UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
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Comments on the Draft Hazardous Waste Management Facility Operating License to be issued by the Michigan Department of Environmental Quality to the Dow Chemical Company, Midland, Michigan [EPA ID No. MID 000 724 724], as Published for Public Comment on October 7, 2002

December 6, 2002

The United States Environmental Protection Agency, Region 5 (U.S. EPA or the Agency) submits the following comments to the State of Michigan on its October 7, 2002 draft Hazardous Waste Management Facility Operating License to be issued by the Michigan Department of Environmental Quality (MDEQ) to the Dow Chemical Company (Dow), Midland, Michigan [EPA ID No. MID 000 724 724], as Published for Public Comment on October 7, 2002. Each of the following comments is submitted for the purposes of 40 C.F.R. § 271.19.

A. GENERAL COMMENTS

1. The Operating License is inconsistent with Section 324.11123 (2) of Michigan's Natural Resources and Environmental Protection Act, as amended, (NREPA or Act 451), 1994 PA 451 and Michigan R 299.9710. This provision specifically states that, "An applicant for an operating license for a treatment, storage or disposal facility that is a surface impoundment, landfill or land treatment facility shall demonstrate financial responsibility for claims arising from nonsudden and accidental occurrences relating to the operation of the facility." A demonstration of financial responsibility has not been included with the Operating License. This information should be included to ensure that Dow is able to cover such financial responsibility.

2. The Operating License does not provide detailed information on Preparedness and Prevention required under 40 C.F.R. 264 Subpart C and Michigan R299.9606. Such information should be incorporated as an attachment to the Operating License. Specifically, the description in the Operating License of all the equipment in the hazardous waste management and treatment units is vague. This information should be revised to clearly describe the location of all alarms system and monitoring equipment at the storage and treatment units and indicate their position on a current, detailed and appropriate facility map.

3. It appears, from the information submitted in previous applications by Dow, that the facility is located within the 100 year floodzone. The floodplain map provided by Dow in Section J of the July 2002 revision of its application is unreadable. Dow should be required to provide MDEQ with a clear copy of the Federal Insurance Administration flood map and that map should be included as an attachment to the Operating License. In

addition, the Operating License should contain information which identifies the 100-year flood level and any special flooding factors for maintaining the facility to withstand a washout from a 100-year flood. As required by Michigan R 299.9605 and 40 C.F.R. 264.18, the Operating License should be revised to include the following information:

- The timing of the movement of all units including the estimated time to move the waste, to show that such movement can be completed before floodwaters reach the facility;
- A description of the location(s) to which the waste will be moved and demonstration that those facilities will be eligible to receive hazardous waste;
- The planned procedures, equipment and personnel to be used and the means to ensure that such resources will be available in time for use; and
- The potential for accidental discharges during waste movement.

4. The Operating License should be revised to include an attachment which discusses the specific traffic information provided in the June 30, 2000 Permit Application as required by 40 C.F.R. 270.14(b)(10). This information should also be revised to indicate that wastes generated off site are transported to the facility for treatment. The traffic information should also: discuss the vehicles used for transport and how the movement of these vehicles are monitored at the facility; identify all vehicles used for the shipment of wastes; discuss the procedures from which wastes are transferred from the unloading area to the thermal treatment units; and discuss how and where the liquid wastes are unloaded and transferred into the process units for treatment.

5. The last sentence on page 6 of the Operating License states that "Construction of a storage unit(s) to replace the Waste Storage IIA tank system may be approved by the MDEQ if construction is completed before the operating license expires." Regardless of the expiration date of the Operating License, any such hazardous waste storage unit must be approved under a separate application. Once such an application has been submitted to MDEQ by Dow, the Operating License may then be amended to include the storage unit, assuming the application for the hazardous waste storage unit has been properly reviewed and approved by MDEQ.

6. The Operating License does not include a Hazardous Waste Permit Application form [Form 8700-23] (Part A Application) as an attachment. To ensure completeness, the most recent Part A Application should be attached and included as part of the Operating License.

B. SPECIFIC COMMENTS

OPERATING LICENSE

Part III, Container Storage Conditions

B. Waste Identification and Quantity

7. This section of the Operating License and page 5 of the Fact Sheet state that Waste Storage Area 1 is able to store a maximum of 443,685 gallons of hazardous waste. The

draft Permit further indicates that this volume is equivalent to 8,067 55-gallon containers or 14,790 30-gallon containers. However, 14,790 30-gallon containers would contain a total of 443,700 gallons of hazardous waste. The July 2002 Part A application specifically states that the maximum volume of waste that can be stored in the container storage area is 443,685 gallons. Accordingly, MDEQ should revise the Operating License to clearly state that 14,789 30-gallon containers may be stored at the facility. Any exceedance in the specified maximum capacities identified in Part A requires a permit modification.

Part IV, Tank System Storage and Treatment Conditions

A. Coverage of License

8. According to the Attachment 11, Waste Storage Area IIB is not in use at this time, but Dow has included it in the reapplication material to allow for potential future use. Accordingly, the Operating License should be revised to formalize the requirement for Dow to submit updated integrity certifications and inspection results for the Waste Storage Area IIB tanks and secondary containment system prior to any resumption of hazardous waste storage in accordance with Michigan R 299.9615 and 40 C.F.R. 264.191.

9. The table in item number 7 on page 20 of the Operating License summarizes the storage capacities of the units. The table identifies "32 Building Pack Room" with a capacity of 133,250 gallons. However, the Part A does not identify any such unit. Page 3(1) of the September 2002 Part A Application identifies a storage capacity of 133,250 gallons of "33 Incinerator Pack Room." MDEQ should clarify and revise the Operating License so that it is consistent and provides the exact information included in the Part A Application. Also, the table in item 7 identifies 8,250 gallons of storage at the "Incinerator Tank Room." This area has not been specified or accounted for in the Part A Application. MDEQ should clarify the Operating License to ensure that the information included in the Part A and the Operating License are consistent and accurate.

H. Disposition of Accumulated Liquids

10. Items 2 and 3 on pages 22 and 23 of the Operating License indicate that accumulated precipitation will be removed "within 96 hours" and that spilled/leaked/released liquids will be removed "within 48 hours." This provision is inconsistent with 40 C.F.R. 264.193(c), which specifically states that "spilled or leaked waste and accumulated precipitation must be removed from the secondary containment system with 24 hours." This language needs to be changed to conform with Michigan R 299.9615 and 40 C.F.R. 264.193(c).

Part VII, Incinerator Treatment Conditions

11. Part VII of the Operating license directs Dow to comply with all incinerator provisions of its Michigan air permit, Permit Number 212-00A, issued September 6, 2001. The September 6, 2001 Permit, in part, includes stack emission limits based on 40 C.F.R. Part 63 Subpart EEE, however, the emission limits imposed upon the incinerator reflect the Subpart EEE emission standards applicable to existing incinerators, and not the more stringent standards applicable to new incinerators. On December 2, 2002, U.S. EPA

Region 5 staff received a copy of revised Permit 212-00A, effective November 26, 2002. The Region 5 Air Division is in the process of reviewing revised Permit 212-00A as of the date of these comments. Their preliminary review reveals that revised Permit 212-00A correctly contains the emission standards applicable to new incinerators. However, the final compliance date in the permit for meeting the emission limits for mercury, dioxins and furans is set for September 30, 2004, beyond that which is allowable under the Part 63 regulations.

The 32 Incinerator instead is subject to both the requirements and the compliance dates applicable to newly constructed sources set forth in 40 C.F.R. Part 63 Subpart A, 40 C.F.R. Part 63 Subpart EEE, Section 112(i)(1) of the Clean Air Act, 42 U.S.C. § 7412 and the Clean Air Act permitting requirements. For newly constructed incinerators such as 32, the compliance date for emission standards for mercury, dioxins and furans is upon start up of operations, pursuant to 40 C.F.R. 63.6(b) and 40 C.F.R. 63.1206(3). The MDEQ permitting staff contacted U.S. EPA air permitting staff to determine if a permit mechanism existed to allow an extension of the Part 63 compliance dates for new incinerators. On or about November 8, 2002, Region 5 Air Division staff notified MDEQ staff that an extension of the compliance dates for the 32 Incinerator could not be done through the state permit to install, but if there was a violation, could be addressed pursuant to an agreed to compliance schedule (in addition to other requirements) in a consent decree or consent order.

It is important (and required under 40 C.F.R. 270.62, Michigan R 299.9623 and the Clean Air Act) that the licensee demonstrate that the 32 Incinerator is in compliance with the air emission standards and limitations for new incinerators in 40 C.F.R. Part 63, subpart EEE, (including conducting a comprehensive performance test and submitting a notification of compliance). The hazardous waste facility operating license does not amend any of the Clean Air Act permitting procedures and requirements for new hazardous waste combustors.

Part VIII, Surface Impoundment Storage and Treatment Conditions; Tertiary Pond

C. Waste Treatment Capacity and Methods

12. This section of the Operating License should be modified by MDEQ to clarify how the maximum allowable treatment volume of 50,000,000 gallons per day was derived, given the fact that the total storage capacity of the tertiary pond system is 783,000,000 gallons. The Operating License should also state the typical daily output of such wastes from the Wastewater Treatment Plant to ensure that the stated surface impoundment treatment capacity will be sufficient. The Operating License should also specify how the volume of hazardous waste entering the tertiary pond system will be measured (e.g., flow rate and duration from the Wastewater Treatment Plant). A contingency plan should also be provided by Dow for alternative storage of wastewater from the treatment plant in the event that the tertiary pond system needs to be taken out of service temporarily for repairs or remediation.

D. Design and Operating Requirements

13. According to the determination presented in Attachment 19, Dow has obtained a waiver from U.S. EPA for compliance with Minimum Technology Requirements for surface impoundments pursuant to Section 3005(j)(3) of the RCRA statute. As a condition of this waiver, Dow is prohibited from managing certain wastes in the tertiary pond system. Consequently, this section of the Operating License should specify that Dow may not place land disposal restricted wastes in the tertiary pond pursuant to RCRA Section 3005(j)(11)(B). The Operating License should also state that Dow may not manage dioxin wastes (i.e., hazardous wastes F020, F021, F022, F023, F026, and F027) in the tertiary pond without development and regulator approval of an appropriate dioxin management plan as required by Michigan R 299. 9616 and 40 C.F.R. Section 264.231.

