signatures within 3 working days. A copy will be sent to the foreign exporter and when applicable, to the competent authorities in the countries of export and transit. Once the electronic import-export reporting compliance date is in effect, EQD will electronically send a copy of the movement document to EPA through WIETS or its successor system.

- When acting as importer, EQD will submit a notification to import when the hazardous waste does not require a notification to export by the competent authority in which it is located. The notification to import will be submitted prior to the export using the allowable methods listed in 40 CFR 262.84(b)(1). Hazardous waste from foreign sources will not be issued an approval without acknowledgment of consent from EPA for the notification submitted.

Appendix D, Sampling of Containers

116. Paragraph 1: Redraft the first sentence for clarity; while true, state the devices that are used to sample waste at EQD. Reference Table A.1.

EQD Response: Complete.

117. Paragraph 1: Remove the occurrences of "reasonably" and "reasonable."

EQD Response: Complete.

118. Paragraph 1: Reference Table A.2 at the conclusion of this paragraph.

EQD Response: Complete.

Appendix D, Sampling of Bulk Material

119. Paragraph 1: Insert "contained in" between "The bulk solids are large" and "containers such as roll-off boxes…"

EQD Response: Complete.

120. Paragraph 1: Remove the occurrences of "reasonably" and "reasonable."

EQD Response: Complete.

121. Paragraph 2: Replace "in" in the statement "The elevation in which bulk samples…" with "at."

EQD Response: Complete.

122. Paragraph 3: What does “as much” refer to in this context? Please redraft for clarity.

EQD Response: Complete.

123. Paragraph 4: What, specifically, does EQD propose to do to ensure that this waste is consistent with the pre-approval characterization?

EQD Response: This information is included in the A2.B Pre-Acceptance section of the Waste Analysis Plan (WAP).

Appendix D, Sampling Equipment Use

124. There are two identical “Auger” paragraphs, please remove one.

EQD Response: Complete.

125. “Trier” paragraph: The first sentence needs to be redrafted for clarity. Perhaps “A trier is used to sample waste with a fine-grained consistency, such as soil or similar waste.”

EQD Response: Complete.

126. “Scoop” paragraph: Insert the word "samples" between "near surface…" and "and…".

EQD Response: Complete.

Appendix D, Internal Analytical Procedures

127. “pH screen” paragraph: Insert “of known pH” after “…to acidic, neutral, or caustic liquids.”

EQD Response: Complete.

128. “Cyanide screen” paragraph: Replace “in” the sentence, “All reagents are as prepared in SW846 9014,” with “as per.”

EQD Response: Complete.

129. “Cyanide screen” paragraph: How will a waste that screens positive be handled?

EQD Response: Characterization, pre-acceptance, and discrepant waste procedures will be practiced as set forth in the WAP. See Table C.2 for Incompatibility Determination. See Table B.2 for Pre-Acceptance Analysis Procedures.

130. “Sulfide screen” paragraph: How are results to be interpreted and how will the waste be handled based on those results?

EQD Response: The results are compared to a control lead acetate paper from testing a 10ppm standard of sulfide. Characterization, pre-acceptance, and discrepant waste procedures will be practiced as set forth in the WAP. See Table C.2 for Incompatibility Determination.

131. “Reactivity with Water,” “Reactivity with Stabilization or Solidification Reagent,” “Reactivity with Bleach,” “Reactivity with Caustic,” and “Reactivity with Acid,” paragraphs: What constitutes a reaction for the purposes of requiring the management of the waste as reactive?

EQD Response: These are the level 2 reactivity assessment procedures for compatibility. Section A2.C.2(b) defines adverse reactions as unexpected and uncontrollable gas evolution, heat, or consistency.

Table A.2

132. "Volatiles, Aqueous samples with no residual chlorine present" row, "Preservation" column: Preserve with HCl to pH <2".

EQD Response: According to SW-846 Chapter 4, unpreserved samples have a hold time of 7 days, which is the hold time given in the Table A.2. Preservation with acid is not performed in order to prevent the potential interference with analytes of interest.

133. Footnote, page 3: EQD must specify the "laboratory data objectives" that need to be met for a smaller sample size to be considered adequate.

EQD Response: This has been revised for clarity to the following: "In some instances, smaller sample sizes may be used if the material quantity meets the requirements of analytical methods to be performed."

Table A.3

134. "Odor (Incidental)" row, "Analytical Method" column: Some wastes are not proposed for analytical/laboratory analysis. How and when will odors be identified in those situations.

EQD Response: To prevent nuisance odors, waste received for on-site treatment is further evaluated for odor based on quantity received and potential to emit odor.

135. "Reactivity-water" row, "Analytica Method" column: How are the results assessed (what constitutes a reaction)?

EQD Response: Adverse reactions (as defined in A2.C.2(b) - unexpected and uncontrollable gas evolution, heat, or consistency) are assessed to evaluate compatibility or conformity of the material, and reactions as defined in 40 CFR 261.23(2)-(4) are screened to verify reactivity characterization provided by the generator.

136. "Cyanide Screening" row, "Analytica Method" column: If a violet color results from the addition of reagents, the waste must be treated as cyanide containing waste until and unless laboratory analyses demonstrate it is not.

EQD Response: As stated in the table, "The detection when not expected or a dark color change will trigger an investigation of the waste."

Table B.2

137. "Alternative methods…" footnote(?) at top of chart: The alternative methods must be listed in the "Analytical Method" column.

EQD Response: This language addresses situations in which the usual analytical method is unavailable because, for example, instrumentation is out of service. In that situation, EQD may need to use alternative laboratory facilities that may use different analytical methods. Because all the alternative methods cannot be predicted, they cannot be listed.

EPA Guidance clearly recognizes that analytical methods can vary significantly depending on circumstances but, "[a]s long as a method can be demonstrated to achieve the needed sensitivity and accuracy for the target analytes in the matrix in question, then that method should be considered as a viable analytical option." *The Relationship between SW-846, PVMS, and Innovative Analytical Technologies*, EPA 542-R-01-015, October 2021 at page 3. We note, however, that method-defined parameters identified in 40 CFR 268.40 will not utilize any alternative methods and that any alternative methods used and an explanation of why the alternative method is appropriate will be noted in laboratory records.

138. "Odor (Incidental)" row, "Analytical Method" column: There must be a procedure/SOP by which odor is assessed and the assessment documented. Please cite and attach.

EQD Response: EQD internal SOPs are intended to be explanatory and flexible business tools that provide direction and guidance to EQD staff regarding the implementation of the WAP, laws, rules, and license conditions applicable to the operation of EQD's facility. Procedures contained within a SOP may be discontinued, revised, or replaced by EQD to improve facility operations, to increase the safety of EQD staff, or for any other reason, so long as the procedures EQD employs results in compliance with the license, the approved WAP, and other applicable regulatory requirements. For these reasons, EQD is unable to provide copies of the SOPs as part of the License Renewal Application.

139. "pH screen" row, "Discrepancy" column: EGLE and the U.S. EPA have previously requested that a difference of plus or minus 2 standard pH units for the pre-approval waste profile be treated as a discrepancy. Please make this revision.

EQD Response: Table B-2 provides that a discrepancy will be identified when the pH falls below the corrosivity limit (i.e. is less than 2), above the corrosivity limit (i.e. pH above 12.5), or is inconsistent with the pH range provided during preapproval. These discrepancy parameters allow EQD to identify when pH is dangerously high, dangerously low, or outside the normal pH range in a way that is more precise than plus or minus two pH units and consistent with the use of pH ranges during the preapproval process.

140. "Free Liquids" row, "Frequency" column: Please revise to include a verification and documentation of verification over time.

EQD Response: EQD has updated the table to require that free liquids be sampled using a paint filter test to check for free liquids the first time the waste stream is sampled and then subsequently when deemed necessary by visual consistency. If a material tests as a free liquid, subsequent shipments will be assumed to be a free liquid unless the visual consistency changes. If a material does not test as a free liquid, subsequent shipments will be assumed not to be a free liquid unless the visual consistency changes.

141. "pH Liquid" row, "Discrepancy" column: As per pH for solid wastes, a difference of plus or minus 2 standard pH units from the pre-approval waste profile will be considered a discrepancy. Please revise to indicate this.

EQD Response: Please see EQD Response 139 above.

142. "Frequency" column, beginning at the "Cyanide" row: All entries in this column for the remainder of the table are not a "frequency" as indicated in the column header. These entries state the general type of analysis that will be done. Please revise this column to list the frequency at which the waste will be analyzed.

EQD Response: The referenced entries have been revised for clarity to state: "waste streams requiring confirmatory analysis*" with the qualifying statement provided as such: "*Confirmatory analysis is performed to verify information provided by the generator or their representative if the generator cannot support their assessment of the waste through knowledge or analysis, therefore frequency varies."

Table C.2

143. "Alternative methods…" footnote(?) at top of chart: The alternative methods must be listed in the "Analytical Method" column, and a citation (or SOP, if it is a proprietary method) provided.

