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March 16, 2000

Patrick Corser
Montgomery Watson
P.O. Box 774018
Steamboat Springs, Colorado 80477

**RE: COMMENTS: DRAFT VADOSE ZONE MONITORING SYSTEM WORK
PLAN, DATED FEBRUARY 11, 2000
TRIASSIC PARK WASTE DISPOSAL FACILITY**

Dear Mr. Corser:

The New Mexico Environment Department (NMED) Hazardous and Radioactive Materials Bureau (HRMB) has completed its review of the above referenced work plan (WP). HRMB's comments are attached.

HRMB feels that an appropriate response to these comments would include a revised WP in both redline/strikeout and final, clean versions, plus a separate explanation of the response to each comment.

If you have any questions regarding these comments, please contact Steve Pullen of the HRMB at (505) 827-1558 ext. 1020.

Sincerely,

Stephanie Kruse, Supervisor
Triassic Park Project

- cc: James Bearzi, NMED/HRMB
- Steve Pullen, NMED/HRMB
- Dale Gandy, GMI
- David Neleigh, EPA
- David Ellerbroek, MW

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NMED Comments
March 2000

Draft Vadose Zone Monitoring System (VZMS) Work Plan (WP)
Triassic Park Waste Disposal Facility

The New Mexico Environment Department (NMED) provides the following general and specific comments regarding the VZMS WP. NMED's goal in creating these comments is to work together with Gandy Marley, Incorporated (GMI) to create a complete VZMS Work Plan that can be attached to the Permit Application and does not overly rely on referencing other portions of the Application. NMED believes that application language that is complete and appropriate would both allow the permit to simply reference the application as well as preclude having to write permit language that contradicts the WP.

Vadose zone monitoring is not specifically required in New Mexico's Hazardous Waste Regulations, and thus there are few regulatory citations in these comments. The omnibus provisions of the Hazardous Waste Regulations, specified at 20 NMAC 4.1 at 40 CFR 270.32(b)(2), gives the NMED's Secretary the authority to require permit terms and conditions deemed necessary to protect human health and the environment. It is this section of the regulations that forms the regulatory basis for most of these comments. The NMED considers appropriate vadose zone monitoring a condition of NMED's waiver of groundwater monitoring.

Unless otherwise stated, all references to the Permit Application are to the November 1999 version.

General Comments:

1. The WP, or an associated cover letter, must clarify how the WP will be incorporated into the Permit Application. Verbal communication between HRMB and Montgomery Watson (MW) suggests that the WP will be an attachment to Section 3.

2. The WP suggests that groundwater might be encountered during construction of the VZMS. In fact, the WP goes so far as to provide a section on Well Development (Section 2.2.2). NMED is concerned that the WP does not recognize the significance of identifying existing groundwater at the site during construction (i.e., there is no commitment to notify NMED if groundwater is encountered). NMED requires that the WP, or some other appropriate part of the application, specify that NMED would be notified immediately if groundwater is identified during any stage of construction. Approval of both the groundwater monitoring waiver request and the vadose zone monitoring system work plan is based on the premise that unsaturated conditions currently exist in the lithologies surrounding the proposed waste management units.

3. The WP must include a more detailed conceptual site model (CSM) explaining and justifying the VZMS. The WP failed to appropriately discuss fluid transport pathways, hydraulic barriers, and waters encountered during site characterization. The CSM must detail the potential fluid transport pathways through the Upper Dockum strata, starting by including the Geologic Cross-Section (Figure 3-12) from the Application, Volume I (revised Nov. 1998). This cross-section illustrates the multiple siltstone and silty sandstone strata that potentially transmit fluid laterally. It also illustrates the stratigraphic contacts between the Upper Dockum-Quaternary alluvium and Upper Dockum-Lower Dockum units that are interpreted to be hydraulic barriers. All these features constitute a principal focus of this VZMS. The cross-section also provides the rationale for extended well screen lengths mentioned later in these comments.

