



STATE OF ARKANSAS  
DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY  
SOLID WASTE MANAGEMENT DIVISION  
8017 I-30, P.O. BOX 8913  
LITTLE ROCK, ARKANSAS 72219-8913  
PHONE: (501) 682-0580  
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May 27, 1997

33500  
Submitted and Entered

Mr. Glenn R. Holcomb  
District Manager, U.S.A.  
Waste Services, Inc.  
P. O. Box 1310  
Springdale, AR 72765

Re: Proposed Modification of Class I Landfill Facility  
CSN 72-0144 Permits No. 123-SR-2 & 162-SR-2

Dear Mr. Holcomb:

Thank you for the revised submittal of April 21, 1997. Most of the engineering review comments of April 9, 1997 have been addressed. There are some issues that are unresolved at this time as discussed hereinafter. Comment numbers for unresolved issues correspond with those in the April 9 letter. For any revisions necessary to the narrative, specs, CQA plan, or engineering plans only the pages where changes are made need be resubmitted.

Volume 1

1. Section 4.5.1 New Source Performance Standards: Please provide the Solid Waste Division with a copy of any revised design capacity report that is provided to the Air Division as noted in this section. Any proposed increase above the capacity already indicated in the pending modification application would require a separate or new application and would constitute a separate or new permit action.
3. Section 5.6.2 Collection System Design and Documentation, 12" protective layer: The proposal to use native soil for the 12" protective layer does not appear to be realistic for the site given the very high incidence of chert rock cobbles/boulders intermixed with soils. The chert material would be more detrimental than

protective of underlying geocomposite and HDPE liner. If despite these limitations native soil is to be used, the material would require careful screening and processing to separate and remove rock from the soil. This should be thoroughly covered in the narrative, specs [Comment 7], and CQA plan [Comment 9].

#### Operating Procedures

A description of the procedures and automatic indicator/alarm systems to monitor leachate head and the leak detection system should be added to the narrative, as discussed in Comment 6 hereinafter.

#### Specifications

6. Inasmuch as there is no pump control system that can be set at the proper level to automatically remove leachate such that free flowing conditions are maintained within the leachate collection system, a reliable means of constantly monitoring leachate head must be provided. Specs for leachate/leak detection water level indicators should be included in Section U. The monitoring/indicating system should include a marker at the elevation at which submergence or backwater conditions start to occur. An alarm and/or flashing red light should be incorporated into the monitoring/indicating system such that operators are alerted whenever the leachate head approaches maximum limits and contingency action can be taken.

7. Section 02225, 2.04 Gravel Backfill for Perforated Piping, Page 4: The phrase "or as specified" following  $\geq 1 \times (10)^{-3}$  cm/s in connection with permeability should be deleted. Drainage material must have a minimum permeability of  $1 \times (10)^{-3}$  cm/s per Section 22.425 of Reg. 22.

Section 02240 - Protective Cover and Barrier Protective Layer: While a permeability value for the material is indicated, no testing frequency could be found in this section or in the CQA plan. A maximum particle size of 1" is indicated for the lower 6" of the cover layer, but no testing frequency for particle size is indicated in this section or the CQA plan. It would be advisable to spec a maximum particle size for the upper portion of the cover layer as well and provide testing to verify this, particularly if native soil is to be used as noted in Comment 3.

### Construction Quality Assurance

9. Concerns remain about the stability and condition of the subgrade/interim cover, particularly at areas where new waste fill will be disposed over old waste. The CQA plan and/or earthwork specs should be rewritten such that it is made clear as to the procedures, tests, test criteria, passing criteria, and testing frequency that will be used to systematically verify and document that the subgrade is in an acceptable condition for subsequent construction of the liner system. The minimum thickness of the subgrade/interim cover should be verified. **All** the subgrade area that will become part of the phase to be constructed should be proof rolled under continuous visual inspection by a qualified CQA party. The minimum weight of proof rolling equipment should be indicated. The passing criteria for proof rolling, Torvane shear tests, and all other test methods listed should be indicated. The maximum allowable particle size in the subgrade surface should be specified.

For areas of the subgrade that fail to meet inspection and test criteria, specs should be provided for the placement of additional subgrade material over unsuitable areas or removal of the unsatisfactory material and replacement with acceptable material. As discussed in Comments 3 and 6, due to the high percentage of chert cobbles/boulders in native soil at the site, it would not be feasible to use native soil unless it was processed to separate and remove rock.