EQD Response: In regard to alternative methods, this language addresses situations in which the usual analytical method is unavailable because, for example, instrumentation is out of service. In that situation, EQD may need to use alternative laboratory facilities that may use different analytical methods. Because all the alternative methods cannot be predicted, they cannot be listed.

EPA Guidance clearly recognizes that analytical methods can vary significantly depending on circumstances but, "[a]s long as a method can be demonstrated to achieve the needed sensitivity and accuracy for the target analytes in the matrix in question, then that method should be considered as a viable analytical option." *The Relationship between SW-846, PVMS, and Innovative Analytical Technologies*, EPA 542-R-01-015, October 2021 at page 3. We note, however, that method-defined parameters identified in 40 CFR 268.40 will not utilize any alternative methods and that any alternative methods used and an explanation of why the alternative method is appropriate will be noted in laboratory records.

This information is contained in a SOP. EQD internal SOPs are intended to be explanatory and flexible business tools that provide direction and guidance to EQD staff regarding the implementation of the WAP, laws, rules, and license conditions applicable to the operation of EQD's facility. Procedures contained within a SOP may be discontinued, revised, or replaced by EQD to improve facility operations, to increase the safety of EQD staff, or for any other reason, so long as the procedures EQD employs results in compliance with the license, the approved WAP, and other applicable regulatory requirements. For these reasons, EQD is unable to provide copies of the SOPs as part of the License Renewal Application.

144. "Frequencies…" footnote(?) at top of chart: Please revise to state something like the following: "This analysis will be completed at a frequency of X times per (/load/batch/container, etc.) unless exempted per the provisions of A.2.B.1(d)".

EQD Response: Revised the footnote to read, "Sampling frequencies will be completed as specified in A2.B.1(b) unless exempted by A2.B.1(d)."

145. "Frequency" column: "Each incoming waste stream sampled for analysis" is not a frequency. Please redraft so that it is clear how often a waste stream will be subject to the analysis listed under the "Method" column in the same row of this Table.

EQD Response: Revised the footnote to read, "Sampling frequencies will be completed as specified in A2.B.1(b) unless exempted by A2.B.1(d)."

Level 1: All incoming waste streams

Level 2: All incoming waste streams unless excluded by A2.B.1(d).

Attachment 3 Clarifications

146. The U.S. EPA response to comment 50, page 6: EGLE confirms this comment has been addressed.

EQD Response: No response required.

147. The U.S. EPA response to comment 144, page 15: EGLE confirms this comment has been addressed.

EQD Response: No response required.

148. The U.S. EPA response to comment 148, page 16. The wastewater rows were indeed removed from Table D.2, but it does not clarify or answer the comment unless EQD is no longer treating or disposing of wastewater. See the U.S. EPA's response to comment 149 – 152 for further clarification/comment on Table D.2's content.

EQD Response: Per 53 FR 31209, 55 FR 22537, and 64 FR25411, the applicable LDR treatment standards of waste are based on the form of the waste being placed on the land. Incoming wastes that are considered wastewater at the point of generation and are then treated on-site to a nonwastewater residue must meet the applicable nonwastewater LDR treatment standard for land disposal. Since all the waste treated by EQD is considered a nonwastewater at the time of land disposal, the LDR standards for wastewater do not apply.

149. The U.S. EPA response to comment 152, page 16: The requested SOPs were not provided; the analytical method has been merely listed in the table (with many simply listed as "NA"). This comment remains unaddressed.

EQD Response: 40 CFR 264.13 requires owners and operators to "describe procedures" that will be carried to obtain a detailed chemical and physical analysis of the waste. It does not require the inclusion of standard operating procedures. EQD has included reference to the SW-846 and/or ASTM methods that are used to analyze waste. Additionally, Appendix D was created to provide EGLE with sampling and internal analytical procedures that could not be described with a reference to a standardized test method.

U.S. EPA - MEMORANDUM

SUBJECT: Review of October 29, 2021, Response to Comments (RTCs) on the US Ecology Detroit South's (EQD) RCRA Waste Analysis Plan (WAP), EPA ID: MID980991566

Overall Comments

1a. Specifying the methods that will be used to meet the waste analysis requirements for the Land Disposal Restriction (LDR) program given in the Code of Federal Regulations, Title 40 (40 CFR) 268.7, as required by R 299.9605(1), and 40 CFR 264.13(b)(6). These methods include the required elements described in 40 CFR 264.13(b)(1-5); the WAP must specify the parameters and rationale for analysis, the test methods, sampling methods, and frequency for each hazardous waste.

EQD Response: The information is included in A2.D and A2.E.

EPA Comment: This information is not included in A2.D and A2.E. However, Table D.2 has general sampling methods and SW-846 analytical methods. It does not appear to have laboratory SOPs. Appendix D has descriptions of sampling methods. The final WAP has a placeholder for Table D.2 describing Table D.2 as having 141 pages while the actual .pdf of Table D.2 has only 54 pages. Please confirm why the .pdf version is only 54 pages.

2022 EQD Response: The page numbers are now updated and correct. The reference to Table D-2 as having 141 pages reflected a previous version that included waste streams that have since been deleted because they are not handled at the facility.

In accordance with the requirements of 40 CFR 268.7(b), treatment facilities must test their wastes according to the frequency specified in their waste analysis plans as required by 40 CFR 264.13. Section A.2.D.3 states "A single random grab sample of treatment residue will be sampled from every treatment tank that requires verification that the waste meets the applicable LDR numeric concentrations prior to land disposal. Each grab sample will be collected from a random vertical and horizontal location using an excavator to reach the selected sampling point and collecting the sample from the excavator bucket. The sample is then analyzed for constituents of concern that were subject to treatment. Table D.3 outlines the test methods that will be utilized to verify LDR compliance." The language explains the sampling method (single random grab collected from a random vertical and horizontal location using an excavator to reach the selected sampling point and collecting a sample from the excavator bucket) and frequency of sampling (sampled from every treatment tank that requires verification that waste meets the applicable LDR numeric concentration).

A2.D.3 of the WAP specifies when EQD must test their waste and is consistent with requirements in 40 CFR 268.7(b)(1) and (2) which states:

(1) For wastes or contaminated soil with treatment standards expressed in the waste extract (TCLP), the owner or operator of the treatment facility must test an extract of the treatment residues, using test method 1311 (the Toxicity Characteristic Leaching Procedure, described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 as incorporated by reference in § 260.11 of this chapter) to assure that the treatment residues extract meet the applicable treatment standards.

(2) For wastes or contaminated soil with treatment standards expressed as concentrations in the waste, the owner or operator of the treatment facility must test the treatment residues (not an extract of such residues) to assure that they meet the applicable treatment standards.

Table D.2 reiterates the sampling method and frequency of sampling, and also provides the rationale for the parameters tested and the analytical method that will be used in order to demonstrate concentration-based treatment standards applicable to the waste.

The requirements of 40 CFR 264.13(b)(6) are provided as follows:

264.17 - EQD takes precautions to prevent accidental ignition or reactions of ignitable or reactive hazardous waste through preparedness and prevention procedures. Additionally, section A2.C.1(a) and A2.C.2(b) specify procedures utilized to minimize the potential for an adverse reaction which could generate extreme heat, fire, explosion or produce an uncontrolled toxic or flammable mist, fume, dust, or gas in quantities that could threaten human health and the environment.

264.314 - EQD is not a landfill. Section A2.E.1 states "Prior to transporting waste to a landfill, waste is inspected for the presence of free liquids. For waste to be approved into a landfill, the generator has certified that the waste does not contain free liquids. This certification may be relied upon unless there is visual evidence that contradicts this certification. If there is visual evidence of free liquids, a sample of the waste that appears to contain free liquids may be analyzed by the Paint Filter Liquids Test, Method 9095 in "Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods," EPA Publication No. SW-846 in which case the waste may only be landfilled as-is if the sample passes the test. Alternatively, in lieu of a test, it may be conservatively assumed to fail a Paint Filter Liquids Test in which case the waste may not be landfilled as-is."

264.1034(d) - EQD does not have any process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations

264.1063(d) - EQD does not have any equipment subject to Subpart BB requirements

264.1083 - As allowed by 40 CFR 264.1083 and specified in A2.A.2 EQD uses knowledge of the waste provided by generator's pre-approval information to determine whether a waste is exempt from Subpart CC control requirements.

264.7 - See information provided above.

1b. Providing the information that must be included in the WAP in order to perform analyses that may be needed at EQD, as described in 40 CFR 264.13(b) and (c), including:

1b(i). The parameters for which each hazardous waste, or non-hazardous waste if applicable under 40 CFR 264.13(d) will be analyzed, and the rationale for the selection of these parameters (i.e., how analysis of these parameters will provide sufficient information of the waste's properties as specified).

1b(ii). The test methods that will be used to test/analyze these parameters.

1b(iii). The sampling method that will be used to obtain a representative sample of the waste to be analyzed. A representative sample may be obtained using either:

1b(iii)1. Appropriate sampling methods in Appendix I of Part 261 for the waste. 1b(iii)2. An equivalent sampling method.