Part X, Environmental Monitoring Conditions

14. This part of the Operating License states that background values for constituents of concern in glacial till, the regional aquifer and sludge dewatering facility groundwater will be established at values less than the respective laboratory target detection limits. Ideally, the established background concentrations should be nondetect at or above the laboratory detection limits. This would establish that background groundwater is contaminant free and that the results can reliably be used for comparison with positive results detected downgradient. Selection of laboratory target detection limits above the established background levels is inappropriate and would hinder comparison of the data. There would be no way to determine if non-detect results in downgradient sampling locations were truly below background, or above background and below the analytical detection limit. Furthermore, use of detection limits above the background concentration effectively negates the value of establishing background contaminant concentrations since every positive detection would necessarily be above background and therefore be considered anthropogenic. In order to ensure accurate measurement, reporting, and data comparison, target detection limits for the laboratory must be selected at levels lower than the established background concentrations. MDEQ should revise the Operating License accordingly. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

15. This part of the Operating License outlines notification requirements to be followed in the event of a statistically significant increase in the concentration of primary constituents. Specifically, the draft License allows Dow seven (7) working days to make the initial notification by telephone. An additional seven (7) calendar days are provided for making a follow-up notification in writing. Federal regulations in 40 C.F.R. Section 264.98(g)(1), however, allow for only seven (7) days before making the formal notification in writing. Michigan R 299.9612 adopts by reference the groundwater monitoring section of 40 C.F.R. Part 264 (Subpart F) and does not provide alternative notification timelines. Accordingly, the Operating License should be modified to reflect current notification schedules to be followed in the event of a statistically significant increase in primary constituent concentrations.

16. Appendix D to Attachment 24 of the Operating License presents a schedule for periodic resurveying of well and piezometer elevations across the site. Attachment 25 outlines a schedule for routine inspection and maintenance of monitoring wells, piezometers, purge wells, and the RGIS system at the facility. However, these requirements have not been consistently formalized in the draft Permit. The requirement for resurveying appears to

have been omitted entirely from Part X, and required inspections have been noted only sporadically. Part X of the draft Permit should be reviewed and modified as necessary so that the Operating License is consistent and directs Dow to implement the above-stated requirements in accordance with Condition II.F.1 of the Operating License, Table V-14 of Attachment 25, and Appendix D of Attachment 24.(Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

A. Glacial Till and Regional Aquifer Detection Groundwater Monitoring Program

17. Condition X.A.1 of the draft Operating License should be expanded to include monitoring well 3795. This surface sand unit well is used in conjunction with co-located deep well 3796-A to assess vertical gradients in the regional aquifer at the northwestern corner of the tertiary pond system and immediately adjacent to the Number 6 Brine Pond.(Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

18. Conditions X.A.5 and X.A.6 of the draft Operating License should be expanded to note that additional wells and/or primary constituents may be added to the glacial till and regional aquifer detection monitoring program, if warranted, based on results of planned corrective action investigation efforts north of the tertiary pond and elsewhere on- and off-site. Such an expansion of the monitoring program may include quarterly sampling at wells 3857 and 3859, or at deep wells yet to be installed. Similarly, the primary constituents listed in Table V-9 of Attachment 25 may need to be expanded to include new constituents of concern identified during the planned investigations. The Operating License should also outline procedures to be followed in formalizing any necessary expansions to the monitoring program for glacial till and regional aquifer groundwater, but should specifically indicate that, once approved by appropriate regulatory agency representatives, the modified program may be enforced as part of the final Operating License without the requirement of a minor modification.(Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

B. Sludge Dewatering Facility Groundwater Monitoring Program

19. According to background material in Section XVIII of the reapplication package (page 26), secondary parameter exceedances have been observed in groundwater beneath the sludge dewatering facility (SDF). Dow attributes these exceedances to natural variations in the groundwater based on studies conducted in 1992 and 1997. Rather than repeat similar studies with regard to ongoing exceedances, Dow proposes to show that groundwater beneath the SDF is contained by an inward hydraulic gradient and, therefore, such elevated secondary parameter readings are of only limited concern. To support its determination that groundwater flow has been controlled in this area, Dow cites water level measurements from February 1998 and May 2001, as shown on Figure XVIII-7. However, water level contours presented on this figure have only been inferred for the western corners of the SDF. Inferred contours do not provide sufficient confirmation that shallow groundwater is controlled beneath the entire WMU. Planned installation of piezometers within the different SDF cells will provide additional support for establishing that an inward gradient exists. Nevertheless, additional water level monitoring locations may need to be installed around the SDF perimeter, specifically along the northwestern and southwestern corners of the WMU, so that inferred water level contour lines can be replaced with measured level data, and Dow can confirm that impacted groundwater is

fully contained. Furthermore, for the larger cells at least, comparison of water levels within the cell with those measured in a single nearby piezometer, as required under draft License Condition X.B.12.(b), may be insufficient. For example, to document complete containment, it would be prudent to compare water levels in cell 4 with those measured in wells 3922 and 3779, as well as water levels measured along the southern perimeter of the cell. The hydraulic monitoring program and associated license requirements should be reevaluated to ensure that the purposes of this program will be achieved. MDEQ should modify the Operating License accordingly. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

C. Poseyville Landfill Groundwater Monitoring Program

20. Although Condition X.C.5 of the Operating License and Section III.B of the fact sheet indicate that the Poseyville Landfill detection monitoring program will be conducted quarterly, Table V-13 of Attachment 25 calls for only annual detection monitoring at five of the upgradient wells and two of the downgradient wells (i.e., wells 2969, 2985, 2986, 2995, 2996, 2998, and 2999). Additional detail should be provided in the Operating License or Attachment 25 to explain why a reduced detection monitoring sampling frequency is appropriate for these particular wells along the perimeter of Poseyville Landfill or Attachment 25 should be revised to conform with the Operating License. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

21. The current scope of hydraulic and chemical monitoring at the northeastern corner of the closed Poseyville Landfill is inadequate to support a full understanding of groundwater flow or complete contaminant delineation in this area. A slurry wall has been installed adjacent to this corner of the landfill to limit downgradient migration of impacted groundwater, and four purge wells have been installed further downgradient to reverse direction and capture the plume of contamination that had already escaped the former landfill. Approximate boundaries of the plume are shown on Figure V-8 of Section V in the reapplication package; however, since the time frame represented by the map is not indicated, the figure is of only limited value. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

As currently written, there is no requirement in the Operating License for Dow to conduct continued periodic chemical monitoring other than in the four purge wells. While purge well water quality data may be indicative of overall groundwater quality being captured by the extraction system, and may indicate decreasing contaminant concentrations outside the landfill, chemical monitoring only in these wells will not allow the facility to track the areal extent of the downgradient contamination plume, ensure downward trends in outermost contaminant concentrations, ascertain effectiveness of the remedial system in capturing the entire plume area, or identify the need for changes in the corrective action or monitoring programs. Consequently, this condition of the Operating License should be rewritten by MDEQ to require additional quarterly chemical monitoring outside the northeastern corner of the landfill to assess changes in plume concentrations and migration over time. Additional monitoring locations should also be required by MDEQ to be installed to ensure that the plume is adequately and fully delineated. Associated reporting requirements should be added by MDEQ to include the development of clearly dated quarterly plume maps showing shrinkage of the plume's areal extent in comparison to isoconcentrations documented upon initial detection of the release. It should also be noted

that data has only been provided in Section V of the reapplication package for three of the four purge wells outside the Poseyville Landfill. In the future, Dow should ensure that data for all four purge wells is properly and fully reported. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

The proposed hydraulic monitoring program is deficient in that there is no requirement for the facility to develop groundwater level contour maps specifically showing the impact of purging on groundwater flow in this area of the site. To ensure that the system is operating effectively, the contour maps should be revised to document the existence of an inward gradient over the entire plume area, as established based on results of the chemical monitoring program discussed above. In addition, the hydraulic monitoring should include an evaluation of potential impacts on plume capture related to an unanticipated system shutdown. The radius of influence of the purge wells should be evaluated and used to determine the maximum length of time the system could be shut down without losing the ability to recapture downgradient contamination. A contingency plan should also be developed by Dow for plume containment and monitoring in the event that the maximum allowable time limit for system shut down is exceeded. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

Finally, it is unclear from the background material provided with the Operating License whether there have been any attempts to assess the possibility of impacted groundwater flow from Poseyville Landfill around the edges of the slurry wall trench along the northeastern corner of the unit. If not, MDEQ should require in the Operating License that this potential be assessed via installation of additional piezometers and/or monitoring wells in the vicinity of piezometer 3282 and near the southeastern terminus of the slurry wall. Such information is necessary to document that groundwater beneath the closed landfill is under control. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

D. Six Purge Wells Groundwater Monitoring Program

22. Condition X.D.3 of the draft Operating License presents requirements for chemical characterization in the vicinity of the six purge wells installed west of the Tittabawassee River to pull an identified brine plume away from surface water. For clarity, this draft Permit condition should be expanded to note that results from the initial sampling event will be used by Dow and the MDEQ to develop a program for future chemical monitoring in the area. Furthermore, the Operating License should state that the follow-on chemical monitoring program (including all appropriate analytical parameters and all appropriate new or existing monitoring locations) will become an enforceable component of the final Operating License once approved by appropriate regulatory agency representatives without the need for a formal license modification. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

E. Sand Bar Monitoring Program

23. According to Condition X.E.1 of the Operating License, Figure V-6 of Attachment 25 presents a layout of the east side main plant sand bar monitoring network. While the referenced figure shows the location of monitoring wells in relation to the sand bar dewatering lift station, there is no indication whatsoever as to the location of either the sand bar or associated monitoring wells in relation to the overall site layout. Furthermore,

the figure does not provide any indication as to the size of the sand bar area being dewatered via the lift station. (Background material provided in the reapplication package similarly omits this information.) Due to these data gaps, it is difficult to assess the adequacy of the established hydraulic containment system or proposed monitoring requirements in the draft license. For example, without specific detail on the size of the sand bar and direction of groundwater/surface water flow in the area, it is unclear whether monitoring the hydraulic gradient on only one side of the lift station will be sufficient to ensure that the entire impacted sand bar area is being dewatered and that adjacent surface water is being adequately protected. Similarly, without knowing the specific location of the sand bar within the facility boundaries, other potential contaminant sources in the area cannot be assessed, and completeness of the target constituent list in Table V-7 cannot be evaluated. This is of particular concern given the fact that Table V-6 of the reapplication package shows elevated detections in the sand bar area of constituents which have not been included on the current version of Table V-7. Accordingly, the Operating License and/or associated attachments should be modified to provide additional detail as needed to resolve these data gaps and apparent inconsistencies. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

F. Tertiary Pond Monitoring Programs

24. Condition X.F.4 of the draft Operating License proposes use of the generic residential drinking water criteria from Part 201 of Act 451 in determining if remediation of shallow groundwater west of the rectangular pond is complete. To facilitate data comparison, Table V-8 of Attachment 25 should be expanded to include pertinent criteria for the area-specific constituents of concern.(Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