There appears to be no testing frequency given for permeability and particle size in the CQA plan for the protective cover and barrier protective layer.

### Plans

13. Tee connections are proposed for cleanouts on the leachate interceptor trench [Dwg 2 & Detail 4/14]; such a connection could make it difficult to isolate or reach the area in the perforated drain pipe where stoppage occurs, particularly if the 6" HDPE riser were of any significant length. It would appear that wye connectors [one for each direction for each segment of pipeline] would be necessary to direct sewer rodding or flushing water to the appropriate segment of the pipeline where stoppage occurs.

Cleanouts should be provided for leachate lines from waste cells to leachate storage tanks.

Letter To Mr. Glenn R. Holcomb  
May 27, 1997  
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15. Survey Control: Coordinate data should be provided for the control points. Coordinates should also be indicated for some of the major structures such as a corner of the transfer station, existing leachate sumps, leachate collection tank containment dike, etc. Some permittees provide descriptions, elevations, and coordinates of bench marks/control points all together in tabular form on the plans to facilitate access to the information.

**19. Drawing 2, Leachate Interceptor Trench:** Plans should indicate flow line [invert] elevations of the interceptor trench at high points [zeniths], low points, tie-ins to existing leachate lines, tie-ins to existing leachate sumps, and changes in grade. Please indicate flow direction(s) on the drawing.

**22. Drawings 2 thru 11:** The scope, extent and location of existing leachate collection lines, sumps and storage for Units 3 and 4 should be indicated. Apparently it will be necessary to provide at least a portion of this information on Dwg 12 and/or other drawings for portions of the leachate system south of the waste fill. At any rate, the whole leachate system should be indicated.

**24. Drawing 11:** The elevations of the top of the bottom liner should be indicated for low points [North & South Phases], at changes in the bottom grade, and crest between the North and South Phases. Invert elevations of leachate sumps should be indicated.

**Drawings 11 & 16:** Invert elevations for sumps [leachate & leak detection] should be indicated.

**25. Drawings 14 thru 16:** Apparently the waste fill is going to be constructed in at least two sections [north and south phases]. Temporary anchor trenches and temporary berms would be necessary between phases until they were joined together. Details of temporary trenches/berms should be indicated on the plans.

**26. Drawing 15:** The compaction requirement for the perimeter berm and liner anchor trench should be indicated [Detail 3/15].

**27. Drawing 18:** Provisions for automated tank water level monitoring/indicating devices should be covered in plans, technical specifications, and operating narrative as discussed in Comment 6 in order to provide timely, accurate data on the level, volume and rate of flow of leachate.

Letter To Mr. Glenn R. Holcomb  
May 27, 1997  
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If you have any questions or if I can be of service, please call me  
at me at 501-682-0607.

Sincerely,



Rodger Payne  
Permit Engineer

cc: Ken Bown, Genesis Environmental Consulting, Inc.  
Kevin Hodges, Sunray Services, Inc.  
Tom Coleman, Solid Waste Inspector, Fort Smith  
Mark McCorkle, Air Division



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April 9, 1997

Mr. Glenn R. Holcomb  
 District Manager, U.S.A.  
 Waste Services, Inc.  
 P. O. Box 1310  
 Springdale, AR 72765

Re: Proposed Modification of Class I Landfill Facility  
 CSN 72-0144 Permits No. 123-SR-2 & 162-SR-2

Dear Mr. Holcomb:

An engineering review of the referenced application has been made. The following engineering comments are offered for your consideration.

Volume 1

1. Section 4.5.1 New Source Performance Standards: The Air Division of PC&E should be contacted for guidance on this issue.
2. Sections 4.9 & 5.4 Surface Water: Typical details of erosion and sediment control measures [silt fences, hay bales, etc.] that will be implemented at the site should be included on the drawings. For discharges from sediment ponds, more permanent controls such as riprap, would be necessary [Comment 17]
3. Section 5.6.2 Collection System Design and Documentation: Complete specifications for the 12" protective layer, including permeability criteria, should be provided; please add to Technical Specifications [Appendix U]. Testing to verify that the protective layer meets specs should also be added to the CQA Plan.

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INIT	<u>RP</u>	_____	<u>ZEL</u>	_____	_____	_____	<u>[Signature]</u>	_____
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3. Section 5.6.2 Collection System Design and Documentation: Complete specifications for the 12" protective layer, including permeability criteria, should be provided; please add to Technical Specifications [Appendix U]. Testing to verify that the protective layer meets specs should also be added to the CQA Plan.