EPA Comment: The sampling methods in Table D.2 state the type of equipment to be used and state in several instances that the sample will be a "single random grab per tank." WAP doesn't describe how a representative sample will be taken. Table D.2 should state the specific sampling method/SOP to be used and not the sampling equipment. If sampling methods are in Appendix D, then the table should reference the SOP with the sampling method to be followed. Further, we disagree that a single random grab per tank would be representative in most instances.

When treating toxicity characteristic (TC) wastes, EQD is required to meet LDR UTS for each waste. EQD may also wish to decharacterize such TC wastes which can allow for disposal in a subtitle D landfill. These two objectives are not interchangeable. The sampling and analytical methods both differ as characterization

is based on representative sampling and the TCLP method while LDR verification is based on grab samples (in consideration of variability). The target LDR concentrations may be a different TCLP concentration than for characterization or a concentration from a totals analysis. The WAP, sections A2.A and A2.D, and Tables A.3 and D.2 must clearly specify the parameters, rationale, sampling and analytical methods, and sampling frequency for each waste for each sampling objective.

An example is waste D030, toxicity characteristic for 2,4-dinitrotoluene, at a concentration of 0.13 mg/L TCLP. To decharacterize D030, the TCLP concentration of a representative sample must be below 0.13 mg/L. The LDR UTS for D030 is 140 mg/kg total 2,4-dinitrotoluene. Meeting the LDR UTS of less than 140 mg/kg total 2,4-dinitrotoluene cannot be interpreted as also decharacterizing D030 as the maximum possible TCLP concentration at 140 mg/kg total is 7.0 mg/L, over 50 times higher than the TCLP concentration needed to decharactarize. Furthermore, sampling for characterization is based on representative techniques while LDR verification should be based on grab samples (in consideration of the waste variability). An example of a WAP table entry containing specifics for the two different D030 analysis objectives with recommended revisions is shown with bold underlined text in the table below.

Waste Code (prior to treatment)	Waste form as generated (LDR Non-wastewater)	Parameter	CAS#	Rationale	Treatment Standard	Sampling Method	Analytical Method	Frequency
D030	LDR-nonwastewater	2,4-dinitrotoluene	121-14-2	Determine if waste or residual meets LDR treatment standard	140 mg/kg total	Treatment Tanks –scoop, trowel, or trier. X random grabs per tank	SW-846 3550, 8270	Every tank when waste code has been identified as applicable and property/constituent is subject to treatment
	LDR-nonwastewater	2,4-dinitrotoluene	121-14-2	Determine if waste or residual is toxicity characteristic with representative sampling	0.13 mg/L TCLP	Treatment Tanks –scoop, trowel, or trier. 1 Y-aliquot composite per tank, or X random grabs per tank	SW-846 1311 and then sample preparation following methods in 3500c, 8270	Every tank when waste code has been identified as applicable and property/constituent is subject to treatment

The WAP must clearly differentiate the parameters, rationale, sampling and analytical methods and sample frequency for each objective (characterization vs LDR verification, etc.) for each waste. Other examples where nonwastewater concentrations for decharacterization and LDR verification are not interchangeable include D010 – selenium, D032 – hexachlorobenzene, and D043 - vinyl chloride. While totals analysis divided by 20 (TCLP method totals-in-lieu) may allow for totals demonstrations for decharacterization for other TC wastes, the sampling objectives are not the same and must be addressed.

2022 EQD Response: Section A.2.D.3: "A single random sample of treatment residue will be sampled from every treatment tank that requires verification that the waste meets the applicable LDR numeric concentrations prior to land disposal off site. Each grab sample will be collected from a random vertical and horizontal location using an excavator to reach the selected sampling point and collecting the sample from the excavator bucket with a disposable scoop or cup. The sample is then analyzed for constituents of concern that were subject to treatment. See Table D.2 for details."

The top of Table D.2 states "Table reflects concentrations and/or technologies that must be met prior to land disposal in a subtitle C landfill. For subtitle D landfill disposal, characteristic waste is decharacterized

according to the definitions and limits set forth in Subpart C of 40 CFR 261. See A2.D.2(a) for details." EQD has defined a waste as decharacterized when a contaminant is treated to less than maximum concentration of the toxicity characteristic identified in 40 CFR 261.24. These limits do not need to be specified in the table as the table identifies the applicable citation that provides them.

1b(iv). The minimum frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate, up to date, and representative of the waste over time.

EPA Comment: Table D.2 specifies most sampling frequencies. For some characteristic and listed waste codes, "NA" is listed for sampling method, analytical method, and frequency. Please explain what is meant by the "NA."

Most of the waste codes specify the following for frequency in Table D.2: "Every tank when waste code has been identified as applicable and property/constituent is subject to treatment." Please explain how a hazardous waste code needs to be "identified as applicable" when it already appears in the row of a hazardous waste code in Table D.2.

EQD Response: Table D.2 has been revised to include bullet points defining the meaning of NA. Tank batches are subject to treatment according to the property or constituent that does not meet land disposal restrictions in the waste streams contained therein. The frequency described in Table D.2 refers to the specific batch being treated in a tank. 40 CFR 264.13(b) and (c) require facilities to describe the procedures which will be used to obtain a chemical and physical waste analysis of the waste to obtain information which must be known to treat, store, or dispose of the waste in accordance with this part and part 268 of this chapter.

Section A2.A details the facilities robust pre-approval process that includes obtaining detailed information from the generator which is required by 40 CFR 261.2 to make an accurate determination as to whether its waste is a hazardous waste to ensure wastes are properly managed according to applicable RCRA regulations and includes the frequency the initial analysis is reviewed and repeated. The section also details the process by which EQD reviews the information to make an approval determination.

A2.B describes procedures utilized to inspect and if necessary, sample and analyze the waste to confirm consistency with the pre-approval information including the frequency of inspection, sampling, and analysis and the methods in which the waste is sampled and analyzed. Table B.2 includes test methods utilized and the rationale and the frequency of testing.

A2.C describes precautions taken to prevent accidental ignition or reaction of ignitable or reactive waste.

A2.D provides a detailed description on land disposal restriction requirements found in 40 CFR 268.40.

EPA Comment: See EPA's responses above.

2022 EQD Response: EQD has no additional information to add.

A2.A.1(a) Acceptable Waste Type Description

9. Paragraph 2: The word "decharacterized" should be replaced with "treated to remove the hazardous characteristic(s)." This section must specifically mention underlying hazardous constituents (UHC).

EQD Response: This change was made; however, this is not a technical deficiency.

EPA Comment: Complete.

2022 EQD Response: No response required.

10. Paragraph 3: Please clarify that for any waste stream for which a delisting determination is desired, prior authorization is required for the specific waste stream and/or treatment process, and that the procedures detailed in 40 CFR 260.22 must be followed. Additionally, please note that LDRs may have attached to wastes subsequently delisted via treatment. If the treatment that results in delisting occurs after the waste was generated, the treatment residue must still meet LDR standards even though it is no longer hazardous.

EQD Response: Clarification has been added. In general, the generator applies for a delisting as defined in 40 CFR 260.22. If the generator is approved for a specific delisting, then this delisting applies at EQD as well. Furthermore, the use of 40 CFR 260.22 is not always a requirement.

EPA Comment: EQD response above is confusing. Please clarify response.

2022 EQD Response: Added a sentence stating, "The delisting must be obtained from the generator prior to generating and shipping the waste to EQD. If the generator has not obtained a delisting for a waste stream the waste stream cannot be shipped to EQD under a delisting." EQD acknowledges that LDRs are applicable to K062 waste delisted at the facility following treatment and notes that this K062 waste is tested following treatment to confirm it meets LDRs.

11. Paragraph 5: Provide specifics describing debris. This should be explained, and reference provided to other parts of the WAP addressing debris.

EQD Response: Clarification has been added. Debris can be treated with any technology listed in Table 1 of 40 CFR 268.45. The facility treatment technologies are limited to immobilization, but this does not preclude the facility from accepting waste treated by other technologies identified in the table.

EPA Comment: EQD does not describe specific debris but leaves it general to allow any debris that can be treated at their facility using immobilization. Provide specifics.

2022 EQD Response: Section A2.D.2(e) provides a detailed description on the contaminated debris that can be treated at EQD. As stated in this section, "There are no contaminant restrictions for the immobilization technologies nor are there limitations on the type of debris that may be treated by the immobilization technologies." Therefore, any waste that satisfies the definition of debris in 40 CFR 268.2 can be managed. As a result, it is not necessary to specify debris types.

22. Under "LDR", please revise to require generators to explicitly identify all UHCs present or reasonably expected to be present in the waste stream.

EQD Response: This has been addressed.

EPA Comment: Complete.

2022 EQD Response: No response required.

A2.A.3(a)–On-Site Generated Waste

29. How will variability be determined and documented? Also, when highly variable waste streams are identified, please specify that their evaluations "will" be more frequent, not that they "may" be more frequent. How will these frequencies be determined?

EQD Response: The language used for this section has been changed.