The CSM must also include the Structure Contour map (Figure 3-6) from the Groundwater Monitoring Final Waiver Request, dated January 24, 2000. The map illustrates the stratigraphic contact between the Upper and Lower Dockum that is targeted for monitoring. This map should be used to explain the positioning of the wells east of the waste management units. This map will also provide the justification for a required additional well mentioned later in the comments.

Another significant issue that should be addressed in the CSM is the influence of the alluvial material on possible fluid migration. Fluids were encountered in Drill Hole PB-39 within the alluvial materials, as reported in the Final Report for 1999 Stratigraphic and Groundwater Characterization Program. These fluids were discovered at the contact of the alluvial material-Upper Dockum and are the basis for NMED's requirement for shallow monitoring wells referenced later in these comments.

MW verbally indicated that all the alluvial material will be removed from the site during facility construction. If this is the case it must be stated in the CMS.

4. The WP fails to address how GMI will respond if fluids appear in the VZMS. This deficiency includes the appearance of both contaminated and non-contaminated fluids. In essence, the WP proposes that if fluids are detected in the VZMS, GMI will initially sample to determine whether contamination exists, then to do no additional action if the fluids are not contaminated, or to initiate "detection monitoring" if contamination is detected. Both of these response actions are inadequate.

NMED recognizes that other portions of the application might be used to address the situation of fluids appearing in the VZMS, including the Contingency Plan and/or the Corrective Action Plan and/or the Response Action Plan (RAP). However, using these other sections would negate the goal of making the VZMS a stand-alone document.

Section 10.0 (Corrective Action), revised January 7, 2000, is also deficient in stipulating how GMI would respond if a release is detected. NMED's additional comments to Section 10 will be provided in a separate correspondence.

Section 6.0 (Contingency Plan), Subsection 6.3.5.2 (Spills, Leaks or Other Releases Control Procedures), currently addresses hazards at the surface and is not relevant to the response actions associated with the VZMS.

The Response Action Plan (RAP) in Section 2.6.4.8 only addresses what happens when the Action Leakage Rate (ALR) is exceeded, or, in other words, what happens when the primary liner fails.

At a minimum the WP must reiterate the following commitments in the RAP if fluids escape the secondary liner and enter the VZMS:

- NMED notification commitments;
- an investigation into the source of the fluids;
- the commitment to remove all fluids;
- a commitment to assess operations to determine whether waste receipt should be curtailed or whether wastes should be removed for liner inspection;
- a commitment to repair the liner or other equipment deemed the source of the fluids;
- a commitment to document all response actions in the facility operating record;
- a commitment to have an independent New Mexico Professional Engineer assess the response action; and,
- additional reporting requirements as appropriate.

NMED believes that if wastes exit the waste management unit and enter the VZMS, either the application or the permit should stipulate that waste receipt will be curtailed until the source is identified and remediated.

5. NMED finds the coverage of the VZMS in the application confusing due to references scattered throughout the application with no cross-referencing. Examples include Section's 2.5.1.5 (Landfill/Design/VZMS) reference to the VZMS and sump detail in Volume III, yet no reference to this in the WP. Volume III, Section 3, Table 1 identifies the type of pump to be used for vadose zone monitoring, and again there is no reference to this in the WP. NMED considers monitoring commitments one of the more critical aspects of a hazardous waste management permit application and worthy of a complete description that relies less on other sections of an application, or at a minimum references those sections more completely. Please discuss and specify whether existing portions of the application, such as Section 2 (Treatment, Storage and Disposal) and Section 8 (Closure and Post-closure), will be altered to reference and coincide with this WP.

6. The WP must more thoroughly address reporting, scheduling, operation, maintenance, inspection and record keeping commitments. These commitments must at a minimum comply with requirements at 40 CFR 270.30. and 270.31. These issues as they relate to the VZMS may be addressed elsewhere in the application, but those locations must be referenced and those referenced locations must refer back to the VZMS WP.