25. Condition X.F.12 of the Operating License should be expanded to specifically identify those monitoring locations to be used in confirming hydraulic containment within the tertiary pond slurry wall. Water levels are currently proposed only to be measured in well 3795, but measurements must be taken in at least one well or monitoring point on both sides of the slurry wall in order to make a comparison and determine the hydraulic gradient. This section of the draft Permit should also be modified to note that hydraulic monitoring will be conducted monthly, as indicated in Section III.B of the fact sheet. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

G. East Side Main Plant Revetment Groundwater Interception System (RGIS) Hydraulic Monitoring Program

26. Paragraph X.G.3 of the Operating License should reference Table V-4 of Attachment 25 instead of Table V-9 for a listing of automated piezometers in the east side RGIS well clusters. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

27. According to this section of the Operating License, water levels in the east side RGIS shall be maintained at least two feet below those measured real-time in the adjacent Tittabawassee River. License condition X.G.8 presents details of the proactive response to be initiated by Dow in the event that RGIS water levels rise to within this two-foot margin of safety. To ensure a timely response, subparagraph (a) of this section should be clarified to indicate that, even if high river levels delay initial onset of the proactive response

investigation, the licensee shall continue to monitor river water levels such that the investigation can commence as soon as possible. Furthermore, MDEQ should revise the Operating License to state that once this investigation has begun, the proactive response period shall last no longer than two calendar days. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

H. East Side Main Plant RGIS Chemical Monitoring Program

28. Condition X.H.3 of the Operating License should be expanded by MDEQ to require evaluation of and annual reporting on contaminant concentration trends over time in east side lift station water. Any noticeable changes in water quality should be documented in the annual report, along with a discussion of the potential significance of such differences on overall groundwater quality approaching the Tittabawassee River from the east. This same comment applies to draft license condition X.I.6, addressing annual reporting of the west side lift stations and groundwater quality approaching the river from the west. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

I. West Side Main Plant and Tertiary Pond RGIS Monitoring Program

29. For clarity, condition X.I.3 of the Operating License should be expanded to discuss relative water level measurements that would indicate that the tertiary pond RGIS is acting as an effective hydraulic barrier between the Tittabawassee River and Bullock Creek and approaching impacted groundwater (i.e., RGIS water levels should be maintained lower than those measured in surface water or groundwater on the opposite side of the west side tile system). The Operating License should also specify any margin of safety that must be maintained in the relative water level measurements (e.g., at least two feet difference), as was outlined for the east side RGIS in Condition X.G.8 of the draft license. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

30. Condition X.I.6 of the Operating License outlines the proposed chemical monitoring program for the West Side Main Plant and Tertiary Pond RGIS. As currently written, samples must only be collected for chemical analysis from lift station 20. Although water quality at this lift station may be representative of water quality beneath the main tertiary pond area, it is recommended that the draft license be expanded to also require annual chemical monitoring of samples from lift station 11 (to evaluate quality of groundwater being captured by the west side RGIS in the vicinity of the Triangle and Number 6 Brine Ponds) and station 9 (to evaluate quality of groundwater being captured at the northern terminus of the west side RGIS which may reflect impacts in the northwestern corner of the site). (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

J. Facility Shallow Groundwater Monitoring Program

31. The first paragraph of this section of the Operating License refers to Figure 8 of Attachment 24 for a map of piezometers to be used for monitoring shallow groundwater facility-wide. However, no such figure is provided in either Attachment 24 or 25, and does not appear to have been included with the reapplication package. Consequently, the adequacy of this key groundwater monitoring component (which will be used to determine site-wide and off-site shallow groundwater flow directions and approximate velocities) could not be properly assessed. Before the Operating License is issued, MDEQ must

require Dow to provide a figure and full list of the pertinent monitoring locations for review and evaluation. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

L. Soil Monitoring Programs

32. To allow for an adequate assessment of the proposed on- and off-site soil monitoring programs, Figure 7 from Attachment 25 should be modified to clearly identify 2 Gate and the general location where the third soil box will be installed. The Green Belt monitoring areas along Bay City and Saginaw Roads should also be identified on the map. (Michigan R 299.9611 and 40 C.F.R. Subpart F)

Part XI, Corrective Action Conditions

33. A new attachment should be developed or the reapplication package should be modified by Dow to present as much detail as possible on planned sampling parameters, procedures, and sampling locations. Based on the compliance schedule presented in Attachment 28 of the Operating License, it is understood that these details are still to be determined for many of the WMUs and AOCs, and Dow has committed to preparation and submittal of work plan documentation for full review by appropriate MDEQ staff. However, even basic information on planned investigation or corrective action coverage areas would be helpful in assessing overall scope of planned environmental actions site-wide and off site. For example, indicating whether future surface water sampling will be limited to the Tittabawassee River and Bullock Creek or will also include the Saginaw River and Saginaw Bay would allow for a more complete assessment of corrective action plans for the facility and identification of possible data gaps. MDEQ should modify the Operating License accordingly. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

34. As outlined in Section X.A of the Operating License, the detection monitoring program for glacial till and regional aquifer groundwater will include an assessment of vertical gradient and confirmation of upward flow. However, this evaluation is limited to only four locations immediately surrounding the tertiary pond. Because shallow groundwater impacts have been identified elsewhere within the facility boundaries and immediately off-site, and because additional AOCs are being investigated in the area, the vertical gradient evaluation should be expanded to confirm upward flow across the entire site area and beneath impacted off-site areas. Results of such an assessment will enable Dow, MDEQ, and U.S. EPA to discount the possibility of downward contaminant migration and to rule out the subsequent need for chemical monitoring of regional aquifer groundwater in areas where shallow groundwater contamination is identified. MDEQ should modify the Operating License accordingly. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

B. Corrective Action Beyond the Facility Boundary

35. **Inconsistency:** U.S. EPA, has determined that issuance of the Operating License would be inconsistent with the State of Michigan's approved RCRA program because Section XI. B "*Corrective Action Beyond The Facility Boundary*" of Dow's draft Permit does not require Dow to implement corrective action beyond its facility boundary for all releases that have or may have migrated, or otherwise have or may have been emitted, beyond its facility boundary as required by Section 3004(u) and 3004(v) of RCRA, 42 U.S.C. §

6294(u) and 6294(v), 40 C.F.R. 264.101 and MI R 299.9629.

Comment: Accordingly, the corrective action conditions of the Operating License must be modified by MDEQ to include any additional off-site areas requiring further corrective action beyond Dow's Facility boundary. These areas include, but are not necessarily limited to the following: 1) the City of Midland; 2) the area surrounding the City of Midland; 3) the Tittabawassee River and its floodplain; 4) the Saginaw River and its floodplain; and 5) the Saginaw Bay. Dow must be required to submit a written Remedial Investigation Work Plan for each of these additional off-site areas to the Chief of the Waste and Hazardous Materials Division within 60 days of the issuance of Dow's final Operating License. Based upon the results of these Remedial Investigations, the Chief of the Waste and Hazardous Materials Division may require additional corrective action measures as authorized by Conditions XI.F. through XI.J. of the draft Permit.

Statement of the Reasons for the Comment: This comment is submitted to the State of Michigan for the following reasons. The *Table of Releases Beyond the Facility Boundary* set forth at page 70 of the Operating License only lists Midland Area Soils as an area where there have been releases of hazardous contaminants beyond Dow's Facility boundaries. This, however, is not accurate or appropriate because the State of Michigan currently has a reasonable basis to include the additional off-site areas identified above.

Ample evidence has been gathered by the MDEQ and other local, state, and federal agencies which clearly demonstrate that there have been releases of hazardous waste or constituents from solid waste management units and other sources at Dow's facility which have migrated, or have been emitted, beyond Dow's Facility boundary. MDEQ's current draft of the Operating License, however, relieves Dow of all responsibility to clean up all these releases which have migrated or have been emitted beyond Dow's Facility boundary except those released to the Midland Area Soils. This is not acceptable and contrary to the requirements of all applicable federal and state laws and the regulations promulgated thereunder.

MDEQ sampling results clearly demonstrate that several additional areas meet the stated criteria of R 299.9629 and should, therefore, be listed in the Operating License as off-site areas requiring further corrective action beyond the Facility boundary. The *Assessment and remediation of contaminated sediments (ARCS): Assessment of sediments in the Saginaw River area of concern,* 1995, USEPA, found dioxins and furans to be significant pollutants in the Saginaw River and the Saginaw Bay. The *Greenpoint – Tittabawassee River Dioxin Study Area Phase I Sampling Study Report*, June, 2002, MDEQ, p. 3, states that "The Phase I sampling program has identified that elevated levels of dioxin are consistently found above the Part 201 RDCC within the lower Tittabawassee River floodplain near the river's confluence with the Saginaw River." The *Summary of Phase II Tittabawassee River Flood Plain Sampling*, April - June, 2002, MDEQ, indicates that soil sample locations within the Tittabawassee River flood plain downstream of Midland contain elevated dioxin concentrations. In addition, the *Baseline Chemical Characterization of Saginaw Bay Watershed Sediments*, August 29, 2002, MDEQ, p.16, states "The geographic distribution of the contaminants combined with the dioxin and furan congener profile information strongly suggests that Dow's Midland facility is the most likely source of the elevated levels of dioxins and furans in the Tittabawassee River." The Baseline Chemical Characterization of Saginaw Bay Watershed Sediments states that

"The concentrations of dioxins and furans in sediments and soils represent a potential environmental and human health issue in the Tittabawassee River watershed that requires further study." These reports document elevated levels of dioxin in the City of Midland, the Tittabawassee River and its floodplain, the Saginaw River and its floodplain and the Saginaw Bay. Accordingly, the State of Michigan must list these areas as additional off-site areas requiring further corrective action beyond the Facility boundary in the corrective action conditions of Dow's draft Hazardous Waste Management Facility Operating License at Part XI. B of the License.

As a result, Dow's draft Permit must require Dow to implement corrective action beyond its Facility boundary for all releases of hazardous waste or constituents that have or may have migrated, or otherwise have or may have been emitted, beyond its facility boundary as required by Section 3004(u) and 3004(v) of RCRA, 42 U.S.C. § 6924(u) and 6924(v), 40 C.F.R. 264.101 and Section R 299.9629 of NREPA.