EPA Comment: EQD's definition of variability is essentially the concept of "similar wastes" as it pertains to LDR impermissible dilution and waste aggregation. First, large differences in concentrations of the waste constituents could certainly impact treatment performance and would not be identified by EQD's approach. Second, the approach assumes that wastes with the same waste code and constituents are automatically "consistent" across other generators or sources. Under EQD's proposed approach, for example, a contaminated clayey soil could be deemed "consistent" with an oily filter cake that has the same waste code and contaminant potentially resulting in ineffective treatment. Assessing variability includes identifying waste constituents, constituent concentrations, waste matrix, and other parameters that may be critical to successful treatment such as pH, redox potential, and oil & grease content, among others. The WAP should describe real criterion for variability such as the examples given here.

2022 EQD Response: The WAP describes procedures utilized to obtain a detailed chemical and physical analysis of waste. EQD has identified how variability will be assessed to ensure waste is properly characterized, which includes identifying waste restricted from land disposal. This is appropriate for a section that discusses how on-site generated waste is evaluated. Ineffective treatment will be determined through testing and retreatment will be performed as needed. Each batch with constituents subject to treatment is analyzed to confirm LDRs are met. LDRs are met prior to disposal.

A2.A.4 – Pre-Approval Land Disposal Restrictions (LDR) Evaluation

46. This section implies that deviations from SW-846 will not occur, in contrast to previous sections and the referenced Table A.3. Please clarify.

EQD Response: The reference to SW-846 has been removed. Table A.3 references it, in addition to alternative methods.

EPA Comment: Reference to SW-846 is removed. Although this section now refers to Table D.2 and not Table A.3 as stated in EQD response. This is not an adequate response.

2022 EQD Response: Testing methods and treatment standards for LDR evaluation are identified in Table D.2. The SW-846 reference is unnecessary because applicable SW-846 methods for material analyzed on site are identified in Table D.2.

47. Paragraph 1: The last sentence appears to be missing part of the sentence.

EQD Response: This has been corrected.

EPA Comment: Complete.

2022 EQD Response: No response required.

48. Paragraph 2: While generators are supposed to make UHC determinations, EQD should actively confirm generators have done so by requiring appropriate documentation under the pre-approval waste characterization requirements (Section A2.A.2).

EQD Response: A2.A.2 states, "EQD 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." Note that 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, including underlying hazardous constituents that are present or reasonably expected to be present in the waste stream and subject to treatment.

EPA Comment: EQD should add the statement from A2.A.4 last paragraph beginning with "In the event the generator notification (required by 268.7(a)(2)) . . . "to the LDR section of the list of required information in section A2.A.2.

EQD should also include testing for all underlying hazardous constituents (any constituent listed in 40 CFR 268.48, Table UTS – Universal Treatment Standards, except fluoride, selenium, sulfides, vanadium, and zinc in such waste) in both the LDR section of the list of required information in section A2.A.2 and in the fourth paragraph of section A2.A.4.

2022 EQD Response: The following language from A2.A.4 has been revised and moved to A2.A.2:

"In the event the generator notification (required by 268.7(a)(2)) states, "The hazardous waste may or may not be subject to the LDR treatment standards. The treatment facility must make the determination", EQD will test the waste according to the specification of this plan and such LDR determination (including identification of UHCs) will be made utilizing the sampling methods specified in A2.B.1.b and the test methods and treatment standards identified in Table D.2."

A2.A.4(a) – Dilution and Aggregation of Wastes

49. Paragraph 1: Please clarify the intent of Sentence 2. Dilution of characteristically hazardous non-wastewaters is not allowed under the LDR regulations, except as incidental from the addition of reagents or from appropriate aggregation. Any impermissible dilution constitutes noncompliance and must be reported as such. Please clarify what is being proposed as standards for "proper treatment" of impermissibly diluted wastes and what is being proposed to be done with the waste afterwards.

EQD Response: The constituents in impermissibly diluted waste that exceeded LDRs prior to dilution will be treated. After treatment, the waste meeting LDRs will be disposed of at an offsite Subtitle D landfill or a Subtitle C Landfill. Therefore, at the time of land disposal the waste will meet land disposal restrictions.

EPA Comment: Please write this section in active voice to clearly indicate who is taking what actions. Please explain what procedures the facility will take when the facility gains knowledge of impermissible dilution by generators, transporters, handlers, or owner or operators of treatment, storage, or disposal facilities. Please add provision that instances of impermissible dilution must be reported to MI-EGLE, not just recorded in the profile record.

2022 EQD Response: EQD's WAP has been updated to read: "A generator or treatment facility may not impermissibly dilute listed wastes and characteristic wastes, if destined for land disposal off site, as a substitute for adequate treatment from the point of generation to the point of land disposal off site. A generator or treatment facility may permissibly dilute if (1) the waste is managed in a Clean Water Act (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. If EQD has knowledge of impermissible dilution, the generator will be asked to characterize the waste according to concentrations prior to dilution. EQD will treat the waste for constituents that exceeded LDRs prior to dilution. EQD will document information

regarding the impermissible dilution in the generator approval file and will include a description of events that occurred and constituents that required treatment." As stated EQD performs proper treatment of waste. EQD is not aware of any regulatory requirements for reporting this information.

50. Please clarify why was the language in the template omitted, regarding prohibition of partial treatment of listed wastes to change treatability category and/or to comply with different treatment standards.

EQD Response: Template language has been added. It should be noted language regarding treatment residue dilution is included in section A2.D2(g).

EPA Comment: The reference to template and specific missing language might be a MI-EGLE-specific comment. MI-EGLE should check this.

2022 EQD Response: No response required.

51. Please clarify the recordkeeping and reporting that will pertain to dilution and aggregation of wastes either from EQD or the generator.

EQD Response: Clarification has been added.

EPA Comment: EQD states "Information will be documented in the generator approval file." The facility's response needs to be detailed. Please see EPA response to #49.

2022 EQD Response: Language has been revised to state, "EQD will document information concerning the impermissible dilution of waste in the generator approval file, including a description of events that occurred and constituents that require treatment."

A2.B.1(b) – Sampling Methods and Frequency

67 through 84:

EPA Comment: EPA agrees with MI-EGLE's comments for this subsection and adds that identifying variability (heterogeneity) in incoming wastestreams is an important factor in justifications for LDR verification sampling strategies. EPA recommends that EQD further clarify their fingerprint sampling objectives to include assessing homogeneity by describing the specific visual differences used in their visual screening.

The end of paragraph 9 seems to allow the sampler to disregard all the sampling requirements at their discretion. This should be removed.

EPA recommends that each sample collected from each incoming shipment of a single approval-number wastestream should be subjected to both Level 1 and Level 2 screening, not just the first shipment or only those that fail the visual assessment. Furthermore, EPA recommends that samples from individual containers for Level 2 analysis not be composited so that important non-visual discrepancies within a shipment be identified. These changes should be in section A2.B.1(c) of the WAP and Table B.2.

2022 EQD Response: Section A2.B.1(b) states, "The feasibility of sampling is determined by the sampler using reasonable judgment considering numerous factors including safety, visual appearance, extent of variability, level of observed contamination on the material, etc. If upon visual inspection, the waste is heterogeneous, as much as practicable, the sample will be composed of each layer or sampled individually and either composited based on estimated proportions or evaluated separately. Alternatively, the sampler

can randomly select samples or select samples from portions of the waste expected to have the highest level of contamination. Samples collected at random are equally capable of demonstrating consistency with pre-approval information."

EQD has considered EPA's recommendations. At this time no changes are being made. EQD is open to understanding any concerns EPA may have regarding the sampling and testing frequency.

A2.D.1 – Treatment for Purposes of Land Disposal

119. Paragraph 1: Remove "as identified by generator." UHCs that are found by EQD that are not added or created by the treatment process but are reasonably expected to have been present at the waste's point of origin still need to be treated to LDR standards regardless of who identified them.

EQD Response: This has been removed.

EPA Comment: EQD's response is incorrect. The language was not removed. This was addressed but not by removing "as identified by generator" as EQD responded. The following sentence was added to the end of Paragraph 1: "UHCs reasonably anticipated to be present at the point of generation that were not identified by the generator but are independently identified by EQD will be managed as a discrepancy as described in A2.B.2 and will be treated to applicable LDR standards." Please replace ". . . reasonably anticipated to be present at the point of generation that were not identified by the generator but . . ." with "not associated with appropriate treatment reagents and . . .".

2022 EQD Response: EQD's language is consistent with the Underlying Hazardous Constituent definition found in 40 CFR 268.2, which states, "Underlying hazardous constituent means any constituent listed in § 268.48, Table UTS - Universal Treatment Standards, except fluoride, selenium, sulfides, vanadium, and zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste at a concentration above the constituent-specific UTS treatment standards." EQD could not find any language in 40 CFR 268 that would require the requested revision. EQD is open to reviewing and revising this language to ensure compliance if a regulatory citation that demonstrates this requirement is provided.

120. Paragraph 1: Please clarify how EQD will track and report UHCs that were missed by the generator but found by EQD. Even if the non-compliance is not submitted to the MMD, there should be a system in place to report back to the generator, so they know what to look for in the future.