Reporting issues related to the VZMS that must be addressed include how often regularly scheduled reports will be submitted and who the reports will be submitted to. Regularly

scheduled reports must include at a minimum:

- VZMS inspection and maintenance results;
- fluid detections in all monitoring points;
- well depth measurements; and,
- volumes of fluids removed from all monitoring points, including all LCRSs and LDRSs, particularly if the ALR is exceeded.

Additional reporting commitments should fluids be detected:

- notification of NMED verbally within 24 hours of fluids appearance in a monitoring point;
- monitoring results from the sumps and wells (volumes and analytical results);
- a comparison to the baseline for the non-waste management units fluid sources;
- analytical results for all fluids;
- a written assessment to NMED within fourteen days of the determination as to the amount and source of the liquids; information on possible size, location and cause of the leak, an assessment of the seriousness of any leak in terms of potentials of releases to the environment; and any immediate short or long term actions to be taken;
- a report to NMED within 30 days of fluid appearance in the VZMS describing the effectiveness of the response actions; and,
- monthly reports to NMED as long as the fluid is present in the VZMS.

Scheduling issues associated with the VZMS that must be addressed include, but are not limited to:

- when indicator parameters are established for fluids not originating from the hazardous waste management units;
- when the VZMS wells and sumps will be constructed;
- scheduled report submittals; and,
- inspection and monitoring schedules.

7. The NMED requires four (4) additional monitoring wells, one deep and three shallow. An additional deep VZMS well is required at the northeast corner of the landfill based on the location's proximity to the landfill sump and the northeast dip of the U/L Dockum contact. (see Structure Contour Map referenced earlier).

The three (3) shallow VZMS monitoring wells are necessary to monitor the stratigraphic contact of the Quaternary alluvium and underlying Upper Dockum. NMED bases this determination on the significant water accumulation at the contact encountered in Drill Hole PB-39 reported in GMI's Final Report for 1999 Stratigraphic and Groundwater Characterization Program. NMED suggests that the three wells should be co-located with locations VZMW-2, VZMW-5, and the additional deep well location required at the NE corner of the landfill referenced above. Shallow well monitoring and sampling should be similar to that for the deep wells. Additional shallow well construction requirements will be provided in specific comments regarding Section 2.2 (Vadose Zone Monitoring Wells). GMI shall make all necessary changes to Section 2.2.

8. GMI has not provided NMED with the information requested in our March 10, 1999 Request of Supplemental Information (RSI) regarding the abandonment of all previous characterization bore holes. NMED is concerned that some of the deep borings to the Lower Dockum aquifer remain open, providing a conduit for contaminant transport.

Specific Comments:

1. Page 1. Section 1.1 (Background). Paragraphs 2 and 3.

Numerous references to the “report” should be changed to “work plan”. NMED did not attempt to identify this inaccuracy elsewhere in the work plan.

2. Page 1. Section 1.2.(Project Scope and Objectives).

This section must address the contingencies should fluids appear in the VZMS, or reference where this information is located in the permit application. See General Comment # 4.

3. Page 1. Section 1.2.(Project Scope and Objectives). Paragraph 1.

Change language from the future tense to the present tense.

4. Page 1. Section 1.2.(Project Scope and Objectives). Bullets

Punctuate properly.

5. Page 2. Section 1.2.(Project Scope and Objectives). Paragraph 1.

Suggest changing word “initial” to “primary”.

6. Page 2. Section 1.2.(Project Scope and Objectives). Paragraph 1.

Explain the word “eventually”. Provide the schedule or remove the word if appropriate. See General Comment # 6.

7. Page 2. Section 1.2.(Project Scope and Objectives). Paragraph 1. Sentence 2.

Replace “In addition” with “A secondary system will consist of”.