The sections of RCRA that support this comment are Sections 3004(u) and 3004(v), 42 U.S.C. §§ 6924(u) and 6924(v), which require that corrective action be performed for all releases of hazardous waste or constituents from any solid waste management unit at a treatment, storage or disposal facility seeking a permit under Subchapter III of RCRA, regardless of the time at which waste was placed in such unit and which also require that any permit for the treatment, storage or disposal of hazardous waste issued under Section 3005 of RCRA, 42 U.S.C. § 6925, shall contain schedules of compliance for such corrective action and assurances of financial responsibility for such corrective action. The section of the Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Facilities that support this comment are MI R299.9629 and 40 C.F.R. 264.101 which requires similar actions to those listed above. Accordingly, the corrective action permit conditions set forth below must be included in the Operating License as required by RCRA. In addition, Section V.1.B. of the November 2, 2000 the MOU between the U.S. EPA and the MDEQ also states that MDEQ will continue to incorporate corrective actions requirements into licenses.

Actions to be Taken Pursuant to 40 C.F.R. 271.19

The following conditions are necessary to implement the State of Michigan's approved RCRA program requirements and would, therefore, be included in a permit were it to be issued by the Regional Administrator of USEPA. Accordingly, the Director of the MDEQ shall modify Section X1.B. of this draft Hazardous Waste Management Facility Operating License to include the following conditions:

B. CORRECTIVE ACTION BEYOND THE FACILITY BOUNDARY

1. *The licensee shall implement corrective action beyond the facility boundary if the release of a contaminant has or may have migrated or has or may have been emitted, beyond the facility boundary, unless the licensee demonstrates to the satisfaction of the Chief of the Waste and Hazardous Materials Division that, despite the licensee's best efforts, the licensee was unable to obtain the necessary permission to undertake this correction action. The licensee shall not be relieved of all responsibility to clean up a release that has migrated or has been emitted beyond the facility boundary*

where off-site access is denied. On-site measures to address such releases shall be addressed under this part of the license, as determined to be necessary on a case-by-case basis Assurances of financial responsibility for such corrective action shall be provided as specified in Conditions XI.K. and XI.L. of this license. {Section 11115a of Act 451 and R 299.9629}

2. *The following off-site areas identified in the table below require further corrective action. The licensee shall submit a written Remedial Investigation (RI) Work Plan to the Chief of the Waste and Hazardous Materials Division within 60 days of the issuance of this license. The RI Work Plan shall contain detailed and legible figures and diagrams identifying the specific locations of known off-site soil and sediment impact areas. Based upon the results of the RI, the Chief of the Waste and Hazardous Materials Division may require additional corrective action according to Conditions XI.F. through XI.J. of this license for the areas identified below.*

Releases Beyond the Facility Boundary	*Off-Site Areas that Exceed the Environmental Protection Standards Pursuant to Section 324.20120a(1)(a) and (17) of Act 451*
Midland Area Soils	*Areas Impacted by Off-Site Migration or Transportation of Contaminants*
Tittabawassee River Floodplain	*Areas Impacted by Off-Site Migration or Transportation of Contaminants*
Saginaw River Floodplain	*Areas Impacted by Off-Site Migration or Transportation of Contaminants*
Tittabawassee River Sediments	*Areas Impacted by Off-Site Migration or Transportation of Contaminants*
Saginaw River Sediments	*Areas Impacted by Off-Site Migration or Transportation of Contaminants*
Saginaw Bay	*Areas Impacted by Off-Site Migration or Transportation of Contaminants*

36. **Additional Corrective Action Comments**

In addition, USEPA objects to the removal or modification of any of the other corrective action conditions currently set forth in the Operating License without the prior opportunity to review and comment by the Agency. In particular, USEPA objects to any modification of the Operating License via the incorporation by reference of MDEQ's November 6, 2002 draft CACO as published by the State of Michigan on November 9, 2002, or any term or condition thereof, into the Operating License to the extent that the Agency objected to the CACO, or any term or condition thereof, and the State of Michigan has not adequately resolved USEPA's objection. Should such modification be contemplated by MDEQ, USEPA requests that the Director of MDEQ notify the Regional Administrator of USEPA

of such intention in writing and take all necessary and appropriate measures to ensure that the State of Michigan complies with all applicable public notice and comment period requirements, including but not necessarily limited to the issuance of a new or revised public notice and a new public comment period, or appropriate extension thereof. In addition, USEPA requests it be provided an reasonable opportunity to review and comment on any such substantive change to the Operating License.

Because Sections 3004(u) and 3004(v) of RCRA, 42 U.S.C. §§ 6924(u) and 6924(v), mandate the placement of corrective action requirements in the Operating License, the Agency recommends that all corrective action at Dow's facility be completed pursuant to the conditions of the Operating License. In addition, USEPA's October 30, 1986 authorization, under Section 3006(b) of RCRA, 42. U.S.C. § 6926(b), to the State of Michigan to administer and enforce Michigan's hazardous waste management program, as amended, (40 C.F.R. Part 272, Sub-Part X; 51 FR 36804), only authorizes MDEQ to implement federal corrective action through a permit, not an order. See the Agency's comments in USEPA's December 6, 2002 *Comments on the Draft Corrective Action Consent Order between the Michigan Department of Environmental Quality and Dow Chemical Company as Published on November 9, 2002* concerning the legal relationship between the Order and the Operating License.

Accordingly, USEPA objects to the Operating License to the extent that it does not require the performance of corrective action pursuant to the requirements of Sections 3004(u) and 3004(v) of RCRA, 42 U.S.C. §§ 6924(u) and 6924(v).

C. Identification of Existing Waste Management Units and Areas of Concern

37. Information included in this section of the Operating License offers only a general description of the known WMUs and AOCs at the Dow facility and adjacent properties. Although Section XVI.C of the reapplication package provides additional detail, only the most basic corrective action plans and priorities have been noted. To facilitate a thorough and comprehensive evaluation of proposed environmental investigation and corrective action efforts, and to ensure that the overall scope of the planned corrective action program is sufficient, additional detail must be provided in both the Operating License and the associated attachments. To address this issue, it is recommended that tables in Part XI of the license be combined and expanded to note the specific history of the identified WMUs and AOCs, suspected or known contaminants, impacted media (actual or suspected), and specific plans for investigation and/or corrective action. For example, for Locally Elevated Levels Site 1, the table should present:

- A brief history of the WMU and an explanation of why the area is suspect (e.g., location of former chlorinated aromatic compound manufacturing facilities);
- The main constituents of concern (e.g., dioxins and furans);
- Corrective actions implemented to date (e.g., area closed as a landfill via capping; slurry wall installed to contain impacted groundwater; nature and extent of contamination fully delineated in soil and groundwater);
- Plans for further corrective action and/or investigation (e.g., ongoing cap maintenance; hydraulic monitoring); and
- The purpose of those actions (e.g., to minimize infiltration and ensure complete

and effective capture of impacted groundwater within the slurry wall).

The table should also present facts justifying the necessity for initial preliminary assessment (RCRA Facility Investigation Phase I) investigations at the on- and off-site AOCs. Section XVI.C of the reapplication package provides extremely limited information on suspected sources, possible constituents of concern, and indicators that contamination may be present in these areas.

R. Source Control

38. The U.S. EPA strongly supports the requirements of section. Meeting the source control requirements of Part 111 or Part 201 of Act 451 is critical for the long-term success of corrective action activities.

ATTACHMENT 1, WASTE ANALYSIS PLAN:

General

39. Attachment 1 of the Operating License, the Waste Analysis Plan (WAP), is lacking specific detail on the waste characterization process in place at the facility, which is inconsistent with the requirements of Michigan R 299.9605 and 40 C.F.R. 264.13. For example, page II.C-11 states that "Generator process information and analytical data will be used to demonstrate that those waste mixtures and wastes with multiple codes are properly characterized." However, no specific details on how the wastes will be "properly characterized" have been outlined in the text of Attachment 1 of the Operating License. In addition, the text does not provide the detailed waste characterization processes that are used by the on-site and off-site generators. Accordingly, the WAP should be revised to outline the methodology used to collect the waste characterization information for the wastes stored and treated at the facility. The WAP should also describe the waste, the hazard characteristics, the basis for the hazard designation, and provide the process knowledge detailing the chemical and physical characteristic of the waste. This information should include the analytical parameters, the analytical methods, and the associated quality assurance/quality control (QA/QC). In addition, the WAP should be revised to document the process knowledge that is used to characterize all of the incoming wastes to be treated. At a minimum, the information must include all information necessary to treat, store, or dispose of the waste in accordance with the requirements of 40 C.F.R. Parts 264 and 268. (See 40 C.F.R. 264.13) This information is not completely provided in the Operating License. Such information may include detailed information on the wastes from existing published or documented waste analysis data or studies conducted on hazardous wastes generated by a process similar to that by the wastes which generated. Dow should be required to demonstrate that the process knowledge documentation is sufficient to identify the wastes accurately and completely. The Operating License should be revised to include this detailed information for each routinely generated waste to be treated at the facility. In addition, the procedures to collect waste characterization information for wastes that may be generated in the future must also be included in the Operating License. Overall, Attachment 1 needs to be revised to provide a clear presentation of the systems used to identify, classify and characterize the wastes.

40. Appendix 1 to Attachment 1 is lacking sufficient detail. The purpose of Appendix 1 is to outline the QA/QC procedures; however, the discussion in Appendix 1 is very general. For example, Appendix 1 does not reference SW-846 Methods (40 C.F.R. 260.11 and Appendix I of 40 C.F.R. 261). The first paragraph of this Appendix states that "The amount of quality assurance review that is needed may vary depending on the complexity of the analysis required for the waste management method or the regulatory program." This general statement is not sufficient as it does not provide the specific QA/QC procedures that should be used for the waste characterization program to be put in place under the Operating License. Accordingly, Appendix 1 should be revised to provide the specific SW-846 methods to be used, the corrective action in place for any variance in the procedure, as well as any deviations for the QA/QC outlined in any referenced method(s).

A. Captive Facility Accepting Off-Site Waste

41. Page II.C-4, the last paragraph of Section A of Attachment 1 references several federal regulation citations. One of the citations for 40 C.F.R. has been identified as "24.1063." This reference should be revised to state "264.1063."

42. Dow does not identify the source of off-site generated wastes. MDEQ should require Dow to revise its application to clearly identify the facilities from which wastes will be received. Dow should Revise its Part A Application to include any additional wastes and discuss the waste analysis of these wastes prior to accepting them for treatment. Also, Dow must clearly indicate where all of the wastes that are generated at the other facilities are stored prior to acceptance for treatment.

A(1) Initial Waste Characterization Requirements of Generators

43. Page II. C-4 of Attachment 1 references an internal audit system identified as the Operating Discipline Management System (ODMS). However, a description of the ODMS and how the system will be used to audit waste profile information submitted by generators has not been included in Attachment 1. This provision is inconsistent with Michigan R 299.9605 and 40 C.F.R. 264.13(a). Dow must clarify the attachment and ensure that all wastes that have been accepted for storage or treatment at the facility are properly characterized.