4. HELP 3 Model: Please make sure that all layers are considered in the HELP model and that consistent permeability criterion for each layer is used throughout in the HELP model, operation narrative, technical specifications, CQA Plan, drawings, and all other documents in the permit application.

An average waste depth of 10 feet is assumed in the model. It would appear that the average waste depth would be in the range of 30 to 40 feet based upon cross sections indicated on the drawings, please reconcile.

#### Operating Procedures

5. Precautions and procedures for protection of synthetic liners and drainage material [HDPE, Bentomat, and geotextiles] from heavy equipment and waste disposal vehicles during construction, initial startup, and facility operation should be covered in the operating narrative and the technical specifications [Comment 25]. Some notes on this should also be provided on the plans.

#### Specifications

6. Specifications for leachate and leak detection pumps should be added. Specs for water level/pump controls and leachate/leak detection tank water level indicators should be provided. Specs for manholes, risers/cleanouts, etc. [Comment 13] should also be provided. All layers of waste containment liner and cap should be covered in the specifications [Comment 25]. Please make sure all of the foregoing items mentioned are fully covered in the technical specifications [Appendix U].

7. Section 02225, 2.04 Gravel Backfill for Perforated Piping: Permeability criteria for this item should be specified. The frequency of testing and test standard [ASTM] should also be specified.

8. Section 02278, 2.02 Geotextile: While not required as part of the spec, please relate the permittivity criteria indicated with the permeability requirements of Reg. 22. Also, please clarify whether the permittivity value indicated applies to all Drainage Composite, Geocomposite, etc., or is there more than one value depending upon the material?



Construction Quality Assurance

9. The section on subgrade surface should be expanded as discussed in Comment 25.
10. Soils Testing: The CQA Plan should be revised such that, as a minimum, it is in accord with the minimum frequency of testing specified in Section 22.428 of Reg. 22.
11. The ASTM test designation and testing frequency for permeability testing of liner protection layers should be added to the CQA plan.

Plans

12. Stormwater: Operating notes and details of temporary diversion facilities to segregate and control run-on and run-off water at active disposal units should be added to the plans.
13. Details and locations of manholes, risers/cleanouts, etc. for leachate collection system and leak detection piping and leachate interceptor lines should be indicated.
14. Profiles of the leachate collection and detection lines should be provided.
15. Survey Control: At least three permanent survey monuments/control points should be indicated on the plans. The physical description of the control points should be provided such that they can be readily found in the field. Elevation and coordinate data should be provided for the control points. Coordinates should also be indicated for some of the major structures such as a corner of the transfer station, leachate collection tank containment dike, etc.
16. Erosion and Sediment Controls: Typical erosion and sediment control features and notes on their application should be added to the plans. In conjunction with this, it is recommended that a vegetative buffer strip be preserved and/or established and maintained around the perimeter of the entire site [except in riprap channels as discussed in Comment 17 below] including both fill and borrow areas. It appears that some of the proposed soil stockpile areas encroach very close to the property line; it would be preferable to have vegetative buffer strips between the edges of



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April 9, 1997

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stockpiles and the property line. Also, it would appear that some other erosion and sediment controls, such as silt fences, would be necessary at stockpiles.

Notes and details of cover vegetation should be added for waste fill, stormwater basin levees, borrow sites, and other areas disturbed by earthwork activities.

17. For sedimentation basins, details of water level and discharge/outlet control structures should be included on the plans with appropriate elevations. The location of the overflow or discharge point should be indicated for each basin as well as the drainage channel from the basin outlet structure to the property line. Drainage ways receiving basin discharges should have riprap and/or check dams, or other permanent velocity dampening features to reduce the potential for scouring as stormwater leaves the site. Drawing 17 indicates riprap in cross section @ one drainage channel, but the aerial scope and extent of riprap cannot be determined [this could be indicated on some of the overall site layout plans, perhaps Drawing 3].

18. **Drawing 1:** Please indicate access road up to the county road.

19. **Drawings 2 & 14, Leachate Interceptor Trench:** From the information shown, it is not clear as to flow line elevations of the proposed leachate interceptor trench, depth of excavation, the direction(s) of flow of leachate, the correct slope, etc. ; please add this information to the drawings. Drawing 2 indicates a 0.5% slope while Drawing 14 indicates a 1% slope [which would be preferable]; please reconcile.

