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September 30, 1996

Mr. Mike Hood, P.E.
Chief, Solid Waste Division
Arkansas Department of Pollution Control and Ecology
8001 National Drive, P.O. Box 8913
Little Rock, AR 72219-8913

RECEIVED

SEP 30 1996

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SUBJECT: Annual Engineering Report
Class IV Landfill, Sunray Services, Inc.
Tontitown, Arkansas

Leander 162-SR-2
72-0144

Dear Mr. Hood:

Genesis Environmental Consulting, Inc. (GEC) has prepared the 1996 Annual Engineering Report, in accordance with Section 22.619 for the Sunray Services, Inc. (Sunray) Class IV Landfill (Permit 162-SR-2 Site 4) located in Washington County near Tontitown, Arkansas. Enclosed are two copies of the 1996 Annual Engineering Report.

If after your review of the report you have any questions, please call at your convenience

Sincerely,
GENESIS ENVIRONMENTAL CONSULTING, INC.



Ken Bown, PE
Senior Engineer

cc: Kevin Hodges
enclosure: Eng. Report
c:/9541/classiv/adpceltr.doc

1996 ANNUAL ENGINEERING REPORT

FOR

SOLID WASTE CLASS IV LANDFILL

**TONTITOWN, ARKANSAS
SUNRAY SERVICES, INC.**

**SOLID WASTE DISPOSAL FACILITY
SITE 4 (PERMIT NO. 162-SR-2)**

PREPARED FOR:

SUNRAY SERVICES, INC.

AND

**THE ARKANSAS DEPARTMENT OF POLLUTION
CONTROL & ECOLOGY**

PREPARED BY:

GENESIS ENVIRONMENTAL CONSULTING, INC.

SEPTEMBER 1996

TABLE OF CONTENTS

1.	INTRODUCTION	1
2.	SITE INFORMATION	3
2.1	SITE PERSONNEL	3
2.2	ACCESS ROADS	3
2.3	STORMWATER AND EROSION CONTROL	4
2.4	WEATHER AND MONTHLY PRECIPITATION	4
3.	REMAINING VOLUME AND SITE LIFE	5
3.1	REMAINING VOLUME	5
3.2	SITE LIFE	6
4.	COMPLIANCE WITH PERMIT AND REGULATION 22	7
5.	OPERATING PLAN CHANGES	8
6.	STORMWATER CONTROLS	9
7.	LANDFILL CLOSURE ACTIVITIES	10
8.	REMEDIAL, CORRECTIVE ACTIONS, AND PERMIT COMPLIANCE	11
9.	CONCLUSIONS	12

TABLES

TABLE 1	1995 RAINFALL SUMMARY	4
TABLE 2	SUMMARY OF WASTE AND SOIL PLACEMENT	5

FIGURES

FIGURE 1	SITE LOCATION ON A USGS QUADRANGLE	
FIGURE 2	SITE LAYOUT	
FIGURE 3	PERMIT AND AS-BUILT CONTOURS - CLASS IV LANDFILL	

APPENDICES

APPENDIX A	SOLID WASTE DISPOSAL PERMITS
APPENDIX B	CORRESPONDENCE

1. INTRODUCTION

The Sunray Services, Inc. (Sunray) Tontitown Landfill site is located within the Four County (Northwest) Regional Solid Waste Management District (District) approximately three miles southwest of the City of Tontitown in Washington County, Arkansas. The location on a U.S. Geological Survey Quadrangle map, is shown on FIGURE 1.

Sunray currently holds two Class I Solid Waste Disposal Permits (Permits) at the Tontitown site (Permit Nos. 162-SR-2 and 123-SR-2). These Permits include Class IV disposal. The Permits together make up a single site at Tontitown that includes a Solid Waste Transfer Station, a Compost facility, and a Waste Tire Processing facility. The Tontitown site is comprised of approximately 360 acres. A layout of the Tontitown facility is shown in FIGURE 2.

On September 20, 1991, the Arkansas Department of Pollution Control and Ecology (ADPC&E) issued Sunray two Permits for Class I Landfills at the Tontitown site. Permit No. 162-SR-2 is generally referred to as Site 4 and Permit No. 123-SR-2 is generally referred to as Site 3. Copies of the permits are contained in APPENDIX A.

The Solid Waste Permits for the Landfill operation contain several conditions that require efficient operation, maintenance, and reporting. In the past, Sunray was required by Permit Condition No. 19 of both permits, to have a Registered Professional Engineer prepare a report every 4 months to address the design and operation of the Landfill. However, on September 15, 1995 the Solid Waste Division notified all solid waste permitted landfills that reporting is to be performed on an annual basis (see APPENDIX B).