8. Page 2. Section 1.2.(Project Scope and Objectives). Paragraph 2. Sentence 1.

The sentence is inaccurate in that the work plan currently does not describe how evaporation pond waters will be characterized. This deficiency is also addressed in comments regarding Section 3 below.

Sentence one and subsequent sentences are somewhat confusing because of the lack of distinction between fluids that originated from a hazardous waste management unit, and fluids derived from other sources. Part of the confusion stems from using the term “leachate” when referring to fluids from the landfill and also to fluids having undergone the Meteoric Water Mobility Test Procedure. Please standardize terminology regarding fluid sources to minimize confusion.

9. Page 2. Section 1.2.(Project Scope and Objectives). Paragraph 2. Sentence 2.
Suggest replacing “for landfill leach so that landfill leachate can be identified and appropriately mitigated in a timely manner” with “ to be used to distinguish between fluids from non-waste management unit sources and waste management units.”

10. Page 2. Section 1.2.(Project Scope and Objectives). Paragraph 3.
The final work plan should not contain the word “proposed”.

11. Page 2. Section 1.2.(Project Scope and Objectives). Bullet List
The first three bullets are redundant with the second and third paragraphs in the Section. The introductory sentence should explain that the bullets are “additional” issues addressed in the work plan.

12. Page 2. Section 1.2.(Project Scope and Objectives). Paragraph 4.
Please be consistent when referring to the “work plan”. The term is used in the paragraph inappropriately as a formal noun.

13. Page 2. Section 1.3.(Project Organization). Sentence 1.
Replace the word “project” with “this portion of the hazardous waste management permit application.”

14. Page 2. Section 1.3.(Project Organization). Sentence 2.
Please change “responsible for engaging the services of contractors” to “the permittee”.

15. Page 2. Section 1.3.(Project Organization). Sentence 3.
NMED assumes that monitoring well construction will also be subcontracted.

16. Page 2. Section 1.4.(Geology and Hydrology).
Please remove the word “report” and reference Section 3 of the application as a source for geologic and hydrologic information.

17. Page 3. Section 1.4.1.(Site Specific Geology) Paragraph 2. Sentence 3.
The sentence incorrectly implies that a basal sand unit does not exist. Whether the basal unit is the Santa Rosa Sandstone is controversial and does not have to be addressed in this WP. Figure 3-6 of the 1999 version of the application is a map showing the proposed site to be within the area of the SR Sandstone, and previous application submittals have referenced it as such. Furthermore, Section 3.4.3.1 of the application suggests the existence of approximately 50 feet of basal sandstone. The WP must acknowledge the existence of a more permeable basal Lower Dockum unit.

18. Page 3. Section 1.4.2.(Hydrology) Paragraph 2. Sentence 1.
The WP must discuss the groundwaters that were encountered during the characterization study.

19. Page 3. Section 1.4.2.(Hydrology) Paragraph 3. Sentence 1.

It would be more accurate to state that, based on drilling information, the western boundary is somewhere between one-half and two miles east of the proposed site.

20. Page 4. Section 2.0. (Vadose Zone monitoring System Installation) Paragraph , Sentence 2.

Replace the word “installed” with “addressed in a permit modification request”. Replace the word “remaining” with “subsequent”. Remove the phrase “following construction”.

21. Page 4. Section 2.1. (Vadose Zone Sumps)

This section must reference the transducers mentioned in the application and discuss or reference their operation and maintenance. The transducer O&M reporting requirements should be referenced in the reporting plan mentioned in the General Comments.

22. Page 4. Section 2.1. (Vadose Zone Sumps) Paragraph 1. Sentence 1.

The acronym VZMW should be VZMS.

23. Page 4. Section 2.2.2. (Vadose Zone Monitoring Well Construction) Sentence 1.

NMED has no specific permit requirements for monitoring wells.

24. Page 5. Section 2.2.2. (Vadose Zone Monitoring Well Construction) Paragraph 1. Sentence 1.

Dual-wall hammer percussion drilling may preclude the geophysical analysis committed to in the following paragraph. Perhaps the outer steel casing need only stabilize the alluvial material.

