



GARY E. JOHNSON  
GOVERNOR

State of New Mexico  
ENVIRONMENT DEPARTMENT  
Hazardous & Radioactive Materials Bureau  
2044 Galisteo Street  
P.O. Box 26110  
Santa Fe, New Mexico 87502  
(505) 827-1557  
Fax (505) 827-1544



PETER MAGGIORE  
SECRETARY  
PAUL R. RITZMA  
DEPUTY SECRETARY

May 12, 2000

Mr. Patrick Corser, P.E.  
Principal  
Montgomery Watson Mining Group  
P.O. Box 774018  
Steamboat Springs, Colorado

Dear Mr. Corser:

Enclosed for your information are comments on the engineering design portions of the revised Triassic Park Part B Permit Application. These comments were prepared by TechLaw Inc. under contract to the New Mexico Environment Department (NMED) and transmitted to us on May 11, 2000. Although we have not completed our review of these comments, we are sending them on to you as requested.

As we discussed by phone this week, the tank integrity assessment certification required under 20 NMAC 4.1.500 (incorporating 40 CFR 264.192(a)) must be signed by an independent engineer, i.e., not an engineer who works for the company which prepared the tank system design.

Please call me at 505/827-1558 ext. 1016 if you have any comments or questions.

Sincerely,

Stephanie Kruse  
Project Leader  
Triassic Park RCRA Permit

Enclosure

cc: James Bearzi, HRMB/NMED  
John Kieling, HRMB/NMED  
Carl Will, HRMB/NMED  
Dale Gandy, GMI

David Neleigh, EPA  
June Dreith, TechLaw  
Diane Dwyer, Montgomery Watson

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# TRIASSIC PARK HAZARDOUS WASTE FACILITY

## PART B APPLICATION

Dated April 2000

### REVIEW COMMENTS

The following comments are based "TechLaw Review Copy" of the application delivered on April 26, 2000. The updated documents were reviewed only to verify that the remaining proposed comment resolutions (in the July 21, 1999 Montgomery Watson Responses to NMED's Request for Supplemental Information), that were identified as deficient in the February 16, 2000 TechLaw review, were actually incorporated in the updated application. The proposed resolutions were discussed in several meetings, most recently on April 20.

The revised regulatory "crosswalk" (Appendix A in the 1997 document) was not provided for review.

The comments that were still unresolved in the February 16, 2000 review are addressed below. Comments which were adequately responded to and incorporated into the application (as noted in the February 16 review) were deleted.

#### GENERAL COMMENT

According to the facility, the Professional Engineer signature and stamp will be provided on the "final" set of drawings and documents. One potential remaining deficiency regarding PE certification is noted in Comment D-2c(1).

#### D. PROCESS INFORMATION

The Response is adequately incorporated in the updated plans.

Questions raised about the descriptions of stabilization and waste storage tank designs as "preliminary" (see previous comment D-2) were addressed by removing the word "preliminary." The designs presented in the application are now considered to be "final." If the size (capacity) or structural details of the tanks are changed after issuance of a permit, a permit modification may be required. Specifications are provided for double-wall piping, outside of tank containment areas, and detailed piping diagrams will be included in as-built drawings.

**D-1a(3)      Secondary Containment System Design and Operation: 270.15(a)(1), 264.175(a), 264.175(d)**

The limits of the 25-year runoff containment zones shown on drawing 41, where roll-off containers will not be placed, are not fully supported by runoff volume calculations. New Appendix E-38 of the Engineering Report was found to be missing one page (6), and the

Appendix does not provide the measurements and calculations from which the runoff storage capacities of the rolloff storage areas were derived. Rough volume calculations using scaled measurements from Drawings 41 and 42 were much less than the "Roll-Off Waste Cell Volume" values stated (without any supporting information) in Appendix E-38 (page 1). Provide measurements and calculations supporting the indicated 25-year storm inundation limits for placement of roll-off containers.

The application text (sections 2.2.2) and Operations and Maintenance Plan (section 3.9.3.K) were revised to include restriction of placement of roll-off containers in the Roll-Off Storage Area above the 25-year storm inundation zone. However, the revised text in the next to last sentence in the second paragraph of section 2.2.2 is garbled.