This document constitutes the 1996 Annual Engineering Report for the Sunray Class IV Landfill in Tontitown and addresses the design and operation for the period July 1, 1995 through June 30, 1996. The 1996 Class IV Landfill Engineering Report is due at the ADPC&E by September 30, 1996. The 1996 Annual Engineering Report discusses the following items as specified in Regulation 22 Section 22.619:

- The volume remaining in the landfill and projected date for opening new cells or areas (Section 3.1)
- The estimated remaining site life considering the current waste stream (Section 3.2)
- Compliance of the facility fill progression with the approved permit plans, specifications, and narrative (Section 4)
- Compliance with the operating requirements of Regulation 22 and permit conditions (Section 2 and Section 4)
- Changes or proposed changes to the operating plan (Section 5)
- Maintenance of stormwater controls (Section 2.3, Section 6)
- Status of capping and closure of completed areas (Section 7)
- Status of remedial or corrective actions taken (Section 8)
- Other items impacting permit compliance

In general, this Annual Engineering Report will pertain to the Class IV Landfill, however, some discussion will include all of the site.

2. SITE INFORMATION

This section discusses various site specific information including the Landfill personnel, access roads, stormwater and erosion control, and the rainfall received at the site during the reporting period.

2.1 Site Personnel

The personnel that are required for the operation of the Tontitown facility are normally kept at 10 persons as shown below:

- Landfill Manager (1)
- Scale House Attendant (1)
- Scraper Operator (3)
- Class IV Landfill Operator (1)
- Class I Landfill Operator (2)
- Transfer Station Operator (1)
- Laborer (1)

In addition, a Sunray engineer, District Manager, and other personnel frequently visit the Tontitown site to monitor the facility and perform various duties. During the 1996 reporting period, Sunray maintained four certified Class I Landfill Operators and three certified Class II Landfill Operators at the site as required by Section 22.607(b). Sunray also schedules personnel for training to obtain Operator Certification whenever classes are available.

2.2 Access Roads

Sunray maintains all weather asphalt and/or gravel access roads at the site and on the Landfills, in compliance with Section 22.613. No major additions to the access roads have been made to the Landfill this reporting period. However, minor maintenance is routinely performed to the existing access roads to the site and within the facility property. This includes the placement of rock (chert) generated from the on-site soil screening process. Facilities are available and hours of access are maintained as per Section 22.613 (b)(d).

2.3 Storm Water and Erosion Control

In the area of stormwater control, minor improvements have been made to improve the existing drainage systems at the site. Routine maintenance for the control of erosion on the Landfill cap and drainage pathways is performed on an

as-needed basis and includes application of cover material, riprap, seeding, mulching, and fertilizer. See Section 6 for additional discussions of stormwater controls.

2.4 Weather and Monthly Precipitation

Sunray maintains a rain gage at the site and keeps a daily log of the amount of rainfall received. In addition, the site temperature (high and low), sky conditions, and wind direction is also documented on a daily basis. A monthly summary of the rainfall at the site is shown below in TABLE 1. Information regarding other conditions at the site are kept on file at the Landfill office.

JULY 1995	5.0
AUGUST	1.0
SEPTEMBER	3.8
OCTOBER	3.4
NOVEMBER	3.6
DECEMBER	3.6
JANUARY 1996	6.3
FEBRUARY	0.3
MARCH	0.6
APRIL	5.8
MAY	3.1
JUNE	7.0
TOTAL RAIN	43.5 Inches

3. REMAINING VOLUME AND SITE LIFE

3.1 REMAINING VOLUME

The active Class IV Landfill began receiving waste in 1992 and covers an area of approximately 11 acres. During this reporting period the Class IV Landfill received waste from the larger cities including Springdale, Fayetteville, Rogers, Harrison, and many smaller cities and towns. TABLE 2 lists the waste placed in the Landfill on a volume basis (cubic yards) and a weight basis (tons). In addition, the approximate soil cover placed on the Landfill is presented.