25. Page 5. Section 2.2.2. (Vadose Zone Monitoring Well Construction) Paragraph 1. Sentence 2.

The WP should specify that the soil samples from drill cuttings will also be collected for the background chemical analysis. NMED’s comments regarding background determination in the Closure/Post-closure portion of application were sent in separate correspondence.

26. Page 5. Section 2.2.2. (Vadose Zone Monitoring Well Construction) Paragraph 2. Sentence 3.

Please specify which geophysical tools will be used. NMED assumes it will be the same suite of tools used during the characterization of the site.

27. Page 5. Section 2.2.2. (Vadose Zone Monitoring Well Construction) Paragraph 3. Sentence 1.

This sentence presupposes that dual-wall hammer percussion air drilling will be used.

28. Page 5. Section 2.2.2. (Vadose Zone Monitoring Well Construction) Paragraph 3.

NMED suggests including language in the WP that specifies that the well casing will be installed by hanging it in tension rather than standing it on the bottom of the borehole.

This method of installation will cause the casing to hang straight and will allow for a visible inspection for the presence of fluids.

29. Page 5. Section 2.2.2. (Vadose Zone Monitoring Well Construction) Paragraph 3.
NMED is concerned about the future integrity of wells constructed of Schedule 40 PVC. Furthermore, GMI's permit will specify that any compromised well shall be replaced. NMED's experience is that wells have been compromised in the past due to inappropriate probing, particularly during well development with steel bailers. Due to the importance of measuring fluid accumulations in the well sump, and the possibility of lost fluids due to compromised wells (particularly at the bottom), NMED requires that the WP establish procedures to monitor well integrity. Well integrity shall be checked by measuring the total depth of the well casing during each monitoring event. (Please make the appropriate changes in Section 4. (Monitoring Procedures)). Well integrity would be more assured if the wells were constructed of Schedule 80 PVC with bottom caps attached with stainless steel rivets.

30. Page 5. Section 2.2.2. (Vadose Zone Monitoring Well Construction) Paragraph 3. Sentences 3&4.
NMED requires that the screened interval of these deep wells span the contact of the U/L Dockum, and that the length be extended from the 10 feet currently specified in the WP to whatever length is required to reach approximately ten feet below the Upper Dockum-alluvial material contact.

NMED cautions against screening into the alluvial material. This might result in an inaccurate interpretation of fluid movement through the Dockum and cause unnecessary response actions. Additional rationale for this requirement is presented in General Comment # 3.

31. Page 5. Section 2.2.2. (Vadose Zone Monitoring Well Construction) Paragraph 4. Sentence 1.
Again, this sentence presupposes that dual-wall hammer percussion air drilling will be used.

32. Page 5. Section 2.2.2. (Vadose Zone Monitoring Well Construction) Paragraph 4. Sentence 4.
NMED cautions against hydrating the bentonite pellets, or for that matter, putting any fluids down these boreholes, because fluids accumulating in these wells will trigger significant contingencies. Perhaps a thicker layer of pellets will preclude grout migration, or formation and/or grout moisture will hydrate the bentonite.

33. Page 5. Section 2.2.2. (Vadose Zone Monitoring Well Construction) Paragraph 4. Sentence 6.
NMED cautions against using flush-mounted traffic-related well boxes due to the potential for surface fluids entering through this type completion. Again, any fluids accumulating in these wells will trigger significant contingencies. Related additional comment provided regarding Figure 2 (Construction Diagram).

34. Page 5. Section 2.2.2. (Vadose Zone Monitoring Well Construction)

Regarding the shallow monitoring wells referenced in General Comment # 7. NMED envisions the shallow wells nested with the deep wells, but no nearer than eight horizontal feet. The shallow wells should have five feet of screen spanning the contact of the alluvial material and the Dockum, with an additional one-foot sump. Under no circumstances should the shallow and deep well casings have less than ten vertical feet between screened intervals.