The revised application still states two different rolloff container spacings in section 2.2.2 (4 feet side by side, 2.5 feet end to end) and section 2.2.13 (4 feet end to end). The O & M Plan spacing statement (3.9.3.K) agrees with section 2.2.2 of the text. Revise the application to provide consistent container spacing requirements in the application text and O&M Plan.

**D-1a(3)(c) Containment System Capacity and Control of Run-on: 270.15(a)(3) and (4), 264.175(b)(3) and (4)**

The Response (no free liquids accepted, and if found during inspection, they will be pumped out of the rolloff) is adequately incorporated in the updated plans. (Section 2.2.2, and O&M Plan, section 3:9.3.F.)

**D-1a(3)(e) Removal of Liquids from Containment System: 270.15(a)(5), 264.175(b)(5)**

The Response is adequately incorporated in the updated plans. (Section 5.2.4.)

**D-2 Tank Systems: 270.16, 264.19 through 264.194, 262.10**

The Response is adequately incorporated in the updated plans.

Although Section 6.1.1 of the Engineering Report still states that "...certain components of the stabilization building,... and steel bins will be completed under future design/build contracts," the design information provided in the application is now considered to be "final." Section 6.2.1 of the Engineering Report was revised to remove the words "initial" and "preliminary." Section 2.4.7 of the application text was similarly revised to delete "preliminary."

**D-2a Tank Systems Description: 270.14(b)(1), 264.194(a)**

The Response is adequately incorporated in the updated plans.

Section 6.1.2 was revised to state that "The control room is positioned centrally along the east wall of the stabilization building."

**D-2a(1)      Dimensions and Capacity of Each Tank: 270.16 (b)**

The Response is adequately incorporated in the updated plans.

The processing capacity of the stabilization process was revised in section 2.4 to state the total waste processing capacity of the 4 bins as “150,000 cubic feet” per day.

**D-2a(2)      Description of Feed Systems, Safety Cutoff, Bypass Systems and Pressure Controls: 270.16(c), 264.194(b)**

The Response is adequately incorporated in the updated plans.

**D-2a(4)      Ignitable, Reactive and Incompatible Wastes: 270.16(j), 264.17(b), 264.198, 264.199**

The Response is adequately incorporated in the updated plans.

**D-2c(1)      Assessment of New Tank System’s Integrity: 270.16, 264.192**

The Response is not adequately incorporated in the updated plans.

40 CFR 264.192(a) requires the certified assessment of new tank system integrity to be submitted “at time of submittal of Part B information.” Most of the necessary supporting information appears to be provided in the application (engineering calculations, drawings and other tank information Appendices were provided as part of the April 2000 document). The revised application now states (sections 2.3.8 and 2.4.8) that the tank systems have sufficient structural integrity and are acceptable for storing and treating hazardous waste. However, these statements are not certified as required, and the application text will apparently not be signed or certified as a whole by a Professional Engineer. The full requirements in the regulation are not addressed, and information necessary to show that the requirements are met is not specifically referenced. For example, the regulation states that the assessment must show that “... the tank system has sufficient structural strength, compatibility with the waste(s) to be stored or treated, and corrosion protection to ensure that it will not collapse, rupture or fail.”

Revise the application to provide the required certified tank assessments.

**D-2d(1)      Plans and Description of the Design, Construction, and Operation of the Secondary Containment System:**

The Response is adequately incorporated in the updated plans.

**D-4      Surface Impoundments**

The Response is adequately incorporated in the updated plans.

**D-4e(2)      Soil Liners: 270.17(b)(1), 264.221(a), and 264.221(c)(1)**

The Response is adequately incorporated in the updated plans.

Montgomery Watson is confident in the adequacy of the on-site Upper Dockum soils for meeting the maximum permeability requirements of 40 CFR 264.221(c). As noted in previous comments, the very limited laboratory test data (from 3 tests) indicate (2 out of 3 tests) that the proposed soil liner material will not meet the required low permeability limit, even when compacted to more than 99 or 100% of the maximum Proctor density. (See Appendix E-40, Table 2.) As noted previously, laboratory testing is liable to underestimate the actual (large-scale) field permeability or hydraulic conductivity of the constructed liner, by as much as several orders of magnitude. The test pad will provide the critical test that must be passed before the impoundment liners are constructed.

**D-4e(2)(a)      Material Testing Data: 270.17(b)(1), and 264.221(c)**

The Response is adequately incorporated in the updated plans.