**TABLE 2
SUMMARY OF WASTE AND SOIL PLACEMENT**

MONTH	WASTE (C.Y.)	WASTE (TONS)	SOIL PLACEMENT (C.Y.) *
JULY 1995	11,506	2,800	1,294
AUGUST	11,314	2,278	1,139
SEPTEMBER	9,991	1,867	973
OCTOBER	13,355	2,865	1,830
NOVEMBER	11,607	2,134	1,267
DECEMBER	5,814	1,189	998
JANUARY	6,075	1,186	602
FEBRUARY	8,864	1,696	755
MARCH	8,651	1,494	781
APRIL	14,452	2,526	1,536
MAY	17,462	3,238	1,754
JUNE 1996	16,971	3,590	1,510
TOTAL	136,062	26,863	14,439
AVERAGE	11,339	2,239	1,203

* Weekly Soil Placement

As shown in TABLE 2, the Class IV volume received during the 1996 reporting period is approximately 136,062 cubic yards (C.Y.) A total of approximately 14,439 C.Y. (loose) of weekly and interim soil covers were placed on the waste during the reporting period. The approximate Class IV airspace used for

placement of waste and cover material during the 1996 reporting period is 100,334 cy as shown below.

[136,062 cy (waste) + 14,439 cy (soil)] x 2/3 (compaction) = 100,334 cy of air space consumed during the reporting period

3.2 SITE LIFE

The active Class IV Landfill has almost reached its permitted capacity and will be closed in early 1997. FIGURE 3 presents a drawing of the Class IV Landfill that depicts the "Permitted Contours" and the August 1, 1996 "As-built" Contours. As of June 30, 1996 it is estimated that there was approximately 66,900 cy of air space remaining in the Landfill, for Class IV waste and weekly cover material. Based on an average consumption of 100,334 cy per year and allowing for a final cover system it is estimated (as of June 30, 1996) there was approximately 0.7 years of life remaining in the existing Class IV Landfill.

Sunray is currently preparing a permit application for a new Class IV Landfill at the Tontitown site. The Pre-Application and Certificate of Need approval from the District has already been submitted to the ADPC&E. In addition, the ADPC&E performed a Pre-Site Investigation of the proposed location. Sunray expects to submit the Class IV Permit Application to ADPC&E in October 1996.

4. COMPLIANCE WITH PERMIT AND REGULATION 22

Sunray manages the Tontitown Landfill in accordance with the applicable requirements of the Landfill Permits (Permit Nos. 162-SR-2 and 123-SR-2) and Regulation 22 (Solid Waste Management Code). FIGURE 2 presents a overall layout of the Tontitown site. FIGURE 3 presents a drawing of the Class IV Landfill at a scale of 1" = 100'. In addition, FIGURE 3 depicts the "Permitted Contours" and the August 1, 1996 "As-built" Contours. As shown, the Landfill is within the permitted area and vertical height limitations as established by the Permit.

The Landfill was constructed with a bottom liner system consisting of 24" thick layer of compacted clay, 12" thick layer of gravel, and a leachate collection system that gravity drains to a leachate storage tank. The landfill is operated using the area fill method with lift heights of no more than 15 feet. The working face is a sloped surface upon which the waste is spread in layers. Equipment used for waste compaction includes a D-7 dozer (performs daily compaction) and a 826-C Compactor (performs compaction every 8-10 days).

Since the Class IV operation is included within the Class I Permits, specific items concerning fill progression and other permit narrative specifications are generally not specific to just the Class IV operation. However, the existing fill progression methodology and procedures are acceptable to meet the conditions of the operational standards of Regulation 22 and the solid waste permits. An updated operation narrative will be submitted as part of the pending application for the new Class IV Landfill as per Section 22.618 (c).

According to records obtained from the Central Files at the ADPC&E, the Tontitown facility is inspected almost each month by the Solid Waste Division. Many of these inspections reported no deficiencies, however, minor deficiencies were noted on several inspections during the reporting period. Sunray responds to each minor deficiency, noted by the ADPC&E Inspections, by correcting the noted problem and sending a written response to the Solid Waste Division of the ADPC&E.

5. OPERATING PLAN CHANGES

Sunray has made few operational changes and improvements at the Landfill during the 1996 reporting period. The major changes and revisions in the operation at the Tontitown site include the following:

- Construction of an expansion to the South Sedimentation Basin
- New equipment utilized at the site

Construction of an expansion to the South Sedimentation Basin was completed during this reporting period. The South Sedimentation Basin collects stormwater that drains from mainly the east and south portions of Site 4 (Class 1 Landfill) and almost all of the Class IV Landfill. This site improvement should allow the facility to hold a larger volume of stormwater longer and allow more manageable NPDES discharges.

During the 1996 reporting period the major equipment utilized by Sunray at the Class IV Landfill included a Caterpillar D-6 Dozer and 826B Compactor.