A(1)(a) Generator Waste Characterization Discrepancies

44. The second paragraph on page II. C-5 of Attachment 1 states that, "Only wastes meeting Environmental Operations' requirements will be accepted." The information provided in the attachment should be revised by Dow to clearly outline these "Environmental Operations' requirements." The text should be revised to clarify exactly how the determination that requirements have been met is made. Michigan R 299.9605 and 40 CFR 264.13(a)

A(1)(b) Subsequent Waste Shipment Procedures

45. Pursuant to 40 C.F.R. 264.13(a)(3), this section of Attachment 1 should be revised by Dow to indicate that when the hazardous waste received at the facility does not match the waste designated on the accompanying manifest or shipping paper, then the waste

characterizations must be reviewed and repeated.

A(1)(c) Additional Waste Analysis Requirements

46. Page II. C-6 of Attachment 1 provides very general information of how Dow will comply with the waste analysis requirements. The text simply references the regulatory citations for the information. To ensure completeness and to verify that the facility is in compliance with the referenced information, it is recommended that the Operating License be revised by MDEQ to include the facility-specific information.

A(2)(c) Waste Screening/Fingerprinting

47. Page II. C-8 of Attachment 1 provides very general information regarding the waste screening of the wastes. The Operating License should be revised by MDEQ to clearly indicate the exact parameters and associated methods that may be used for testing. Specifically, discuss how compatibility is measured and ensure that incompatible wastes are not stored or treated together.

48. This section of the Operating License should be revised by MDEQ to clearly include the following information required by Michigan 299.9605 and 40 C.F.R. 264.13(b)(1)-(4):

- The parameters for which each hazardous wastes will be analyzed;
- The rationale for selection (i.e. how analyses of these parameters will provide sufficient information on the waste's properties);
- The test methods which will be used to test for these parameters;
- The sampling method which will be used to obtain representative samples of the waste to be analyzed; and
- The frequency with which the initial analyses will be repeated.

49. The last paragraph of Section A(2)(c) on page II.C-8 states that if wastes shipped from off-site generators do not meet waste characterization requirements then the "waste is isolated and contained and the generator is contacted." MDEQ should revise the Operating Licenses and/or Dow should modify any attachments to ensure that any such wastes that have not been accepted, are kept at the facility generator's for less than 90 days prior to acceptance/rejection.

A(3)(e) Leachates

50. The last sentence of Section A(3)(e) on page II.C-10 of Attachment 1 states that, "Based on F039 constituents in the wastes treated the prior year according to completed GWFCs, a reduced list of constituents is monitored." The attachment should be modified by Dow to clearly identify the list of constituents that are monitored.

A(3)(h) Waste Mixtures and Wastes with Overlapping Requirements

51. As required by 40 C.F.R. 268.7, the Waste Analysis Plan should be revised by Dow to clearly state that wastes that carry more than one characteristic or listed waste code are treated to the most stringent treatment requirements for each hazardous waste constituent

of concern.

ATTACHMENT 2, INSPECTION SCHEDULE

52. The Inspection Plan (Attachment 2 to the Operating License) is inconsistent with Michigan 299.9605 and 40 C.F.R. 264.15. Overall the information provided in the Inspection Schedule and Plan is very general and the equipment identified in the remaining attachments have not been included in the Inspection Schedule. For example, the Inspection Schedule does not address or reference the emergency equipment listed in Attachment 3, The Contingency Plan. The inspection schedule should be revised to specify the types, numbers, and locations of all emergency equipment listed in the Contingency Plan. The Inspection Schedule should be revised to provide the items to be inspected in each of the units to be permitted as required by Michigan 299.9605 and 40 C.F.R. 264.15(b). For example, Attachment 2 of the Operating License should be revised to include the inspection items for Building 33. This unit has been identified in the Operating License and the associated Part A application; however, the inspection requirements have not been included in the Inspection Plan. The Inspection Plan should be revised to identify the types of problems to be checked for each item as well as the frequencies of the inspection. The Plan should also clarify what constitutes acceptance or rejection of each item identified. Attachment 2 of the Operating License should be revised to indicate who is responsible for performing the inspection as well as who is responsible for the inspection reports subsequent to each inspection.

53. The Operating License should be revised by MDEQ to include the schedule for remedy of any items found to be in need of replacement or repair. Ensure that the remedy of any deterioration or malfunction of equipment or structures, which the inspection reveals, is on a schedule to ensure that the problem does not lead to an environmental or human health hazard. Ensure that where a hazard is imminent or has already occurred, remedial action is taken immediately. (Michigan 299.9605 and 40 C.F.R. 264.15)

54. Attachment 2 of the July 1, 2002 revision of the Inspection Plan provides the Inspection Logs for Buildings 703 and 830, but does not include the checklists for any of the other buildings. To ensure completeness, the attachment should be revised by Dow to provide similarly detailed logs for each of the units to be permitted. Ensure that each log identifies the communication, safety, and emergency equipment that are available at each unit that manages hazardous wastes. (Michigan 299.9605 and 40 C.F.R. 264.15

55. The Inspection Schedule does not include a comprehensive list of all equipment and areas to be inspected at the facility. For example the following items have not been addressed:

- The Safety Equipment table does not include the self contained breathing apparatus (SCBA) equipment listed under the Safety and Emergency Equipment section; and
- Inspection of pallets, forklifts, handcarts, piping, all alarms, ramps at the containment building, the diesel backup pump, and rubber flange gaskets have not been identified.

The inspection schedule should be revised to include all equipment and areas identified in

the remaining sections of the Operating License. MDEQ should revise the Operating License to ensure that the Inspection Schedule includes the frequency of inspections of any additional items. (Michigan 299.9605 and 40 C.F.R. 264.15

The Remedial Action for Inspections

56. This section of the Operating License states, "The operators at the facility receive a training period during which supervision outlines appropriate responses for when an inspection shows leaks, breaks, spills, or faulty equipment." MDEQ should clarify the frequency and duration of the training period, and state what are considered appropriate response actions, ensuring that any such training is included in the Personnel Training Section of the Operating License. (Michigan 299.9605 and 40 C.F.R. 264.16)

ATTACHMENT 3, PERSONNEL TRAINING PROGRAM

57. The Personnel Training information should include a brief description on how the training items identified on page II. K-2 will be designed to meet actual job tasks. (Michigan 299.9605 and 40 C.F.R. 264.16)

Organization and Staffing

58. Attachment 3 of the Operating License identifies various job titles at the various hazardous waste management areas; however, no specific personnel information has been provided, which is inconsistent with 40 C.F.R. 264.16. This section of the attachment must include the names, the requisite skills, education, or other qualifications of the employees assigned to each position which involves the handling of hazardous waste as required by 40 C.F.R. 264.16(d). At a minimum, Dow must ensure that all personnel that are identified in the Contingency Plan have been included, and clearly indicate how each person is trained for his/her position. (Michigan 299.9605 and 40 C.F.R. 264.16)

59. It is unclear who is the person responsible for putting together the materials and the required elements to conduct the training. Dow must clearly specify in the job description if either the Activity Coordinator or the Training Coordinator is responsible for preparing the training manual(s) and ensure that the qualifications, education, and skills of the person conducting training has been included in Attachment 3.

Training Content, Frequency and Technique

60. Figure II.K-1 of the Operating License indicates that the training must be completed in six months from the start of employment, and indicates that the length of the training program is approximately one hour. Dow must clarify how one hour is sufficient for new employees to be thoroughly trained on the hazardous waste operations at the facility. Additionally, the on-the-job training for new employees does not provide adequate information on the length of training and the breakdown of time and materials needed to certify an employee as having completed the necessary on-the-job training prior to unsupervised job performance. Accordingly, Dow must provide details as to who will monitor the progress, compliance, documentation, and the completion of the new employee training. (Michigan 299.9605 and 40 C.F.R. 264.16)

61. The Operating License should include the amount of introductory and continuing training for each person in the positions at each of the hazardous waste storage and treatment areas. Figure II.K-1 of Attachment 3 provides the general topics of discussion in the introductory and annual training; however, the application should be expanded to provide the exact information to be covered under each topic. Page II.K-8 of Attachment 3 should include the instruction which teaches facility personnel hazardous waste management procedures (e.g., contingency plan implementation) relevant to the positions in which they are employed. This instruction should be given for each position at each of the Waste Storage areas and the treatment areas. (Michigan 299.9605 and 40 C.F.R. 264.16)

62. The Operating License should identify the elements of the on-the-job training that must be completed and clarify the elements that are covered in the "computer-based States and Federal RCRA Generator modules training call for both salaried and hourly personnel." The Operating License should also clarify who administers the training and how successful completion of these training modules is measured. Overall, Attachment 3 should provide a more detailed explanation of the hazardous waste management training program, including more specific plans for training individuals for their respected positions.

63. Finally, The Operating License should indicate if there is any refresher training for the on-the job-training. Clarify how employees are trained in the event there are with any process changes.

ATTACHMENT 4, CONTINGENCY PLAN

General Information

64. The Contingency Plan has been submitted as Attachment 4 of the Operating License, which is inconsistent with Michigan R299.9607 and 40 C.F.R. Subpart D. The Contingency Plan must be revised to provide sufficient detail on the types and numbers of emergency equipment as required by Michigan R 299.9607 and 40 C.F.R. 264.52(e). According to the Contingency Plan, it appears that the only emergency equipment locations available at the facility are at Building 1100 and the onsite Fire Department; however it is unclear what is available at each of the hazardous waste storage, treatment and management areas. The Contingency Plan should: a) discuss, in detail, the types and numbers of spill and decontamination equipment that will be used in the event of a waste spill or other emergency; b) ensure that sufficient emergency equipment is located at the Incinerator Complex area, especially, during treatment operations; and c) ensure that the fire-fighting and other emergency control equipment are available at the treatment area, especially during a treatment event. Additionally, the Contingency Plan does not provide a discussion of the testing and maintenance procedures of the equipment. Revise the application to include a discussion of how often the equipment is tested and checked to ensure proper function.

65. The General Information and Implementation of the Contingency Plan identifies the units that the Contingency Plan will cover. However, this section should be revised to include 32 Building Container Storage as part of the Incineration Complex.

Implementation of the Contingency Plan

66. Pages 3 and 4 of the Contingency Plan identify "examples of situations which may require" implementation of the Contingency Plan. The Contingency Plan should be revised to also identify the most suitable location at the facility where a command post can be established for any of these emergencies.