**D-4e(2)(b)      Soil Liner Compatibility Data: 270.17(b)(1), 264.221(a)(1)**

The Response is adequately incorporated in the updated plans.

**D-4f(1)      System Operation and Design: 270.17(b)(1), 264.221(c)(2) and (3)**

The Response is adequately incorporated in the updated plans.

**D-4g      Liner System, Construction and Maintenance**

**D-4g(3)      Construction Quality Assurance Program: 270.17(b)(1), 270.17(b)(4),  
270.30(k)(2), 264.19, and 264.229 (a)**

The Response regarding Lower Dockum lab soil permeability test data was apparently in error, as no such data are known to exist.

**D-4i      Leakage Response Action Plan: 270.17(b)(5), 264.223(b) and (c)**

The Response is not adequately incorporated in the updated plans.

An updated Appendix G of the Engineering Report was provided for review on 4/26/00. However, instead of doing as stated in the Response, the entire Surface Impoundment section was removed, while the remaining Response Action section still refers only to 264.304 and the landfill LDRS sump (at the top of the page). Provide a revised Leakage Response Action Plan that includes the Surface Impoundments, either by reference at the top of the page with the landfill LDRS, or as a separate list of Response Actions (in which case, the reference to "the pond" and "40 CFR 264.223(b)(4)" should be removed from the landfill section).

**D-4j(3) Prevention of Overtopping: 270.17 (b)(2), and 264.221(g)**

The Response is not adequately incorporated in the updated plans.

The O&M Plan now states that liquid levels will be checked daily by visually observing installed staff gauges marked every one-tenth of a foot. The O&M Plan (section 3.5.5), however, provides no information as to how these observations will detect evidence of "improper operation of overtopping control systems or sudden drops in liquid levels." To prevent overtopping, the maximum liquid level (minimum two feet of freeboard) should be clearly marked on the staff gauges or noted on the daily inspection checklists (referred to in Volume I, Section 5.2.1.1 as appearing in Volume II, Appendix I, which was not included in the Application). A sudden drop in liquid level can only be noted by comparing the current liquid level to the previous liquid level, while factoring in known liquid addition and removal; the O&M Plan does not mention this procedure. Revise the O&M Plan to detail how inspections will determine when the maximum liquid level is exceeded or when there is a sudden drop in liquid level.

**D-6 Landfills: 270.14(a), 270.21 and 264.300 through 264.317**

**D-6d Liner System Foundation: 270.21(b)(1), 264.301(a)(1)(ii)**

The response is adequately incorporated in the updated plans. The Engineering Report (Appendix E-1) now contains slope stability calculations.

**D-6d(4)(b) Bearing Capacity: 270.21(b)(1), 264.301(a)(1)(ii)**

The response is adequately incorporated in the updated plan. The Engineering Report (Appendix E-9) now contains subgrade settlement (bearing capacity) calculations. The calculations provided were randomly checked during the review. A detailed assessment of the calculations and assumptions provided were not conducted due to the quick turn-around time requested by NMED.

**D-6e(1)(a) Synthetic Liner Compatibility Data: 270.21(b)(1), 264.301(a)(1)**

The Response is adequately incorporated in the updated plans. A new Appendix H-4 of the Engineering Report contains liner manufacturers' HDPE leachate compatibility information.

**D-6e(2)(b) Soil Liner Compatibility Data: 270.21(b)(1), 264.301(a)(1)(i), 264.301(c)(1)(ii)**

The Response is adequately incorporated in the updated plans. A new Appendix H-5 of the Engineering Report contains geosynthetic clay liner leachate compatibility information.

**D-6f(1)      System Operation and Design: 270.21(b)(1), 264.301(a)(2), 264.301(c)(2), 264.301(c)(3)**

The Response is adequately incorporated in the updated plans. Section 3.4.4 of the O&M Plan contains information on the instrumentation, sensors, and pump controls that will be used to operate the LCRS.

**D-6f(3)      Grading and Drainage: 270.21(b)(1), 264.301(a)(2), 264.301(c)(2), 264.301(c)(3)**

The Response is adequately incorporated in the updated plans. Section 3.4.4 of the O&M Plan contains information measuring leachate volumes.

**D-6f(4)      Maximum Leachate Head: 270.21(b)(1), 264.301(a)(2), 264.301(c)(2)**

The Response is not adequately incorporated in the updated plans.