6. STORMWATER CONTROLS

The site has a three drainage and sedimentation basin systems, located at the west, south, and east portions of the facility, to control stormwater at the site. Stormwater run-off from the Class I Landfills, Class 4 Landfills, and other areas within the Permitted Landfill are directed to these sedimentation basins. During the 1996 reporting period Sunray has performed maintenance activities on the stormwater systems at the Tontitown site to properly control stormwater run-off and prevent stormwater run-on at the site.

Maintenance activities include removal of silt from the drainage pathways, placement of hay bales in strategic locations, placement of riprap, and installation of perimeter silt fences. In addition, the East Sedimentation Basin was drained, the sediments were removed, and the basin was put back into service. Sunray also enlarged the South Sedimentation Basin to increase stormwater retention and improve settling of the suspended solids in the stormwater.

During the 1996 reporting period, Sunray's monthly Discharge Monitoring Reports (DMR) were in compliance with NPDES General Permit ARG160003 and no stormwater monitoring parameters were reported in excess of the permit requirements.

7. LANDFILL CLOSURE ACTIVITIES

The active Class IV Landfill at Tontitown is nearing its final permit contours. Sunray will begin closure activities in 1997 in accordance with the permit conditions and Regulation 22 requirements (see APPENDIX A).

During the 1996 reporting period Sunray revegetated most of the Landfill that was not under construction. Planting occurred during the months of August 1995 and between March 15 and May 1, 1996.

During revegetation of the Landfill the following materials were utilized:

- Lime applied at approximately 500 lb./acre
- Fertilizer (13-13-13)
- Seed applied at approximately 100 lb/acre (wheat, rye grass, rye mixture)

As indicated, a final cap will be constructed on the Class IV Landfill during the 1997 reporting period. Interim vegetation has been completed on areas to prevent erosion. As soon as the final cap is completed in various areas of the Landfill, additional lime, fertilizer, and seed will be applied to protect the soil from erosion and provide an adequate vegetative cover.

8. REMEDIAL, CORRECTIVE ACTIONS, AND PERMIT COMPLIANCE

Sunray's Class IV Landfill at Tontitown, Arkansas appears to be in compliance with its Solid Waste Permit, and NPDES Permits during the reporting period. The site has consistently received inspection ratings of satisfactory from the Solid Waste Division at the ADPC&E. In addition, all violations noted during an inspection have been responded to in an efficient and timely manner.