Emergency Response Procedures

67. Page 5 of the Contingency Plan discusses the notification procedures that the Facility Emergency Coordinator will take in an emergency, which is inconsistent with Michigan R 299.9607, 40 C.F.R. 264.55 and 264.56. The text should be revised to provide a more detailed description of the plant emergency communication systems; to describe the internal facility communications equipment involved; to describe how the system is activated; and to identify how facility personnel will be made aware of the emergency incident. Additionally, the Contingency Plan should describe how other facility personnel, who may be directly involved in incident control (e.g., spill cleanup team), will be notified.

68. The Operating Licenses should identify criteria under which the state and local emergency response agencies will be contacted during an emergency incident as required by Michigan R 299.9606 and 40 C.F.R. Subpart D. Accordingly, the Contingency Plan should be revised to ensure that arrangements with outside organizations have been established prior to an emergency as required by Michigan 299.9606 and 40 C.F.R. Subpart D

Control Procedures

69. Pages 9 and 10 discuss the control procedures in place in an emergency. This section of the Contingency Plan should be revised to state that following a spill, release, or fire, Dow will notify U.S. EPA, and appropriate local and state authorities, prior to resuming operations in the affected area(s), and that the proper cleanup procedures have been implemented and all emergency equipment is cleaned and fit for re-use. The application does not discuss the methods to decontaminate any of the equipment. The Contingency Plan should describe methods to contain, treat, and document adequate decontamination of an area where a release, fire, or explosion involving hazardous waste has occurred. Specify the solutions used to clean the equipment and how it is determined that the equipment is clean and ready for re-use. Michigan 299.9606 and 40 C.F.R. Subpart D

70. The Contingency Plan should describe the procedures in place for the repair or replacement of containers that may leak. Indicate if overpack containers are used and, if so, how overpack containers are disposed. Michigan 299.9606 and 40 C.F.R. Subpart D

71. The Contingency Plan should describe any procedures for removing or isolating other waste containers, transfer hoses, and other equipment from the area involved in an emergency incident, to prevent fires, explosions, or releases from spreading to other areas of the facility. Michigan 299.9606 and 40 C.F.R. Subpart D

72. The Contingency Plan should describe how the emergency coordinator, prior to off-site disposal of wastes, will provide for the storage of any material that results from a release, fire, or explosion immediately following an emergency. Michigan 299.9606 and 40 C.F.R. Subpart D

73. The Emergency Response Procedures section of the Contingency Plan lacks specific details on how normal operations will be restored. Specifically, the Contingency Plan should describe how Dow will monitor for leaks, pressure buildup, gas generation, or ruptures if operations at the facility are stopped in response to a fire, release, or explosion. The Contingency Plan should identify the units that may undergo emergency shut-down and describe the potential for leaks, pressure buildup, gas generation, or ruptures to occur at each unit that may be shut-down. Michigan 299.9606 and 40 C.F.R. Subpart D

74. The Emergency Response Procedures section should include internal contacts' telephone numbers. For example, it is unclear if the Midland City Water Department telephone number is the same for normal business hours and nights/weekends as listed. Michigan 299.9606 and 40 C.F.R. Subpart D

75. The Emergency Response Procedures section should clarify what materials will be used and how to control or contain a spill based on the waste being generated, stored, or treated at the facility. The Emergency Response Procedures should describe how the emergency coordinator, prior to off-site disposal of wastes, will provide for the storage, of any material that results from a release, fire, or explosion immediately following an emergency. The Emergency Response Procedures should describe methods to contain, treat, and document adequate decontamination of an area where a release, fire, or explosion involving hazardous waste has occurred. Michigan 299.9606 and 40 C.F.R. Subpart D

76. The Emergency Response Procedures section also states ". . . the repaired portion will be re-certified by a qualified engineer as meeting the approved specifications in the facility permit." The Emergency Response Procedures should clarify if this re-certification will be performed internally by a qualified Dow engineer or through an outside service that would provide a qualified engineer. Michigan 299.9606 and 40 C.F.R. Subpart D

Emergency Equipment and Maintenance

77. Page 13 of the Contingency Plan should be revised to provide a more detailed discussion of how post emergency equipment is cleaned and maintained. For example, item 2.b. on page 13 states that, "All hand tools, pumps, hose and other small equipment have been rinsed clean with a suitable solvent or other cleanser." This information should be expanded to clearly discuss the "suitable solvent" and other "cleanser" that is used to clean the equipment. Indicate how the equipment is certified to be cleaned. The Contingency Plan should be revised to identify individuals responsible for maintaining emergency equipment. Michigan 299.9606 and 40 C.F.R. Subpart D

Coordination Agreements

78. Page 15 of Attachment 4 identifies several organizations which receive copies of the facility's Contingency Plan. Documentation of any refusals to enter into coordination agreements should also be included. Michigan 299.9606 and 40 C.F.R. Subpart D

Evacuation Plans

79. The map submitted to outline the Dow Facility's evacuation routes is very difficult to read. Only the building numbers have been marked. However, the assembly points and actual routes are not readable in the diagram provided. Due to the many hazardous waste management areas, it is recommended that, for each building, Dow provide a separate evacuation route map is provided to clearly mark each building, each assembly point, the routes to be taken, and any alternate routes that are identified. Michigan 299.9606 and 40 C.F.R. Subpart D

Appendix 1 to Attachment 4

80. The Emergency Equipment and Maintenance list provided in Appendix 1 of Attachment 4 does not include the siren and telephone system and safety showers/eyewashes equipment. To ensure consistency and completeness, Dow should revise the information provided in the appendix to include this information. Michigan 299.9606 and 40 C.F.R. Subpart D

ATTACHMENT 5, CLOSURE PLAN

General

81. The Closure Plan provided in Attachment 5 of the Operating License repeatedly states that at the time of closure, plans will be submitted for approval, which is inconsistent with Michigan R 299.9613 and 40 C.F.R. 264.112 and 40 C.F.R. 270.32. The closure plan must be submitted with the permit application and the approved closure plan must be a condition of any RCRA permit under 40 C.F.R. § 264.112. Such information may be modified through an approval with the state at the time of closure; however, the detailed complete Closure Plan, including all cleanup criteria, should be included with the Operating License.

82. The Closure Plan is inconsistent with Michigan R 299.9613 and 40 C.F.R. 264.112(b)(1) because it provides a very generic outline, but does not include a specific detailed description of how each hazardous waste management unit at the facility will be closed. The Closure Plan should be revised to identify the specific closure of each of the identified units for permitting. For example, it is unclear if the facility plans to perform clean closure on Waste Storage Area I and Waste Storage Area II.. The Closure Plan should indicate the closure criteria that will be used for closure of each unit. If "clean closure" of the facility is to be performed, then the Closure Plan must be revised to address, in detail, how clean closure will be achieved.

- The Closure Plan should include a listing of the exposure limits–to be used as standards at the time of closure for assessing whether or not removal and decontamination activities are complete--for all hazardous constituents that may have been treated at the unit;
- To demonstrate clean closure, the soils and groundwater surrounding the unit should be tested to document that the contaminants left in the subsoils will not impact the groundwater, surface water, or atmosphere in excess of the exposure limits that are to be specified in the closure plan; and,
- For surface impoundments and waste piles units to be clean closed, the facility must also include a contingent closure plan in case not all contaminated subsoils or

structures can be removed at closure. (Michigan R299.9616 and 40 C.F.R. 264.228)

The Operating License includes only a Post-Closure Plan for the Tertiary Pond; however a Post-Closure Plan for each unit should be included as required by Michigan R 299.9613 and 40 C.F.R. 264.118(a))

Closure Performance Standard

83. The Closure Plan appears to be written with reference to closure activities of the Tertiary Pond (Building 1163), Waste Storage Area I (Building 29), and Waste Storage Area II (Buildings 33 and 830). The Closure Plan does not include a complete discussion of the closures planned for the Liquid Waste Tank Farm at Incinerator Complex and Building 703. Dow should revise the attachment accordingly. (Michigan R 299.9613 and 40 C.F.R. Subpart G).

Partial and Final Closure Activities

84. Attachment 2 of the Operating License does not provide detail on the sampling and analysis methods for the soil that will be removed from around the units. Dow should detail how the excavated soil will be stored and ensure that all soils are stored on site for less than 90 days prior to offsite shipment to a permitted hazardous waste facility. Dow should indicate whether any background samples will be taken. If so, the Closure Plan should provide a detailed discussion of the proposed background sampling locations. Dow should propose and justify all background sampling locations, depths, and procedures. The discussion of the analytical and sampling methods to be used for closure must be expanded to include more detailed information. Dow should ensure that the most recent U.S. EPA approved methods are used and provide a thorough discussion of the sampling and analytical techniques, including background samples, for each of the units, including any wastewaters collected from decontamination activities. (Michigan R 299.9613 and 40 C.F.R. Subpart G).

85. The Closure Plan must be revised by Dow to identify the hazardous constituents and analytical methods to be used for the closure of the facility. Dow should provide the exact test method number to be used for the procedure, as well as the associated method for the analysis of each parameter listed and ensure that all methods identified in the Closure Plan are the most current. (Michigan R 299.9613 and 40 C.F.R. Subpart G).

86. Dow should be required to demonstrate that any hazardous constituents (i.e., Part 261 Appendix VIII) left at the unit will not impact any environmental media in excess of Agency-established exposure levels and that direct contact will not pose a threat to human health and the environment. (Michigan R 299.9613 and 40 C.F.R. Subpart G).

87. Table II. L-8 on page II. L-29 of the Operating License identifies the maximum waste inventories at the time of closure. The following discrepancies should be addressed:

- This table indicates a total of 800,000 gallons of wastes for the Tertiary Pond. However, according to the Part A application, the total capacity for the pond is 783,000 gallons;

- Table II L-8 indicates that the Waste Storage Area II holds a total of 1,000,000 gallons of liquid waste, and 5,000 cubic yards of bulk waste. However, Part IV of the Operating License indicates that there is a total storage capacity of 1,000,000 total gallons in both the east and west tanks (Waste storage Area IIB) and 1,740 cubic yards in Waste Storage Area IIA; and
- The amount specified for Building 1163 is 1,800 cubic yards, however, the Part A indicates that the unit has a storage capacity of 3,245 cubic yards.

Dow should clarify these discrepancies and ensure that the information provided in the Part A and the Operating License are consistent.

88. The Closure Plan does not indicate the maximum inventory of the treatment units. Dow should describe how, at closure, all hazardous waste and hazardous waste residues will be removed from the incinerator, associated ductwork, piping, air pollution control equipment sumps and any other structures or operating equipment that have come in contact with the hazardous waste. Alternatively, Dow should discuss how the incinerator and associated units and equipment will be dismantled and disposed of as a hazardous waste. (Michigan R 299.9613 and 40 C.F.R. Subpart G).