EQD Response: Language has been added to address this.

EPA Comment: Add similar language as comment #110.

2022 EQD Response: It is unclear what comment 110 is referring to. The following language is provided in A2.D.1: "UHCs reasonably anticipated to be present at the point of generation that were not identified by the generator but are independently identified by EQD will be managed as a discrepancy as described in A2.B.2 and will be treated to applicable LDR standards." A2.B.2 describes procedures which notify the generator of discrepancies.

121. Paragraph 1: Attachment C4 Treatment is referenced here but was not included as part of the proposed WAP for EQD. Please clarify.

EQD Response: This reference has been removed.

EPA Comment: Complete.

2022 EQD Response: No response required.

122. Paragraph 1: "EQD will test the waste according to the specification of this plan and such testing will be performed by the methods identified in Table A.3". Does this section intend to refer to Table D.2? Please clarify what sampling and analysis will be performed.

EQD Response: No, it does not intend to refer to Table D.2. If we choose to accept a generator LDR statement, then it is puts the LDR determination on the treatment facility and we will sample and analyze the waste like onsite generated waste. This is done utilizing procedures in Table A.2 and A.3.

EPA Comment: In this instance, wherein the generator defers the LDR determination to the treatment facility, EQD proposes to use Table A.3 "Pre-Approval/Waste Characterization Analysis Procedures" to make the LDR (and UHCs if applicable) determinations. Note that EQD is not the generator and cannot be expected to have the depth of knowledge necessary to make the LDR determination based on generator knowledge. Therefore, while EQD must evaluate the incoming waste in accordance with A2.A, A2.B, and A2.C of the WAP, EQD must determine LDRs and UHCs, if applicable, using Table D.2 which includes specifics for LDR parameters, concentrations, test methods for each waste code which Tables A.2 and A.3 do not have. See 40 CFR 268.7(a) and (b).

2022 EQD Response: The language has been clarified to state that EQD will sample as specified in A2.B.1(b) and LDR determination will be made utilizing the test methods and treatment standards identified in Table D.2.

123. Table D.1

a. In the row for "Oxidizer," please separate out oxidizer waste that is non-ignitable and ignitable.

EQD Response: A reference to D001 was added to clarify.

EPA Comment: Adding a reference to D001 for oxidizers did not clarify the WAP. EQD added two additional treatment technologies for D001 oxidizers in Table D.1. However, Appendix VI to 40 CFR Part 268, Recommended Technologies to Achieve Deactivation of Characteristics in Section 268.42, does not recommend Stabilization or Neutralization for D001 oxidizers. Please explain why these technologies for D001 oxidizers were added.

2022 EQD Response: Oxidizers must be treated to remove the hazardous characteristics of a waste due to its ignitability, corrosivity, and/or reactivity. Appendix VI of 40 CFR 268 provides "Recommended Technologies". Other technologies may be used as so long as the technology standard standards in 40 CFR 268.42 are satisfied. Chemical stabilization and neutralization treatment processes rely on redox reactions and as such are capable of deactivating oxidizers.

b. Please clarify when stabilization is not used when treating oxidizer wastes.

EQD Response: Per 9/30 discussion, EPA stated we just needed to state ignitable waste recommended treatment was not intended of oxidizers. EQD does not treat ignitable wastes.

EPA Comment: The response is not clear because it states EQD does not treat ignitable wastes, yet ignitable oxidizers are included in Tables D.1. and D.2. Please clarify exactly how D001 oxidizers will be treated or that they will not be treated.

2022 EQD Response: EQD treats D001 oxidizers defined by 40 CFR 261.21(a)(4) "An oxidizer for the purpose of this subchapter is a substance such as a chlorate, permanganate, inorganic peroxide, or a nitrate, that yields oxygen readily to stimulate the combustion of organic matter. EQD does NOT treat D001 ignitable wastes defined by 40 CFR 261.21(a)(1)-(3).

124. Paragraph 2: Please clarify that any new generation processes occurring during treatment will trigger additional evaluation of UHCs. This would include changes in treatability groups (such as a non-wastewater filter cake derived from a characteristic hazardous wastewater). Additionally, please describe how EQD will detect new hazardous characteristics in treatment residues.

EQD Response: Identification of UHCs in waste is managed as a discrepancy. Reference to A2.B.2 procedures has been provided.

EPA Comment: This was not addressed.

2022 EQD Response: Section A2.D.1 states, "Constituents that do not qualify as UHCs in the original waste but are concentrated 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."

A2.D.2 – Land Disposal Restrictions

125. Bullet 1: "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")". Please note that this requirement is to ensure that hazardous constituents are below these values in all portions of the waste.

EQD Response: This is directly from 40 CFR 268.40(a)(1) and (2).

EPA Comment: Please replace "for that waste" with "for all portions of the waste" at the end of bullet 1 (as described in 63 FR 28567).

2022 EQD Response: EQD recognizes the obligation for all land disposed waste to meet applicable LDRs. The language provided is consistent with the requirements of 40 CFR 268.40(a)(1) and (2).

126. Paragraph 2: The second sentence is incomplete. Please revise to clarify.

EQD Response: Wording added at the end of the sentence.

EPA Comment: Complete.

2022 EQD Response: No response required.

A2.D.2(a) Characteristic Wastes

127. Paragraph 1: "Waste codes" should be replaced with "wastes", in the third sentence.

EQD Response: This is complete.

EPA Comment: Notwithstanding EQD's response, this change was not completed. Please make the requested change.

2022 EQD Response: This has been completed as follows, "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. Wastes codes will be treated to treatment standards identified in 40 CFR 268.40. In addition to the waste

codes, UHCs reasonably anticipated to be present at the point of generation will be treated to universal treatment standards (UTS) found in 40 CFR 268.48."

128. Paragraph 1: Please use consistent, clear language. For example, "appropriate demonstration" here appears to be referring to post-treatment LDR verification sampling and analysis.

EQD Response: This language has been changed.

EPA Comment: Complete.

2022 EQD Response: No response required.

129. Paragraph 1: In the last sentence, please revise to specify that "…all portions of the waste has met applicable LDRs and has been appropriately treated to remove hazardous characteristics…".Additionally, no on-site disposal is allowed at the EQD site.

EQD Response: Reference to 40 CFR 268.40(b) which states, "For all nonwastewaters, compliance with concentration level standards is based on grab sampling. For wastes covered by the waste extract standards, the test Method 1311, the Toxicity Characteristic Leaching Procedure found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in § 260.11, must be used to measure compliance. An exception is made for D004 and D008, for which either of two test methods may be used: Method 1311, or Method 1310B, the Extraction Procedure Toxicity Test. For wastes covered by a technology standard, the wastes may be land disposed after being treated using that specified technology or an equivalent treatment technology approved by the Administrator under the procedures set forth in § 268.42(b)," has been added.

EPA Comment: The first sentence of the comment was not addressed. The second sentence of the comment is addressed by clarifying that disposal is off-site.

2022 EQD Response: The last sentence of paragraph 1 has been revised as requested..

130. Paragraph 1: All testing that is performed to ensure LDR compliance needs to be kept in the operating record.

EQD Response: The recordkeeping requirements are specified in A2.F.3.

EPA Comment: Complete.

2022 EQD Response: No response required.

133. Paragraph 2: Please clarify what is being claimed in this paragraph. All applicable treatment standards must be met for all waste codes associated with a given waste stream.

EQD Response: The language provided is consistent with 40 CFR 268.9(b) requirements. The language does not circumvent applicable treatment standards.

EPA Comment: Please repeat the second paragraph of A2.D.2(a) in A2.D.2(b).

2022 EQD Response: Language has been revised for clarity and added to A2.D.2(b) as follows, “Tanks will be decontaminated following the storage/treatment of listed wastes before characteristic waste destined for Subtitle D disposal are placed in the tank.”

A.2.D.2(e) – Contaminated Debris

136. Paragraphs 3 and 4: Please clarify what treatment technologies are proposed to be utilized for hazardous debris. Paragraph 4 appears to indicate that only immobilization will be used at the site, whereas paragraph 3 also includes extraction and destruction.

EQD Response: The applicable treatment method will be utilized based on the regulatory reference.

EPA Comment: Details of the specific hazardous waste debris technologies employed by EQD should be described with specifications in the Part B application, if not in the WAP. Note that the performance standard in 268.45 also requires that the encapsulating material be resistant to degradation by the debris itself and other materials into which it may come into contact after placement.

2022 EQD Response: Treatment information can be found in Attachment C4 Treatment. This information is proprietary information that is not required to be in the WAP.

A2.D.2(f) – Soil

137. Paragraph 2: Please clarify what is being claimed in the last sentence, regarding PCB treatment.

EQD Response: This language is consistent with 40 CFR 268.48(d) which states, "PCBs are not constituent subject to treatment in any given volume of soil which exhibits the toxicity characteristic solely because of the presence of metals."

EPA Comment: Please address these additional Comments on A2.D.2(f) for added text:

There is new text regarding analyzable and non-analyzable constituents that was not on the previously reviewed WAP version. This new text is unclear and needs to be explained.