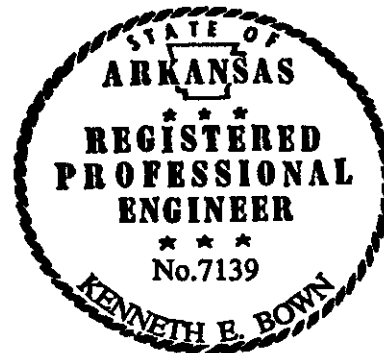
9. CONCLUSIONS

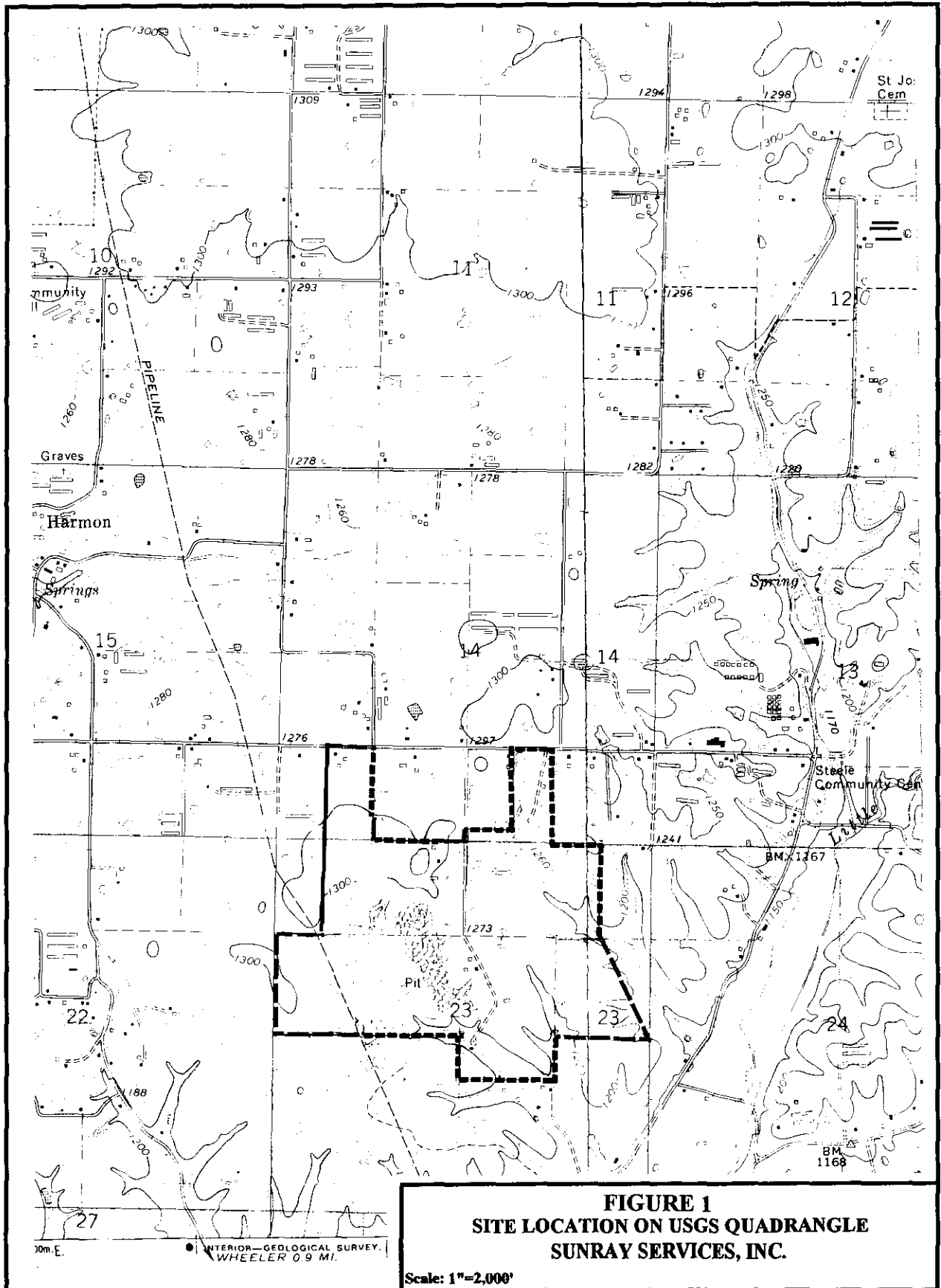
The solid waste Class IV Landfill at Sunray's Tontitown, Arkansas facility was inspected on numerous occasions throughout the 1996 reporting period to observe operational compliance with permit conditions, permit plans, and specifications. As indicated in this 1996 Annual Engineering Report, the Class IV Site 4 solid waste disposal facility is being operated in accordance with their Solid Waste Permits (0123-SR-2 and 0162-SR-2) and Regulation 22 requirements.

The 1996 Annual Engineering Report for the Site 4 Solid Waste Class IV Landfill was prepared by or under the direction of Kenneth E. Bown, a Professional Engineer licensed in the State of Arkansas.