35. Page 5. Section 2.2.2. (Vadose Zone Monitoring Well Construction) Paragraph 5

Please add to the bulleted list of “well construction information logged” a measurement of total depth of the well to one one-hundredth of a foot and listing of any variances from the WP with justification provided.

36. Figure 2 (Location of Sumps and Monitoring Wells/Typical Vadose Zone Monitoring Well Construction Detail)

Add locations for the four monitoring wells mentioned in General Comment # 7.

37. Figure 2 (Location of Sumps and Monitoring Wells/Typical Vadose Zone Monitoring Well Construction Detail)

NMED recommends altering the figure to show the surface completion mentioned in a previous Specific Comment. Note #2 should reflect this change. The construction detail should also be changed to specify a more watertight cap for the top of the well casing. NMED also recommends surrounding the surface riser with protective posts.

38. Figure 2 (Location of Sumps and Monitoring Wells/Typical Vadose Zone Monitoring Well Construction Detail)

The annular seal is critical to vadose zone monitoring. NMED recommends the WP be more specific than “bentonite or cement/bentonite”.

39. Figure 2 (Location of Sumps and Monitoring Wells/Typical Vadose Zone Monitoring Well Construction Detail)

The construction diagram should be altered appropriately to reflect previous comments. Appropriate sump lengths should be specified. Centralizers are important to insure proper function and are not “optional”.

40. Page 7. Section 3.1. (Baseline Liquid Characterization / Methods and Procedures)

The WP must further specify how and when landfill leachate and evaporation pond liquid chemical characteristics will be established. It must specify that all initial liquid baseline characterizations will be established within three months of activating the facility water supply system. The WP must recognize that the leachate is a F039 hazardous waste and must be both handled and analyzed as such. Furthermore, the leachate analytical section should address liner compatibility issues (e.g., pH, total chlorine, and total nitrogen) for obvious reasons.

41. Page 7. Section 3.1. (Baseline Liquid Characterization / Methods and Procedures) Paragraph 1.

The word “well” should be plural.

42. Page 7. Section 3.1. (Baseline Liquid Characterization / Methods and Procedures) Paragraph 4. Sentence 2.

The WP commits to collecting cuttings from both the Upper and Lower Dockum to perform leach tests. The same samples should also be used to establish the background concentrations referenced in comments regarding Section 8.0 (Closure/Post-closure). The WP would be more complete, and NMED would have greater confidence that background samples would be appropriately collected, if this section contained a reference to collecting the background samples.

43. Page 8. Section 3.1. (Baseline Liquid Characterization / Methods and Procedures) Table 1.

Spelling of “landfill” in the header of first section needs to be corrected.

44. Page 8. Section 3.1. (Baseline Liquid Characterization / Methods and Procedures) Table 1.

GMI commits in this table to analyzing the dissolved concentrations of heavy metals. The EPA’s RCRA Groundwater Monitoring Technical Enforcement Guidance Document (TEGD, 6/87), and the more recent EPA RCRA Groundwater Monitoring: Draft Technical Guide (11/92), suggest that samples be measured for total metals concentrations instead of dissolved. GMI must justify the commitment to measure only for dissolved concentrations.

45. Page 8. Section 3.1. (Baseline Liquid Characterization / Methods and Procedures) Table 1.

NMED finds the use of the word “leachate” confusing when it refers to both landfill and Dockum leachate. The referenced Meteoric Water Mobility Procedure uses the word “extract”. Perhaps the application could also use the word “extract” to avoid confusion. The same term should be used in the associated text.

46. Page 8. Section 3.1. (Baseline Liquid Characterization / Methods and Procedures) Table 1.

The table, and in fact the entire WP, make no reference to how the evaporation pond fluids will be chemically characterized. To the degree that the chemistry of the evaporation pond fluids are relevant to vadose zone monitoring, please address this issue. To the degree the chemistry of the evaporation pond fluids are relevant to the Waste Analysis Plan, please address it there and possibly reference it in the WP.