Also, there is new text addressing the alternative LDR standards for soils that is inadequate. Please see similar comments to the MDWTP/WDI WAP on the same topic and consult EPA guidance, Guidance on Demonstrating Compliance With the Land Disposal Restrictions (LDR) Alternative Soil Treatment Standards, Final Guidance, OSWER, EPA530-R-02-003, July 2002.

2022 EQD Response: Additional language provided regarding non-analyzable constituent states, “A constituent is non-analyzable when 1) the appropriate §268.40 listing specifies a treatment technology, and 2) there is no concentration-based limit in the §268.48 UTS table.” Language is consistent with EPA’s guidance provided by EPA in the May 11,1999 preamble (64 FR 25410). The preambles to both the final and proposed rules on contaminated soils make clear that EPA intended to allow treatment of analyzable constituents to serve as a surrogate for treating unanalyzable constituents only when the analyzable and unanalyzable constituents are both organics.

EQD is unclear on what text is inadequate. Additional clarification is needed in order to respond.

A2.D.2(g) - Dilution and Aggregation of Wastes

138. If EQD is to treat wastes with different treatment categories in the same batch, please detail how EQD will demonstrate impermissible dilution does not occur. For example, if organic wastes were first treated with oxidization, how will the efficacy of this treatment step be demonstrated prior to the introduction of metalbearing wastes and subsequent stabilization?

EQD Response: EPA rejected a proposal that would have required the quantification of the extent of treatment in the case of aggregated waste streams. 55 Fed. Reg. at 22665-666. EPA recognized that such a requirement would be unreliable and unworkable, stating:

"The Agency's proposal to require reduction of a BDAT constituent as a means of evaluating if impermissible dilution has occurred did not indicate how much reduction would be deemed adequate, and thus without further elaboration not only fails to provide clear guidance but also potentially fails to achieve the objective of assuring that wastes are treated by an appropriate treatment method. More importantly, quantifying the extent of removal necessary to be considered legitimate treatment leads to a very complicated system given the number of prohibited wastes, treatability groups, treatment methods and treatment train configurations." 55 Fed. Reg. at 22665

As described in A2.D.2(g) if the wastes are all amenable to the same type of treatment to be performed, the facility can combine wastes. Aggregation for centralized waste treatment may result in dilution which occurs in conjunction with adequate treatment. Incidental dilution may also occur when reagents are added to the waste to perform treatment. This too is considered dilution inherent to an effective treatment process as so long as the reagents are capable of effectively treating the constituents subject to treatment. For example, batches that require both oxidation and stabilization must have reagents that will oxidize and stabilize the constituents subject to treatment.

EPA Comment: EQD does not address EPA's comment and the response is unacceptable. The cited preamble language did not conclude that "such a requirement would be unreliable and unworkable." The preamble states that "without further elaboration [emphasis added]" evaluating legitimate treatment by quantifying contaminant removal may be complicated and attempts to do so may fail "to achieve the objective of assuring that wastes are treated by an appropriate method." However, the Agency has elaborated on the type of aggregation EQD proposes in other publications both prior to and after the cited preamble regarding meeting the BDAT without impermissible dilution.

In the LDR Third Proposed Rule preamble, EPA discusses situations like EQD's. Specifically,

". . . echoing Congress' concern in indicating that dilution to avoid proper treatment was impermissible (H.R. Rep. No. 198, Part 1, 98th Cong., 1st Sess. 38

(1983)), is that individual prohibited wastes not be mixed with larger volumes of other wastes (whether prohibited or not) to meet treatment standards without undergoing treatment that substantially reduces the prohibited wastes' toxicity or mobility" (54 FR 84494).

From a May 23, 1994 policy memo:

"Chemical Waste Management v. EPA, 976 F.2d 2, 16, 17, 19-20 (D.C. Cir. 1992), cert. denied 113 S.Ct. 1961 (1993); see also S. Rep. No. 298, 98th Cong. 1st Sess. 17 (1983) ("the dilution of wastes by the addition of other hazardous waste or any other materials during waste handling, transportation, treatment or storage is not an acceptable method of treatment to reduce the concentration of hazardous constituents")" (RO 13673).

If the facility mixes a waste containing both metals and organics with other wastes (such as those with metals but not organics), this may be impermissible dilution if there is not verification of effective organic constituent treatment (meeting the standard) before further aggregation.

In the LDR Third Proposed Rule EPA goes on to state:

"Consequently, it appears to the Agency that any dilution that fails to meet the standard in § 3004(m) of substantially reducing the prohibited waste's toxicity or mobility is impermissible. To achieve this objective, the Agency believes that there must be some actual reduction in the toxicity or mobility of at least one BDAT constituent in each prohibited waste that is treated, to the extent that these constituents are present in initial concentrations that exceed the treatment standard for that prohibited waste. Further, with respect to Organic constituents, "reduction in toxicity" means actual removal of or chemical change to the constituent" (54 FR 48494).

EPA determines it is appropriate to seek verification of removal or chemical change in organic constituents, at least to the extent the treated waste should meet the organic LDR treatment standards.

EPA's same preamble continues to discuss another situation like EQD's:

"Of course, even where one BDAT constituent is treated to reduce its toxicity or mobility, impermissible dilution might occur. For example, a waste with treatable concentrations of metals as well as extremely high concentrations of hazardous organics could be mixed with large volumes of other metal-bearing wastes for metals treatment. To the extent that the high concentrations of organics are diluted by this treatment to below treatable levels, this would constitute impermissible dilution if there is an appropriate organics treatment technology that could be applied prior to metals treatment. In this example, there is an actual reduction in the toxicity or mobility of one BDAT constituent, but dilution to avoid treating organics" (54 FR 48495).

While EPA agrees that EQD is first applying organic constituent treatment, as required, there is no provision in the WAP for verification data indicating effective organic treatment other than subsequent dilution by the addition of large quantities of metals-only waste after the organic treatment step.

2022 EQD Response:

The complete language in RO 13673 states,

"Under RCRA, the LDR prohibition on dilution states generally that no person "shall in any way dilute a restricted waste ... as a substitute for adequate treatment to achieve compliance with [a treatment standard for that waste]". 40 CFR 268.3(a). This prohibition implements the requirement of section 3004(m) of RCRA, which requires that hazardous constituents in hazardous wastes be destroyed, removed, or immobilized before these wastes can be land disposed. Hazardous constituents are not destroyed, removed, or immobilized if they are diluted. Chemical Waste Management v. EPA, 976 F.2d 2, 16, 17, 19-20 (D.C. Cir. RO 13673 1992), cert. denied 113 S.Ct. 1961 (1993); see also S. Rep. No. 298, 98th Cong. 1st Sess. 17 (1983) ("the dilution of wastes by the addition of other hazardous waste or any other materials during waste handling, transportation, treatment or storage is not an acceptable method of treatment to reduce the concentration of hazardous constituents")"

EQD agrees the example provided in 54 FR 48495 could be an example of dilution if the metal bearing waste volume was the only reason organic concentrations were found to be below treatable levels. In this circumstance dilution would be used "as a substitute for adequate treatment" to achieve compliance with or circumvent the LDR standards. Aggregation of waste and reagents conducted for legitimate treatment purposes, however, is permissible regardless of any inherent dilution that may occur from combining waste streams or treatment reagents required to effectively treat the waste and was confirmed by EPA in the 55 Fed. Reg. at 22665-666.

"EPA has acknowledged that prohibited waste which are aggregated are not diluted impermissibly if they are treated legitimately in centralized treatment systems, irrespective of the dilution inherent in such a

system. Thus, if "dilution" is a legitimate type of treatment, or a necessary pretreatment step in a legitimate treatment system such dilution is permissible."

At no point in the preamble's discussion did EPA require LDR verification testing in the middle of a treatment train to quantify the effectiveness of the treatment process. In fact, the language previously provided contradicts EPA's suggestion to require quantifying the extent of removal as a means of evaluating impermissible dilution.

EQD again would like to reiterate for purposes of meeting concentration-based treatment standards, treatment of organics is always initiated before treatment of inorganics when both organic and inorganic constituents are present in the waste; however, the organics treatment process is not necessarily complete simply because the inorganics treatment process has been initiated. Indeed, the two processes can take place simultaneously and take advantage of different properties of the same treatment reagents. The first stage in the chemical oxidation process (i.e. CHOXD, a recognized treatment technology for destruction of organics, see e.g., 40 CFR 268.42 Table 1) involves the addition of an oxidizing chemical which is thoroughly mixed into the batch. Oxidizing chemical on their own are an effective oxidizer capable of destroying most of the organic constituents in the batch during this first stage. The second stage of the chemical oxidation process coincides with the initiation of the stabilization treatment process. As noted previously, the oxidation process does not simply stop upon the addition of stabilizing reagents to the batch. To the contrary, the chemical oxidation process continues and, because the stabilization reagents generate exothermic chemical reactions, the process actually becomes more effective and efficient. Thus, although the first stage of the chemical oxidation treatment destroys most organics, the oxidizing chemicals continue to be mixed with the batch, and the enhanced oxidation process continues to destroy any residual organics, during the second stage at the same time that stabilization reagents are reducing leachability of the inorganic materials. Moreover, although EQD does not currently rely on stabilization of organics to meet LDRs, we note that EPA has concluded that stabilization can effectively treat organics under certain conditions (see September 1, 2001 Draft Interpretive Memorandum on Stabilization of Organic-Bearing Hazardous Waste to Comply with RCRA Land Disposal Restrictions). Thus, sampling a batch prior to the addition of the stabilization reagent is inappropriate because the oxidation treatment process is not complete and will continue to destroy organics until the batch is cleared for disposal; the stabilization reagent's exothermic properties enhance the oxidizing properties of the chemical oxidizer, and thus, the addition of the reagent is for legitimate treatment chemical and not impermissible dilution.