ATTACHMENT 6, POST CLOSURE PLAN

89. The information provided in the Post-Closure plan for the Tertiary Pond is very general. Specifically, Dow should revise the Post-Closure Plan to include the following:

- Identification and location of the person responsible for storing and updating the facility copy of the post-closure plan during the post-closure period;
- Specific procedures for updating all other post-closure plans, including procedures to cover changes in operating plans, facility design, expected years of closure and other events; and
- A Discussion of the security in place during post closure, demonstrating that for the Tertiary Pond, post-closure use is never be allowed to disturb the components of the containment system, or the function of the facility's monitoring system.

(Michigan R 299.9613 and 40 C.F.R. Subpart G).

ATTACHMENT 9, SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE WASTES AND INCOMPATIBLE WASTES AND MATERIALS.

General Hazard Prevention

90. As required by Michigan R 299.9605 and 40 C.F.R. 264.17, the attachment should be revised by Dow to include the documentation of compliance that wastes are protected from sources of ignitions or reactions. Such documentation to meet this requirement may be based on references to published scientific or engineering literature, data from trial tests, wastes analysis, or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions.

91. Page II.H-8 indicates the aisle space requirements for container storage areas. However, the aisle space requirements for the other units have not been addressed. Unless Dow can demonstrate that aisle space is not needed, in case of an emergency, the Operating License

must be revised by MDEQ to ensure that the proper aisle space is maintained at each hazardous waste management unit, to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment of any area of the facility operation in an emergency. Michigan R 299.9605 and 40 C.F.R. 264.17

92. Dow should provide a more detailed discussion of the unloading operations that will take place at the facility, specifically at the container storage areas and the tankfarm. Dow should describe the design, materials of construction, and associated equipment at each of the unloading areas. Dow should provide a more detailed description of the procedures that will be followed to ensure safe off-loading of hazardous wastes. Dow should indicate how many tank trucks may be off-loaded at one time and compare this with the available secondary capacity. Dow should provide a more detailed procedure, including a description of the piping system, feed cut-off controls, pumps, etc. Dow should ensure that the wastes are unloaded in a safe location and managed properly for treatment. Michigan R 299.9605 and 40 C.F.R. 264.17

93. The discussion of the unloading operations for wastes to be treated by incineration should be expanded. Specifically, Dow should indicate if wastes are treated immediately upon unloading or if they are "held" for any length of time prior to treatment. If wastes are held, Dow should indicate how long wastes are stored prior to going to the treatment unit. Dow should revise the application to include specific loading/unloading information regarding the wastes treated at the Incinerator Complex as well as stored in the tanks and Container Storage Areas. Dow should ensure that all loading/unloading for each of the units are inspected at regular intervals and included in the inspection schedule. Michigan R 299.9605 and 40 C.F.R. 264.17

Procedures to Prevent Accidental Ignition of Waste:

94. Page II.H-3 states that "no smoking is permitted within the facility fence line." The Operating License should be revised by MDEQ to ensure that "No Smoking" signs are conspicuously placed. Additionally, revise the text of the attachment to include precautions to prevent conditions which:

- Generate extreme heat or pressure, fire or explosions, or violent reactions;
- Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment; and
- Damage the structural integrity of the device or facility.

Michigan R 299.9605 and 40 C.F.R. 264.17

95. Dow should revise its application to include the documentation of compliance that wastes are protected from sources of ignitions or reactions. To meet this requirement, such documentation may be based on references to published scientific or engineering literature, data from trial tests, wastes analysis or the results of the treatment of similar wastes by similar treatment processes and under similar operating conditions. Michigan R 299.9605 and 40 C.F.R. 264.17

Power and Equipment Failure:

96. For each of waste storage and treatment areas, it is unclear what the backup system to the alarms are. Dow should indicate whether there is a battery backup alarm to the alarm systems that are used at the facility, in case of a power outage.

97. Dow should provide sketches, drawings, or data demonstrating that the tank of ignitable wastes is located at least 20 feet from the facility's property line. Additionally, the Operating License should include sketches, drawings, or data demonstrating that containers of ignitable wastes are located at least 50 feet from the facility's property line. Michigan R 299.9615 and 40 C.F.R. 264.176

98. Dow should revise the Attachment to provide documentation of arrangements to familiarize police, fire departments, and emergency response teams with a layout of the facility, properties of the hazardous waste handled at the facility and associated hazards, places where facility personnel will be working, entrance to and the roads inside the facility and the possible evacuation routes. Dow should revise the application to provide documentation of arrangements to familiarize local hospitals with the properties of the hazardous waste handled at the facility and the types of injuries or illnesses which could result from fires, explosions or releases at the facility. Michigan R 299.9605 and 40 C.F.R. 264.17

ATTACHMENT 10, TANK SYSTEM DRAWINGS

99. Tank system drawings in Attachment 10 detail the proposed placement and sloping of soil in Waste Storage Area IIA. As shown on Sketch Number 6, waste can be placed across the floor of the entire unit, including on the access ramp into and out of the unit. To allow for safe operation of dump trucks and front end loading equipment in Waste Storage Area IIA, the license and attachments should be revised to indicate that the entire access ramp and immediately adjacent areas must be kept clear. Based on specifications presented in Sketch Number 4 of Attachment 10, this would call for placement of contaminated soil no closer than 25 feet from the southeastern wall of the unit. Michigan R 299.9615 and 40 C.F.R. Subpart J.

100. Condition IV.A.1 of the license references several drawings of the 29 Building tank system (e.g., B2-001964136, B2-002-964136, and B2-101-964136) in Attachment 10. However, none of the three figures has been included in the attachment and, consequently, details and specifications for this system could not be verified or assessed. The cited reference drawings must be added to Attachment 10 to the license. Michigan R 299.9615 and 40 C.F.R. Subpart J.

ATTACHMENT 11, TANK SYSTEM PROCESS INFORMATION, INCLUDING SPILL AND OVERFILL PREVENTION PROCEDURES

101. Page VII-6 of Attachment 11 indicates that the tanks in Waste Storage Area IIB have no lining, protective coating, or other corrosion protection systems. However, the tank design and certification information in Appendix C to this Attachment notes that the east tank (Tank 8-V-121) is equipped with an internal epoxy liner, an exterior coating of primer and finish paint, and sacrificial anodes. The appendix also cites an expected 10-year service life for the corrosion protection measures. Attachment 11 must be clarified as to whether the documented corrosion protection measures remain in place at this time, or if they are

no longer effective and must be replaced prior to bringing the waste tanks back into service. In the latter case, the requirement to replace such corrosion protection systems before resuming waste storage operations should be formalized in the operating license. The license should also specifically note that any other deficiencies in the Waste Storage Area IIB tanks or secondary containment system which have not been identified in Attachment 11, but are nevertheless known or discovered during pre-operation inspections, should be rectified and inspected prior to bringing the tank system back into service. Michigan R 299.9615 and 40 C.F.R. Subpart J.

ATTACHMENT 20, CLOSED UNITS DRAWINGS

102. Drawings provided in this attachment should be revised by Dow to clearly identify the diversion basin, each former open conduit, and the sludge water facility by name. Maps included in Section XVII of the reapplication package have been appropriately labeled and are recommended replacements for the current figures.

ATTACHMENT 24, GROUNDWATER MONITORING PROGRAM SAMPLING AND ANALYSIS PLAN

Analytical Procedures

103. The first paragraph of this section states that "The Analytical Laboratories at DOW." From this statement it appears that there are several Dow laboratories at the facility. Dow should identify the number of laboratories and clarify if all of the laboratories are able to perform all of the analyses that are required at any given time. Dow should indicate how the wastes are transported to the laboratories for analyses. Dow should clarify if these laboratories are on site and if so, indicate how long wastes are stored at the laboratories for analyses. Dow should ensure that any wastes stored at any on-site laboratories for greater than 90 days have a hazardous waste permit.

104. The last paragraph of the first page states that, "If it is necessary to have an outside laboratory do any analytical work, they will be instructed to follow U.S. EPA approved methodology." It is unclear what "outside laboratory" maybe used for this situation. The text should be revised to address the following:

- When an outside laboratory will be used for each specific analyses;
- Who will make the determination that the DOW laboratory cannot be used for the analyses; and
- Ensure that any laboratory chosen is able to meet the target detection limits identified in Appendix B of Attachment 24.

(Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

Quality Control

105. The table in this section states that for volatiles analyses, a trip blank will be analyzed "one for each sample set." Revise the text to define a sample set for each set of blanks that are identified in the table. Note that a trip blank is analyzed for a minimum of every 20 samples.

Appendix B, Chemical Constituent, Analytical Method, and Target Detection Limit List

106. The footnote definitions for the asterisk symbols in the table state that some compounds are not "in Operational Memo Gen-8." Clarify what this memo is and indicate why certain compounds are excluded from the list. At a minimum for groundwater monitoring, the parameters identified in 40 C.F.R. Appendix IX Part 264 must be analyzed. Exclusion of any compounds from this list must be justified. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

Table III: Metals

107. For silver, the target detection limit for Method 7761 is listed as "0.5+." The table does not define what the "+" is meant to indicate. The Operating License must be clarified and provide this information.

Table IV: Anions

108. This table identifies method "9030" for the analysis of sulfide. Dow should ensure that the most recent revisions to SW-846 will be used and modify the table to reference method "9030B."

Table V: Other Constituents

109. Table V indicates that for the pesticide/PCB parameters SW-846 method "8081" will be used. Dow should revise the table to indicate that the most recent version SW-846 Method "8081A" will be used for the analysis of these parameters.

Appendix C, Dow Environmental Laboratory Quality Assurance Program

110. Page 2 of Appendix A of Attachment 24 states that "A complete description of the quality assurance and quality control policies and procedures followed by the laboratory is provided in Appendix C to the SOP." However, the information provided in Appendix C is very generic and does not provide the level of detail necessary for a laboratory to understand and fulfill the QA/QC objectives required for a sampling and analysis event. Overall, the DOW Quality Assurance Program (QAP) document is very general and does not provide sufficiently detailed information. For example, Section 3.0 of the document states that, "For non-standard field information which is not found in the method work instructions or SOP should be documented." Then Section 4.0 has been provided to discuss the "work instructions and SOPs." However this section provides very general statements such as, "Work instructions or SOPs are documents which will require modifications or be discontinued due to matrix, instrument and method changes. In order to assure ourselves that the proper work instructions or SOPs is being used, each document will have an effective date printed on them." Dow should revise the document to include the most recent versions of the "work instructions or SOPs". The entire QAP should be modified to be more specific to the current sampling and analytical requirements for the parameters specified in the wastes of the Operating License.