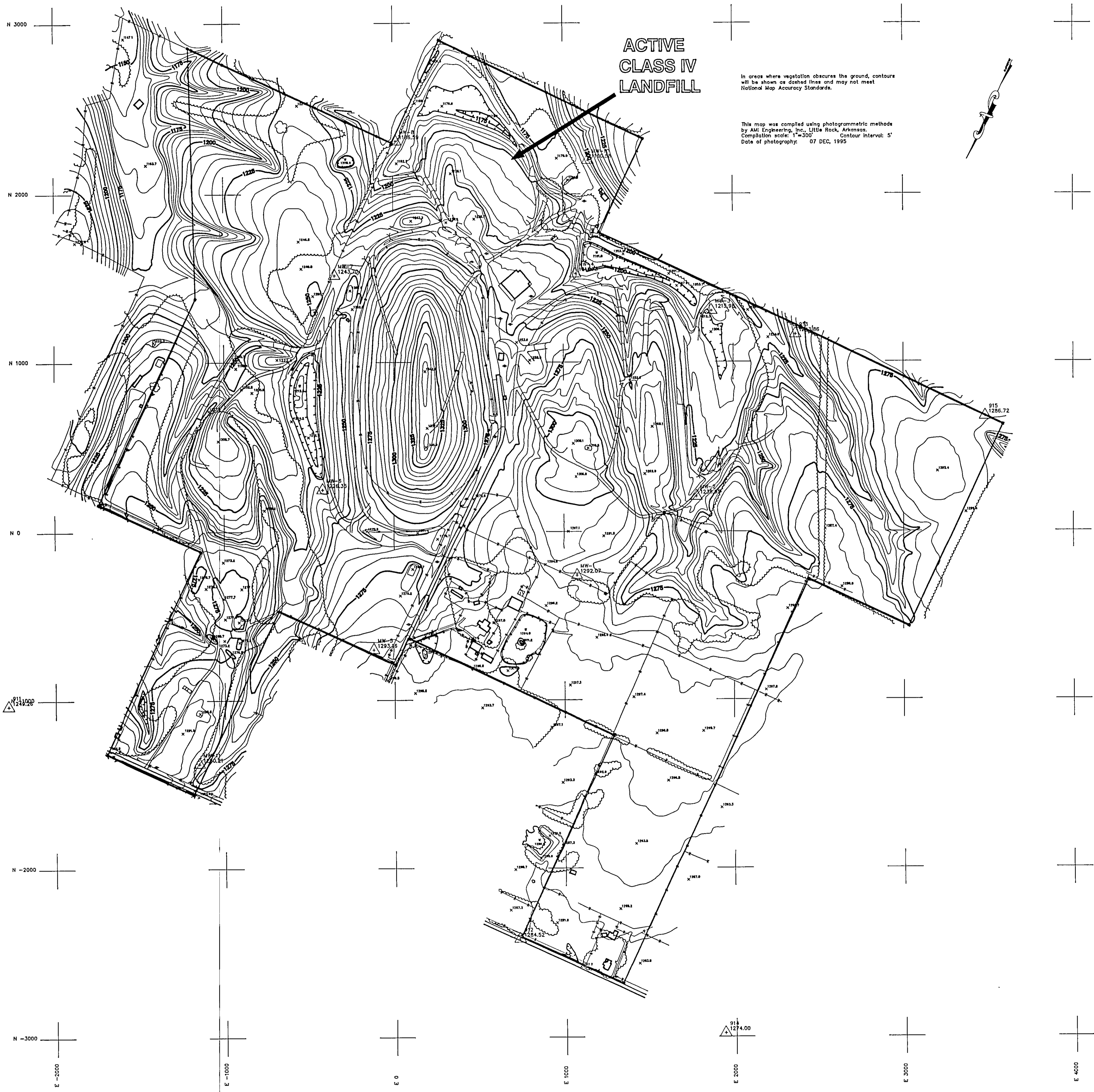
Kenneth E. Bown, P.E.