A2.D.3 - Post-Treatment Sampling and Analysis

139.Paragraph 1: At the end of the first sentence, insert "…in all portions of the waste."

EQD Response: This is complete.

EPA Comment: Addressed incorrectly by removing the sentence that this comment refers to. Alternatively, the text "… in all portions of the waste" should have been added to the end of new bullets 1 and 2 at the beginning of this section.

2022 EQD Response: EQD recognizes the obligation for all land disposed waste to meet applicable LDRs. The processes outlined in the WAP, including the requirement that waste be thoroughly mixed during treatment, are sufficient to make sure that the treated waste meet LDRs. To the extent this comment is intended to address concerns regarding the mixing and post-treatment sampling procedures, the portion of the WAP addressing these procedures in the appropriate place to do so since the language included in the WAP is identical to 40 CFR 268.40(a)(1) and (2).

140. Paragraph 2: In the first sentence, insert “all portions.”

EQD Response: Clarity regarding the regulatory requirements specified in 40 CFR 268 has been added.

EPA Comment: This is not addressed. Note that a new Paragraph 2 was added and the previous Paragraph 2 is now Paragraph 3.

2022 EQD Response: Please see response to Comment 139 above.

141. Paragraph 2: Single grab samples compared to the universal treatment standards (UTS) concentration values are insufficient to ensure treatment residuals meet LDR requirements for large treatment batches, without detailed demonstrations of batch homogeneity, waste stream variability, and treatment process variability.

EQD Response: As noted in the cover letter to this submittal, due to the complexity of this issue and US EPA’s and EGLE’s apparent departure from past practices, EQD cannot respond to this comment until we have had further discussions with all parties involved. EQD therefore requests that this issue be separated from EGLE’s other comments, and EQD will respond separately. EQD is confident that an acceptable compromise can be reached on this matter. Although EQD remains committed to reaching an acceptable compromise, the following presents our position on this matter. As was outlined in EPA's WAP Guidance (excerpted below), MDWTP documents compliance with concentration based LDR standards using a single grab sample prior to land disposal because it "ensures conformity with the LDR program goals." While the EPA Guidance highlights the fact that a single grab sample approach does make EPA's enforcement of the treatment standards easier, it also acknowledges that the process for establishing the treatment standards accounted for the use of a single random grab sample as the proposed method for determining LDR compliance as well. Considering EPA's published guidance on this issue, MDWTP is confused by EGLE/EPA's claim that the facility's proposed WAP "continues to call for, without justification, the collection, and analysis of only one grab sample..." to demonstrate compliance with LDR treatment standards. The EPA Guidance goes on to say that "a facility may choose to employ alternate sampling methods" but that both enforcement and compliance with the LDR treatment standards are based on a single grab sample. MDWTP has simply chosen to align its LDR compliance sampling practices with the approach envisioned when the treatment standards were established as well as the approach outlined in the EPA's most recent published nationally published guidance on this issue, rather than choosing to employ an alternate sampling method. It should be noted that this method of demonstrating compliance with LDRs has been in place and approved by EGLE for over 20-years now and is in line with the standard approach used by TSDFs throughout the country.

MDWTP has repeatedly stated it performs a robust, well designed mixing procedure on all waste batches, as described in detail in C4 Treatment. This robust mixing procedure ensures that waste and treatment reagents are uniformly distributed throughout each batch. Although the individual waste streams in some batches may start out as variable, the ultimate treatment residue is uniform.

The fact that a robust, well designed mixing procedure achieves a uniform treatment residue, and that a uniform treatment residue is adequately represented by a single grab sample has been demonstrated at US Ecology’s facilities. For example, in 2018 EPA collected multiple grab samples from a treated batch of waste at a US Ecology facility in Detroit, Michigan, which has similar operations to MDWTP. The concentrations in all grab samples were uniform and met applicable LDRs. Also, in 2017, EGLE collected multiple grab samples of MDWTP treatment residue and found the same outcome – uniform, passing concentrations, demonstrating that MDWTP’s robust, well designed mixing procedure achieves a uniform treatment residue that is adequately represented by a single grab sample.

As stated in the cover letter accompanying today’s submission, given the complex nature of the regulatory issues being discussed, a final deadline at this time is not in the best interest of any of the parties. EQD does not believe separating this issue from the remainder of the application will result in any delay in issuing a

permit decision. As we move forward with US EPA, EQD is requesting EGLE staff proceed with the technical review of the rest of the permit applications, including the Waste Analysis Plan revisions contained in today's submittal. EQD is confident that an acceptable compromise can be reached on this matter, but given both the known and unknown implications, EQD feels strongly that granting additional time to resolve these complex issues is the most prudent decision at this point in time.

EPA Comment: EQD's response is unacceptable. MI-EGLE and EPA have communicated this issue to EQD in person and in writing numerous times since at least 2014. EQD's excerpted quote from the 2015 WAP Guidance is taken out of context and ignores clear guidelines discussed earlier in the document. EQD should not be confused by EPA's comment since we've had multiple meetings and correspondence. EQD is misaligned with the approach EPA used to establish the treatment standards. EPA understands EQD has been misaligned for 20 years, however, MI-EGLE and EPA have relayed this to EQD for at least 8 of those years. EQD's response here refers to the permit application and review for their facility in Belleville, MDWTP, and not the application and WAP under review for EQD. EQD's C4 Treatment does not describe the specific mixing procedures, minimum mixing times, or demonstrations of adequate mixing; only that it will be "thorough." Note that EQD's treatment batches can be as large as 500 cubic yards or the equivalent of over 1,800 55-gallon drums in one batch. While it is encouraging that these two batches passed the LDR, the 2017 and 2018 sampling events included no information on the relative variability or concentrations of LDR constituents prior to treatment. The wastes treated could well have all been similar to each other and/or relatively low in actual initial concentration.

2022 EQD Response: Please see response to MI-EGLE Comment 91 above.

142. Please clarify that EQD will keep records of all failed LDR testing, specifying how this documentation will be maintained.

EQD Response: Requested information has been added.

EPA Comment: Complete.

2022 EQD Response: No response required.

A2.F.3 – Record Keeping

144. Please clarify what information will be included under "TSD facility certifications and demonstration".

EQD Response: This is referring to the certification requirements identified in 40 CFR 268.7 which is already referenced in this sentence.

EPA Comment: We believe this is a MI-EGLE comment.

2022 EQD Response: No response required.

TABLE D.2

147. Additional clarification as to how Table D.2 will be implemented within the framework of the WAP is needed. Please see comments 148 and 149, below.

EPA Comment: See responses to numbers 148 and 149 below.

EQD Response: See response to 148 and 149

148. Please clarify what is meant by wastewater table rows included for listed wastes. It appears the treatment standard for non-wastewaters are applied to the rows described as wastewater, so the intent behind including listed wastewaters is unclear. Please describe under what scenarios the wastewater land disposal treatment standards would apply to waste codes treated at EQD. It is strongly recommended that the table be limited to only those waste codes and treatment scenarios licensed for treatment at EQD.

EQD Response: This has been removed.

EPA Comment: Mi-EGLE should confirm this means the facility will not treat or dispose of wastewater.

2022 EQD Response: Per 53 FR 31209, 55 FR 22537, and 64 FR25411, the applicable LDR treatment standards of waste are based on the form of the waste being placed on the land. Incoming wastes that are considered wastewater at the point of generation and are then treated on-site to a nonwastewater residue must meet the applicable nonwastewater LDR treatment standard for land disposal. EQD therefore does not treat any waste that would be classified as wastewater.

149. Additional clarification is needed regarding how the sampling methods prescribed in Table D.2 will be used with regard to waste characterization and LDR verification.

a. The sampling method column states a scoop, trowel, or trier will be used to collect samples for all waste types. This sampling equipment would be inappropriate for some wastes, such as liquid wastes and heterogeneous solid wastes.

EQD Response: Sampling methods for generated waste are described in section A2.A.3(a) and Appendix E provides sampling procedures.

EPA Comment: The appendix for sampling procedures is labeled "D" in the latest version of the WAP, not "E."