111. Overall, the QAP is lacking many sections of information. Specifically, the following

should be addressed in the QAP:

- Quality assurance objectives and criteria for data measurement;
- Special training requirements/certifications;
- Specifics on the measurement/data acquisition which should include
  - Sampling design process
  - Sampling method requirements
  - Sample handling and custody requirements
  - Instrument /equipment testing, inspection, and maintenance requirements, including corrective actions
  - Instrument calibration and frequency
  - Inspection/acceptance requirements for supplies and consumables
  - Data Acquisition requirements
  - Data management;
- The number and types of reports to management;
- Data validation and usability, including but not limited to the following types of information;
  - Data review, validation and verification methods and requirements
  - Reconciliation with data quality objectives; and
- Any checklists and reference specific guidance that is used for fulfilling all QA/QC objectives.

Section 1.0, Introduction

112. Dow should ensure that all "internal and external laboratories" who perform analyses for Dow are provided with a copy of the QAP document.

113. The QAP states that, "An organizational chart has not been included in this document since experience has shown that a current organization chart cannot be maintained." Dow should clarify this statement. It is understood that the names of the people may change but is unclear why the line of authority is subject to change (i.e., the key job titles). Dow should revise the QAP to provide an organizational chart which identifies the lines of authority and key job titles which have QA/QC authority. Dow should specifically indicate who or what job title is responsible for ensuring that the appropriate corrective action procedures are taken and documented.

Section 2.0, Quality Assurance

114. Subsection 2.2 of this section states that, "Data quality assurance will be documented through a periodic reporting of pertinent QA/QC review information to management." Dow should revise the text to indicate how often these reports will be issued.

Section 3.0, Quality Control

115. This section of the QAP references "work instructions or SOP." Dow should provide any such examples of work instructions or SOPs within the attachment.

Section 5.0, Reporting of Data

116. Section 5.1 states that, "Data will be reduced according to established laboratory procedures." Dow should ensure that all data will be reduced according to the analytical methods and the established laboratory procedures that will be used for the analyses.

117. Section 5.4 of the QAP states that, "Each report must be peer reviewed." Dow should identify the personnel responsible for performing the peer review.

118. Section 5.6 states that the QA/QC person will "periodically do a random QA/QC check of data packets and report the results of the review to the laboratory supervisor." Dow should clarify what the "random check " will encompass and indicate how often such checks are done. Dow should clarify if a checklist of items is identified for the QA/QC check and indicate how often the results of these checks are reported to the laboratory supervisor.

Section 6.0, Personnel Records

119. Dow should clarify how long the personnel records are maintained on file.

ATTACHMENT 25, ENVIRONMENTAL MONITORING TABLES AND FIGURES

120. This attachment should be expanded to document background concentrations already established for any of the WMUs or AOCs to be monitored pursuant to Part X of the draft license. Dow should provide such detail at least for those areas at which chemical groundwater monitoring has been ongoing. In addition, it is recommended that this attachment highlight those environmental standards to be used in evaluating ongoing monitoring data or investigation results at the site and adjacent off-site areas of concern. Formalization of these standards in the license will allow for a clear understanding of environmental compliance and corrective action goals both on- and off-site.(Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

121. This attachment should be expanded to include recent water level contour maps for the regional aquifer. The maps should clearly identify the date of data used to generate the contour lines, and should provide a clear indication of horizontal flow direction in the deep aquifer across the site and where known in off-site areas. The maps should then be evaluated to verify that the deep groundwater is being adequately monitored and that no additional monitoring locations are warranted. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

122. According to draft License Condition X.B.12, Figure XVIII-9 presents the location of wells and piezometers included in the Sludge Dewatering Facility hydraulic monitoring program. Although the specified wells are shown, the figure must be modified to also show both existing and planned piezometer locations in this portion of the facility.

123. The center diamond under the Manual Hydraulics Readings column on Figure V-4 should be revised by Dow to reference those piezometers listed in Table V-4, rather than Table V-1.

ATTACHMENT 26, AMBIENT AIR MONITORING PROGRAM

Section 1.0 Overview of Work Plan

124. The last paragraph of this section identifies the eleven compounds to be monitored and states that the selection of these parameters is based on the criteria outlined in Appendix A. However Appendix A, Section A.6 identifies 13 parameters. Dow should clarify why toluene, which has been identified in Appendix A, is not included in Section 1.0. Also, Appendix A, Section A.6 includes vinyl chloride as a parameter for the monitoring. However, Section A.7 identifies constituents which were considered as rejected due to "insufficient justification to include them" in the ambient air monitoring program. In this list, vinyl chloride is listed. Dow should clarify these discrepancies and include one comprehensive list of parameters for the ambient air monitoring program.

125. The cover page to Figure 5.1 has been included, however the actual figure with the ambient air sample collection sites has not been included. Dow should revise the attachment to include this figure.

Appendix C, Environmental Monitoring Method for the Determination of Arsenic, Cadmium, and Chromium Associated with Particulate Matter in Ambient Air

126. The last paragraph of this section states that, "For metals analysis, approved "SOPs" will be used." However, these SOPs have not been included for review. Dow should provide these SOPs in the attachments.

ATTACHMENT 28, COMPLIANCE SCHEDULE

127. The compliance activity schedule presented in Attachment 28 stipulates proposed priorities, tasks durations, and deadlines for investigation and corrective action at the Dow facility and adjacent off-site impacts. Designation of high, medium, and low priorities for the various WMUs and AOCs appears to be appropriate based on the limited amount of information provided in Section XVI.C of the reapplication package. However, the number of work days allocated for many of the WMU-specific tasks appears excessive. For example, given the fact that investigation and corrective action efforts have already been implemented with regard to many of the WMUs and that only follow-on efforts or program modifications will be required, many of the time frames specified for scoping and preparing a work outline for submittal to the MDEQ are unreasonable. Furthermore, Dow should investigate the possibilities for streamlining the corrective action planning processes so that key activities can be implemented more expeditiously (especially with regard to the highest priority issues). Delaying implementation of groundwater monitoring along the northeast site perimeter (ranked as High Priority 2) and surface water monitoring (ranked as High Priority 3) for 270 and 478 days, respectively, is unacceptable. The entire schedule should be reviewed and streamlined as much as possible. Where significant improvements cannot be made to the schedule, Dow should provide specific details on and anticipated durations of required subtasks that cannot be reduced or conducted concurrently, justification for the continuing delays in corrective action implementation, and an assessment of potential impacts of such delays on environmental quality and contaminant migration at the site and affected off-site areas. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

128. In addition to presenting proposed schedules for investigation and corrective action, this attachment should detail timing of environmental monitoring activities. Specifically, for each WMU being monitored, the attachment should indicate when sampling events are to be conducted (i.e., general time frames for upcoming sampling events repeatedly quarterly, annually, and every four years). This will ensure that the monitoring requirements are completed as outlined in the draft license, and will allow for timely allocation of resources needed for sampling, surveying, laboratory analysis, and regulatory agency review. (Michigan R 299.9611, R 299.9612 and 40 C.F.R. Subpart F)

C. CLARIFICATIONS AND TYPOS

129. The Operating License should be substantially improved by incorporating additional figures and background detail into the Environmental Monitoring and Corrective Action sections or associated attachments. A comprehensive site map should be added to the draft Permit highlighting all areas subject to the proposed environmental monitoring and corrective action requirements on or in the vicinity of the Dow site to allow for an evaluation of possible interactions between different waste management units (WMUs) and areas of concern (AOCs). This kind of assessment will facilitate identification of gaps or overlaps in the license's proposed monitoring and corrective action programs. Inclusion of specific details on the nature of known environmental impacts and figures showing the extent of those impacts would allow for a much more in-depth review of proposed monitoring and corrective action requirements for technical adequacy. These details would also serve as a point of comparison for information collected by the facility over time as required pursuant to the draft license. Inclusion of detail on background constituent concentrations and standards to be applied in determining the need for continued environmental monitoring or corrective action would allow for a review of the technical goals of and priorities for environmental activity at the site and adjacent off-site areas.

Part IV, Tank System Storage and Treatment Conditions

A. Coverage of License

130. According to Condition IV.A.1 of the Operating License, Waste Storage Area IIA has a storage capacity of 1,740 cubic yards. This volume appears to reflect design capacity of the two steel tanks formerly located in this unit. The steel tanks were demolished in 1988 and 1989, and the unit has been reconfigured for management of contaminated soil generated during construction to upgrade the Revetment Groundwater Intercept System (RGIS). As indicated in Attachments 10 (Sketch Number 6) and 11 (page VII.5), the modified design capacity of Waste Storage Area IIA is 5,000 cubic yards. This discrepancy needs to be resolved.

131. The table on page 19 of the Operating License states that the storage capacity for Building 1163 is 1800 cubic yards or 360,000 gallons. However Dow's July 2002 Part A Application indicates that the storage capacity for Building 1163 is to be 655,500 gallons or 3245 cubic yards. This discrepancy needs to be resolved.

Part III. B. Waste Identification and Quantity

132. The bottom of page 20 of the Operating License states that the facility "may store no more than a total volume of 2,451,000 gallons" of "hazardous wastes in the tank systems identified in Condition IV.A.1" of the Operating License. However, Condition IV.A.1 indicates a total storage design capacity of 2,014,000 gallons. This discrepancy needs to be resolved.

Part V, Incinerator Container Storage Conditions

B. Waste Identification and Quantity

133. The table on page 24, under Section A of the of the Operating License, identifies all of the incinerator container storage areas as well as capacities that are to be covered by the Operating License. Item 3 in Section B, page 26, states that "no more than a total volume of 63,000 gallons of the hazardous wastes" can be stored in the nine Tanker Trucks at the identified Unloading Spots. Section B.3 identifies Unloading Spot "LS-2090." However, this Unloading Spot has not been identified in Section V Table A of the Operating License. MDEQ must clarify this discrepancy and ensure that the Operating Permit identifies and references the correct container storage areas. Table A should be revised to include this Unloading Spot and the associated storage design capacity.

134. Item 6 in Section V.B , on page 26 of the Operating License, indicates that the facility shall ensure that the "total combined volume of hazardous wastes stored in all the Unloading Spots does not exceed the 112,750 gallons Unloading Spot hazardous waste storage capacity specified in Condition V.A.3, above, at any give time." However, since Unloading Spot "LS-2090" was not identified in Condition V.A., the total capacity from the table is 105,750 gallons.

135. It is unclear whether liquids will be stored in the containers. The Operating License should be revised to clarify this and, if so, indicate whether the containers are tested for the presence of free liquids. Revise the application to provide the test method used to test for the presence of free liquids in the containers.