APPENDIX A

SOLID WASTE PERMITS

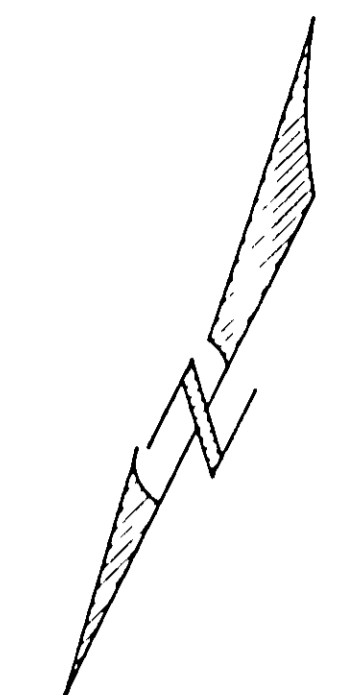
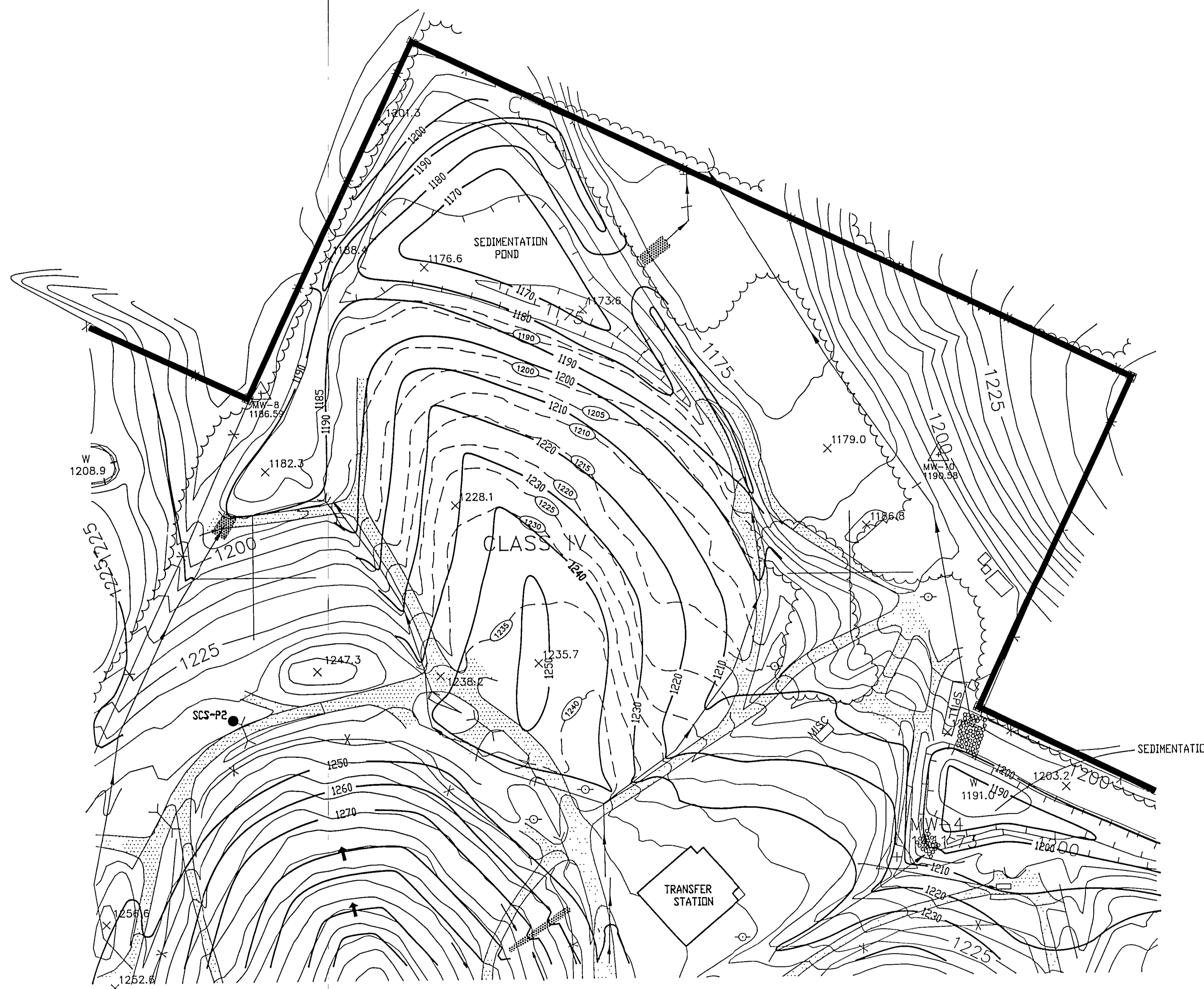


ACTIVE
CLASS IV
LANDFILL

In areas where vegetation obscures the ground, contours will be shown as dashed lines and may not meet National Map Accuracy Standards.

This map was compiled using photogrammetric methods by AMI Engineering, Inc., Little Rock, Arkansas. Completion date: 11-30-95 Contour Interval: 5' Date of photography: 07 DEC, 1995

FIGURE 2		
CLASS IV ANNUAL ENGINEERING REPORT SITE PLAN - ORIGINAL CONTOURS		
TONTOWN, ARKANSAS SUNRAY SERVICES, INC. / USA WASTE SERVICES, INC.		
Design by: KEB	GEC GENESIS ENVIRONMENTAL CONSULTING, INC. 11400 West Baseline Road Little Rock, AR 72209	Project No.: 9541
Checked by: BE		Date: SEPT 1996
Drawn by: JFH		Scale: AS SHOWN



- LEGEND**
- GRAVEL ROAD
 - MONITORING WELLS
 - MW-1
 - LANDFILL PIEZOMETERS
 - SCS-P4
 - RIP-RAP
 - AUGUST 1, 1996 AS-BUILT CONTOURS
 - PERMITTED FINAL CONTOURS
 - SURFACE WATER DRAINAGE
 - PROPERTY LINE

FIGURE 3

**CLASS IV ANNUAL ENGINEERING REPORT
PERMITTED AND AS-BUILT CONTOURS**

IONTOWN, ARKANSAS
SUNRAY SERVICES, INC. / USA WASTE SERVICES, INC.