Table D.2 should address three items for nonwastewaters, LDR verification for treatment residuals, hazardous waste decharacterization of treatment residuals, and LDR characterization for incoming wastes that were not characterized for LDR by the generator. Please update Table D.2 to include this description. If LDR characterization is needed for wastewaters (when not determined by the generator) please add to the WAP the procedures that will provide for the full LDR characterization of the wastewaters including specification of the necessary parameters, rationale, test methods, sampling methods, and frequency. If the facility will not receive wastewaters for either treatment or consolidation, this should be stated in the WAP.

In Table D.2 all sampling methods say that a scoop, trowel, or trier will be used to collect the sample. Appendix D which contains the WAP sampling procedures lists "auger" twice but does not list "trowel" which is one of sampling methods that they say they are going to use. Please add "trowel" to Appendix D under "Sampling Equipment Use."

Appendix D does not describe representative sampling approaches needed for hazardous waste characterization versus grab sampling approaches needed for LDR characterization and verification. Table D.2 should identify the number and type (random grab or composite) of samples needed for each waste code and Appendix D should provide the detailed methods for all sampling objectives, including random grab sample(s) for LDR verification and representative sampling for hazardous waste characterization.

2022 EQD Response: Per 53 FR 31209, 55 FR 22537, and 64 FR25411, the applicable LDR treatment standards of waste are based on the form of the waste being placed on the land. Incoming wastes that are considered wastewater at the point of generation and are then treated on-site to a nonwastewater residue must meet the applicable nonwastewater LDR treatment standard for land disposal.

Appendix D has been revised to add a procedure for a trowel.

Section A2.D.3 states, "A single random sample of treatment residue will be sampled from every treatment tank that requires verification that the waste meets the applicable LDR numeric concentrations prior to land disposal off site. Each grab sample will be collected from a random vertical and horizontal location using an excavator to reach the selected sampling point and collecting the sample from the excavator bucket with a disposable scoop or cup." Adding this information to Table D.2 is redundant and unnecessary.

b. A single grab sample may be insufficient to properly characterize a waste stream for the purpose of pre-approval profiling, especially for higher variability waste streams.

EQD Response: Table D.2 describes post-treatment sampling requirements for purposes of LDR compliance. Additionally, A2.A.4 has been revised to reference it for purposes of characterization and LDR compliance of generated waste

EPA Comment: Please refer to the responses to comment #s 29, 141, and 149a. Further, A2.A.4 merely refers to Table D.2 in the instance of an off-site waste for which the generator has not made an LDR determination. The WAP states this determination will be made according to this plan. It is inappropriate to make the incoming LDR determination the same way EQD conducts LDR verification sampling (single grab) when there is no information as to how variable the waste is.

Also, please clarify whether on-site generated wastes include treatment residuals.

2022 EQD Response: A2.A.4's language has been revised to state, "In the event the generator notification (required by 268.7(a)(2)) states, "The hazardous waste may or may not be subject to the LDR treatment standards. The treatment facility must make the determination", EQD will test the waste according to the specification of this plan and such LDR determination will be made utilizing the sampling methods specified in A2.B.1.b and the test methods and treatment standards identified in Table D.2."

Treatment residue is not a new point of generation unless the residue displays a new characteristic. Section A2.D.1 states, "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.

c. As previously discussed, the prescription of 1 grab sample per tank to ensure LDR compliance does not account for waste heterogeneity and does not demonstrate that all portions of the waste meet the standard. Reference to number of samples may not be appropriate within a revised table D.2

EQD Response: Our response to Comment 126, above, is incorporated here by reference.

EPA Comment: This is not addressed. The response to 126 does not seem pertinent here. EQD must be referring to a different comment mistakenly identified as 126.

2022 EQD Response: No revision has been made. See response to 2022 EPA Comment 91.

152. Please provide SOPs for all analytical methods cited in Table D.2 and reference the SOPs in Table D.2. The SOPs should also include any sample preparation methods (such as digestion or extraction methods). References to the SOPs can include wording to include updates to the SOP to allow EQD to make changes to SOP, as necessary.

EQD Response: Table has been revised.

EPA Comment: This is not addressed. It is not clear which analytical methods are performed in-house and which are performed at outside laboratories. All methods performed in-house at EQD that are referenced in Table D.2 must have EQD laboratory-specific SOPs. The WAP must indicate that any off-site analysis will be conducted using the methods specified in Table D2 sufficient to support the stated rationale including appropriate reporting limits. Please provide all analytical SOPs for those methods in Table D.2 that are performed in-house at EQD. Please incorporate October 28, 2021, email from Christine Matlock of MI-EGLE to Phil Tannian (and others) of US Ecology, regarding Analytical SOPs.

Table D.2 largely describes (with a few exceptions) the analytical method used to quantitate the analyte of interest. Correct sample preparation methods (digestion, extraction, cleanup) methods are critical in ensuring adequate preservation identification, quantitation, and recovery of analytes of interest from waste matrices.

EPA does not know if this is EQD's response or MI-EGLE's comment. EPA did not doublecheck the table for appropriate analytical/preparation methods.

2022 EQD Response: EQD's WAP was written consistent with requirements provided in EPA's 2015 Waste Analysis at Facilities that Generate, Treat, Store and Dispose of Hazardous Wastes. The guidance describes the requirements of a WAP and provides two examples of WAP that are acceptable. Standard operating procedures are not identified as a mandatory element of a WAP and both example WAP's include descriptions of the procedures utilized and do not include analytical method standard operating procedures or sample preparation methods.

40 CFR 264.13 requires owners and operators to "describe procedures" that will be carried in order to obtain a detailed chemical and physical analysis of the waste. It does not require the inclusion of standard operating procedures. EQD has included reference to the SW-846 and/or ASTM methods that are used to analyze waste. Additionally, Appendix D was created to provide EGLE with sampling and internal analytical procedures that could not be described with a reference to a standardized test method.

153. Dioxin/furan-containing waste codes (F020-F023, F026-F028, K043 and K099) are only approved for storage at the facility before being trans-shipped off-site to an authorized facility. This must be made clear both in the narrative section of the WAP as well as within Table D.2. Currently, Table D.2 appears to indicate that these waste codes may be accepted for treatment at EQD so long as the treatment process is not to address dioxin and furan UHC concentrations above the UTS.

EQD Response: Table has been revised

EPA Comment: Complete.

2022 EQD Response: No response required.

154. Please revise Table D.2 to include omitted constituents from waste listings. For example, Nickel was omitted from listed waste K172.

EQD Response: Table has been revised.

EPA Comment: Complete.

2022 EQD Response: No response required.

155. In Table D.2, several analytical methods were proposed for analytes which are not included in the scope and application of the standard method. Please confirm if these analytical methods are proposed for the analysis, and if so, please provide documentation of method performance for the waste matrices is satisfactory for the purposes of waste characterization and LDR verification. Please note that discrepancies were identified at additional waste codes aside from the examples listed below.

EQD Response: Table has been revised.

EPA Comment: Complete.

2022 EQD Response: No response required.

a. N-butyl and Isobutyl Alcohol (such as under F001-005) are proposed to be analyzed using SW-846 8015.

EQD Response: Table has been revised

EPA Comment: Complete.

2022 EQD Response: No response required.

b. Isosafrole (such as under F039) is proposed to be analyzed using SW-846 8081.

EQD Response: Table has been revised.

EPA Comment: Complete.

2022 EQD Response: No response required.

c. Kepone (such as under F039) is proposed to be analyzed using SW-846 8081. This method is not recommended for determining Kepone. Method 8270 may be more appropriate for the analysis of Kepone.

EQD Response: Table has been revised.

EPA Comment: Complete.

2022 EQD Response: No response required.

d. Phorate (such as under F039, K038, and P089) is proposed to be analyzed using SW-846 8081.

EQD Response: Table has been revised.

EPA Comment: Complete.

2022 EQD Response: No response required.

e. Pentachloroethane (such as under K018 and K095) is proposed to be analyzed using SW-846 8270.

EQD Response: Table has been revised.

EPA Comment: Complete.

2022 EQD Response: No response required.

f. Hexachloropropene (such as under K030) is proposed to be analyzed using SW-846 8260.

EQD Response: Table has been revised.

EPA Comment: Complete.

2022 EQD Response: No response required.

g. Pentachlorobenzene (such as under K030, K149, and U184) is proposed to be analyzed using SW-846 8260.

EQD Response: Table has been revised.

EPA Comment: Complete.

2022 EQD Response: No response required.

h. Disulfoton (such as under K036) is proposed to be analyzed using SW-846 8081.

EQD Response: Table has been revised.

EPA Comment: Complete.

2022 EQD Response: No response required.

i. Hexachlorobenzene (such as under F025) is proposed to be analyzed using SW-846 8260.

EQD Response: Table has been revised.

EPA Comment: Complete.

2022 EQD Response: No response required.

j. Famphur (such as under P097) is proposed to be analyzed using SW-846 8081.

EQD Response: Table has been revised.

EPA Comment: Complete.

2022 EQD Response: No response required.

k. Parathion (such as F039) is proposed to be analyzed with SW 846 8081

EQD Response: Table has been revised.

EPA Comment: Complete.

2022 EQD Response: No response required.