Cross sections of the interceptor trench should be added [Drawings 4 thru 11]. Spot flow line elevations in plan view [Drawing 2] would also be helpful. Each of the leachate interceptor trenches has a total length of over 3000 feet (over 1/2 mile); in view of the rather long gravity collector and its relative flatness [if 0.5% slope is correct], it would appear that additional leachate sumps and pumps would be necessary at intervals along the trench to prevent a buildup of excessive heads on such a long collection system. Since the construction of the interceptor trench would occur over previously disposed waste, it would appear that it would be prone to differential settling which would, again, make the installation of intermediate sumps and pumps advisable for adequate removal of leachate.



**20. Drawings 2, 16 & 20:** One drawing indicates 4" X 6" dual containment piping while the others indicate 4" X 8". Please reconcile.

**21. Drawings 2 thru 11:** In view of slope distances of 500 to 900 feet or more at the proposed fill, it would appear that terraces and letdown structures would be necessary to prevent stormwater runoff from scouring/eroding away the vegetative cover system. The saddle between Units 3 and 4 might also be prone to scouring due to the convergence of runoff from two directions. Such structures might also be used on a temporary basis as a portion of the system to segregate run-on and run-off @ active fill areas [Comment 12].

**22. Drawings 2 thru 11:** The scope, extent and location of existing leachate collection lines and sumps for Units 3 and 4 should be indicated.

**23. Drawing 3:** The legend indicates a symbol for riprap area but such area(s) could not be found.

**24. Drawing 11:** Please provide a profile of the leachate collection and leak detection lines on section E6 +50 [or provide other cross sections with profiles of the collection/detection lines].

**25. Drawings 14 thru 16:** Please cite on the drawings the appropriate specification section for: 6" Top Soil, Compacted Clay, Geocomposite Layer, Protective Layer, Perimeter Berm and Anchor Trench, Drainage Composite, Barrier Protective Layer, 24" Clay, 18" Compacted Clay, 24" Thick Barrier Protective Layer, Drainage Composite (Gas Vent), 12" Thick Protective Cover, Drainage Geocomposite, 6" Thick Gas Venting Layer, and Interim Cover [next paragraph]. Please make sure all of the foregoing items mentioned are fully covered in the technical specifications [Appendix U]. Please make sure the permeabilities are specified for all layers/components and appropriate permeability criteria are used in the HELP model consistent with the specifications and drawings [Comments 3, 4 & 11].

Condition of Interim Cover: The minimum total thickness, minimum compaction, maximum particle size in upper several inches, surface smoothness, etc. of the existing interim cover [which would become the subgrade for the expansion thus impacting the utility of subsequent layers] should be covered in the specs to insure that construction of the interim cover is adequate. This might entail the placement and compaction of additional soil free of larger rocks and grading/filling to eliminate voids and insure proper drainage. Tests and procedures to verify that the interim cover is suitable should be covered in the specs and CQA/QC plan [which



Letter To Mr. Glenn R. Holcomb  
April 9, 1997  
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needs to be expanded in this regard]. Some notes on this should also be provided on the plans.

Notes and details of cover vegetation should be added.

Apparently the waste fill is going to be constructed in at least two sections [north and south phases]. Temporary anchor trenches and temporary berms would be necessary between phases until they were joined together. Details of temporary trenches/berms should be indicated on the plans.

**26. Drawing 15:** Topsoil and cover vegetation should be provided over the sideslope and perimeter berm [Detail 3/15]. Also, down slope of the berm, the detail indicates a geocomposite exposed to the atmosphere; this should be covered with soil and cover vegetation.

The scope and extent of the perimeter berm should be indicated in plan view [Drawing 3]. The compaction requirement for the perimeter berm and liner anchor trench should be indicated and the appropriate spec section cited.

A typical letdown structure for conveyance of stormwater should be added [Comment 21]. The locations of letdown structures should be indicated in plan views.

Detail 1/15: The permeabilities for the 18" compacted clay, 6" gas venting layer, and 12" thick protective cover are murky/indistinct on the detail.

**27. Drawing 18:** Details of connectors for removal of leachate from tanks should be indicated and covered in the specs and in operating procedures. Provisions for tank water level monitoring/indicating devices and procedures should be covered in plans, technical specifications, and operating narrative.

If you have any questions or if I can be of service, please call me at me at 501-682-0607.

Sincerely,



Rodger Payne  
Permit Engineer

cc: Ken Bown, Genesis Environmental Consulting, Inc.  
Kevin Hodges, Sunray Services, Inc.  
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