47. Page 8. Section 3.1. (Baseline Liquid Characterization / Methods and Procedures) Table 1.

Because all media referenced in this table are fluids, the table should cite the water or waste water analytical methods instead of the solid waste methods (i.e., 624 versus 8260).

48. Page 9. Section 4.1. (Monitoring Procedures)

Additional description of how the VZMS will be monitored is needed in this section, particularly the method of determining whether fluids exist in the system. Perhaps an additional subsection titled "Monitoring Method" is necessary. The section must describe both an intrusive and a visual monitoring method. The intrusive method would consist of inserting a fluid detection device capable of detecting all possible fluids. The fluid detection device will measure both the depth to fluids to within one one-hundredth of a foot and the total depth of the well to the same accuracy.

Fluid presence in the wells will be verified via visual inspection by either shining a flash light or reflecting sunlight down the well and inspecting for a fluid reflection. This verification procedure might possibly eliminate false positives from condensation on the sides of the well.

This section makes no mention of the transducers referenced elsewhere in the application. Please specify whether each transducer has a pressure readout at the surface, whether there is a data logging device, whether there is an alarm at some central control station, and whether the pumps below both the landfill and evaporation pond will be activated periodically to verify that they function properly.

Finally, this section needs a reference to maintenance and record keeping commitments.

49. Page 9. Section 4.1. (Monitoring Procedures/Monitoring Frequency)

The section should commit to monitoring more frequently if the Action Leakage Rate (ALR) at either the landfill or the evaporation pond is exceeded. This commitment should also be in other sections of the application regarding the ALR.

50. Page 9. Section 4.1. (Monitoring Procedures/Monitoring Frequency)

The monitoring frequency of the evaporation pond vadose wells during closure and post-closure should be similar to the frequency for the landfill. NMED believes these wells could continue to monitor for releases from the landfill and should not be abandoned. Please change the table accordingly.

51. Page 9. Section 4.1. (Monitoring Procedures/Monitoring Frequency) Paragraphs 2&3.

These paragraphs deal with contingencies that have little to do with monitoring frequency. The paragraphs should therefore fall under a separate subsection that should also reference the other relevant portions of the application (e.g., Section 6.0 (Contingency Plan) and Section 10.0 (Corrective Action)). See General Comment # 5.

This additional subsection must specify any reporting requirements that, at a minimum, would be as stringent as the requirements in the Response Action Plan.

52. Page 9. Section 4.1. (Monitoring Procedures/Monitoring Frequency) Paragraph 3.

The WP suggests that that no additional action would be taken if fluids found in the VZMS are not from one of the waste management units. NMED finds this proposal unacceptable, principally because the situation would render the system ineffective at

identifying future releases. GMI must commit to identifying and removing all fluids and fluid sources that would render the VZMS ineffective.

53. Page 9. Section 4.1. (Monitoring Procedures/Monitoring Frequency) Paragraph 3.
GMI's suggestion to initiate a detection-monitoring program if liquids in the VZMS originate from one of the waste management units is inappropriate. In essence the VZMS is a detection-monitoring program in the vadose zone. Please refer to General Comment # 4.

54. Page 9. Section 4.2. (Sample Collection) Paragraph 1.
The paragraph states that samples will be analyzed in an EPA "certified" laboratory. To NMED's knowledge EPA does not certify laboratories. NMED requires that laboratory data undergo a Level IV data validation package as described in the RCRA Analytical Methods (SW-846) Quality Control chapter, 3rd Edition, dated December 1996.

55. Page 9. Section 4.2. (Sample Collection) Paragraph 2.
The phrase "dedicated portable" transfer pump is contradictory and confusing. NMED assumes the monitoring sumps referenced in this paragraph are those below the landfill and evaporation ponds, and are not the "well" sumps. (This is another example of how GMI's terminology needs clarification.) Dedicated pumps in the well sumps would make it difficult to probe the bottom of the well.