The O&M Plan describes, in general, how vacuum trucks and portable pumps will be used to remove excess leachate and contaminated runoff from the landfill and leachate from the leachate tank, thereby maintaining compliance with the maximum leachate head requirement. The Application, however, does not include the capacities of the vacuum trucks and portable pumps, which is required to determine the effectiveness of removal and the techniques to be used. Revise the O&M Plan to provide detailed capacities of the vacuum trucks and design of the portable pumps that will be used to manage large volumes of precipitation that will collect in the LCRS after rainstorms.

**D-6g(1)(b)      Soil Liners: 270.21(b)(1), 264.301(a)(1)**

The Response is adequately incorporated in the updated plans. The EPA 9090 test is not applicable to soil liners. A new Appendix H-5 of the Engineering Report contains geosynthetic clay liner leachate compatibility information.

**D-6g(2)      Construction Specifications: 270.14(a), 270.21(b)(1), 264.301(a)(1)**

The Response (PE certification) is to be adequately incorporated in the updated plans, when the application is finalized.

See the General Comment.

**D-6g(3)      Construction Quality Assurance Program: 270.21(b)(1), 270.30(k)(2), 264.19, 264.303(a)**

The Response is adequately incorporated in the updated plans. The CQA Plan has been modified to include general statements that require the use of manufacturers' procedures for checking and/or calibration of instrumentation, pump controls and data recorders.

**D-6g(4)      Maintenance Procedures for Leachate Collection & Leak Detection Systems: 270.21(b)(1), 264.301(a) and (c)**

The Response is not adequately incorporated in the updated plans.

The O&M Plan does not include provisions for following applicable manufacturers' or standard preventive maintenance procedures, such as lubricating moving parts. Revise the O&M Plan to include manufacturers' and standard preventive maintenance procedures.

**6h      Action Leakage Rate: 270.21(b)(1)(v), 264.302**

The Response is inadequately incorporated in the updated plans. The Action Leakage Rate compliance information appears in three sections of the Application:

- Volume I, Section 2.5.3.8, Action Leakage Rate & Section 2.5.3.9, Response Action Plan
- Volume II, Appendix O, Section 3.4.5, Inspection and Monitoring
- Volume VI, Appendix G, Action Leakage Rate and Response Action Plan for Landfill Phase 1, 2, and 3 and Evaporation Plan

This information is incomplete and contains several discrepancies. For example, the O&M Plan (Section 3.4.5 E) states that the specific procedures for determining the LDRS average daily flow rate appear in the Response Action Plan (Section 2.5.3.9), but the information actually appears in the O&M Plan (Section 3.4.5 P) where it is erroneously described as the procedure for determining the ALR. Also, the Action Leakage Rate discussion (Section 2.5.3.8) states that the LDRS average daily flow rate will be calculated according to the Response Action Plan (Section 2.5.3.9), but the Response Action Plan contains no such discussion. Furthermore, the O&M Plan (Section 3.4.5 O) states that the ALR exceedence determination appears in the "Action Leakage Rate and Response Action Plan report" but does not explain what this report is or where, in the Application, it can be found. Finally, the response actions to be taken should the ALR be exceeded that are listed in Section 2.5.3.9 differ from the corresponding response actions listed in Appendix G. Revise the application to correct all discrepancies with respect to Action Leakage Rate.

**D-6h(2)      Monitoring of Leakage: 270.21(b)(1)(v), 264.302(b)**

The Response is adequately incorporated in the updated plans. See the preceding Comment(D-6h).

**D-6j Run-on and Run-off Control Systems: 270.21(b)(2), 264.301(g)**

The Response is adequately incorporated in the updated plans. The Engineering Report contains an updated Appendix F.

**D-6j(5) Maintenance: 270.21(b)(2) and (3), 264.301(g) and (h)**

The Response is adequately incorporated in the updated plans. Ditch maintenance is addressed in the O&M Plan, Section 4.7.

**D-6k Control of Wind Dispersion: 270.21(b)(5), 264.301(j)**

The Response is not adequately incorporated in the updated plans.

The Response states that the maximum wind speed during waste placement will be specified at 35 miles per hour in the O&M Plan. However, the O&M Plan does not mention wind speed limit on waste placement, nor does it describe how wind speed determinations will be made. Revise the O&M Plan to include the wind speed waste placement limit and wind speed determination procedure.