NMED is concerned that GMI has not appropriately specified the type of pumps it proposes to use to sample the vadose zone. The application implies that the same pump system would be installed in the LCRS, the LDRS, and the vadose zone sumps. NMED suggests that high volume pumps and associated large diameter discharge tubing used in the LCRS to remove large volumes of fluids might be inappropriate for collecting representative samples of potentially volatile fluids from intervals that are slow to recharge. For proper pump selection, please see EPA's Groundwater Monitoring Draft Technical Guidance (EPA/530/R-93-001).

56. Page 10. Section 4.2. (Sample Collection) Paragraph 2. Sentence 1.
GMI must commit to measuring and logging field parameters frequently enough to indicate parameter stabilization. The assumption is that parameter stabilization indicates sufficient purging of the discharge tubing and the well bore.

57. Page 10. Section 4.2. (Sample Collection) Paragraph 2. Sentence 2.
GMI commits to purging three well volumes prior to collecting a sample. NMED requires that the WP consider stabilization of parameters referenced in Sentence 1. NMED suggests it may be difficult or impossible to purge three well volumes. The WP should address this possibility.

This paragraph seems to address both the sumps and the wells. Please distinguish and clarify.

58. Page 10. Section 4.4. (Quality Assurance Samples) Paragraph 1. Sentence 1.
This sentence must specify that a duplicate will be collected for all analytes.

59. Page 10. Section 4.4. (Quality Assurance Samples) Paragraph 1. Sentence 2.
The WP must specify whether the blank sample is a trip, ambient, or an equipment blank. If GMI anticipates using Section 4.7 (Decontamination), equipment blanks are imperative. If GMI anticipates laboratory contamination, trip blanks are imperative. Please cite the rationale in SW-846 for your selection.

60. Page 10. Section 4.5. (Chain-of-Custody Procedures)
Please commit to having the COC returned from the laboratory and placed in the facility operating record.

61. Page 11. Section 4.7. (Decontamination) Paragraph 2. Sentence 3.
Perhaps the sentence might be changed to “should bailers be necessary, they will be dedicated to each well to avoid cross contamination”.

62. Page 13. Section 6.1. (Data Management/Field Documentation) Paragraph 1.
The paragraph should reference the placement of all records into the facility operating record.

63. Page 13. Section 6.1. (Data Management/Field Documentation) Paragraph 2.
Please change the phrase “throughout the duration of the project” to “during the operating and post-closure period of the facility.”

64. Page 14. Section 6.4 (Data Analysis and Reporting) Paragraph 1.
This paragraph should reference the Level IV Data Validation Package referenced earlier.

The section number is incorrectly labeled 6.5.

65. Page 14. Section 6.4 (Data Analysis and Reporting) Paragraph 2.
The Data Report must contain an executive summary that highlights any significant findings for the period.

66. Page 14. Section 6.4 (Data Analysis and Reporting) Paragraph 2.
The Data Report must show significant historical changes such as variations in fluid volumes detected in the VZMS and variations in fluid chemistries.

67. Page 14. Section 6.5 (Data Storage)
All data storage associated with this WP shall be included in the operating record. The OR shall be maintained through the post-closure period of the facility (40 CFR 264.73(b)(6)).

68. Figure 4. Riser Pipe Detail
This figure is inappropriately labeled “LCRS”. Perhaps “Vadose Pipe” is more accurate.

69. Meteoric Water Mobility Procedure. Part 3.5

The procedure warns that it may not be suitable for obtaining extracts from finely divided solids, but does not explain what the problem is. NMED requires an explanation of this concern due to the WP suggestion that drill cuttings (possible very fine material) will be used to perform the test. Part 6.3 suggests that the sample be representative with respect to surface area.