Design by: KEB		GENESIS ENVIRONMENTAL CONSULTING, INC.	Project No.: 9541
Checked by: BE		11400 West Baseline Road	Date: SEPT 1996
Drawn by: JFH		LITTLE ROCK, AR 72209	Scale: 1"=100'

C:\WORK\GEC\9541\TSK16\CLASS4

ARKANSAS DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
8001 National Drive
Little Rock, Arkansas 72209

PERMIT
FOR THE CONSTRUCTION AND/OR OPERATION
OF A SOLID WASTE DISPOSAL
FACILITY

CLASS I

Permit No. 0123-SR-2

EFFECTIVE DATE September 20, 1991

Sunray Services, Inc.
105 Old Missouri Rd.
Springdale, Arkansas 72765

Engineering: SCS Engineers
10401 Holmes Road
Suite 400
Kansas City, Missouri 64131

This permit is your authority to construct and/or operate the Solid Waste Disposal Facility set forth in your application dated February 18, 1991. This permit is issued pursuant to the provisions of the Arkansas Solid Waste Management Act (Act 237 of 1971; Sec. 82-2701 et seq., Ark. Stats.), hereinafter called the "Act", the Arkansas Solid Waste Management Code, hereinafter called the "Code", and all other applicable rules and regulations of the Department of Pollution Control and Ecology, hereinafter called "Department", and the following terms and conditions:

1. The disposal facility shall be constructed, maintained, and operated in accordance with the final plans and specifications as approved by the Department and in compliance with all applicable provisions of the Act, the Code, and all other applicable rules and regulations.
2. This permit shall automatically terminate unless construction of the disposal facility has been commenced within N/A day(s) of the date hereof and completed with all reasonable diligence. The Department shall be notified in writing when the disposal facility has been completed in order that it may be inspected.
3. The disposal facility shall be operated by qualified personnel and maintained in good operating condition at all times.
4. This permit may be revoked or modified whenever, in the opinion of the Department, the facilities are no longer in compliance with the Act, the Code, and applicable rules and regulations. This permit shall not relieve the permittee, its agents or employees, from compliance with all provisions of the Act and the Code.
5. Nothing herein contained shall be construed as releasing the permittee from any liability for damage to persons or property by reason of the installation, maintenance, or operation of the disposal facility.
6. This permit is issued in reliance upon the statements and representations made in the application and the plans and specifications and the Department has no responsibility for the adequacy or proper functioning of the disposal facility.

PLEASE SEE ATTACHED SHEET FOR ADDITIONAL CONDITIONS.

Approved:

DEPARTMENT OF POLLUTION CONTROL & ECOLOGY

By [Signature]
for Director

20 Sept 91
Date

ADDITIONAL CLASS I PERMIT MODIFICATIONS
PERMIT NO. 123-SR-1
September 20, 1991
Page 2 of 6

7. Backhoe test pits or borings shall be installed at 200 foot centers in the proposed 16 acre borrow area. The material encountered must be logged by a registered Engineer or Geologist. Final grades must be adjusted downward based upon the quality and quantity of material available. Upon completion of the geotechnical work a summary report must be submitted to the Department. The report shall contain a revised soil budget for the proposed modification.
8. A 4 foot thick cap shall be incorporated into the final grade design. The cap design shall consist of the following from top to bottom:
 - 6 inches of vegetated topsoil.
 - 1 foot chert-soil drainage layer.
 - 2 feet of compacted clay. The clay cap material must have greater than 35% passing the No. 200 sieve or if all chert over 1 inch in diameter is excluded, 30% passing the No. 200 sieve. Clay cap material is to be segregated and stockpiled in a designated location. Prior to placement on completed portions of the fill. A minimum of 10 representative samples shall be collected from the stockpile. Sieve analyses shall be conducted on each sample to insure conformance with the compliance standard. Material containing an excessive chert content must not be utilized in the compacted clay layer. The clay must be compacted to 95% of standard proctor density and wet of optimum moisture content in 8 inch lifts. Density test shall be performed on each lift every 10,000 square feet of surface area. Permeability of the cap shall not be greater than .000001 cm per second.
 - 6 inches of daily cover.
9. A fill sequence must be developed for the closure plan and approved by the Department prior to initiating the operation. The fill sequence must provide for the orderly progression of the closure plan in order to provide for the following minimization of disturbed areas on site, the phased construction of the cap in order to prevent erosion and to prevent excessive closure cost at the termination of fill operations, and finally, to allow fill operations to cease if suitable quality soils are depleted.
10. Sunray Services shall submit a plan for a hydrogeologic study of the landfill complex. The plan must be submitted within 30 days of the approval date of this modification. The plan can be altered by the Solid Waste Division staff prior to approval.

The plan must include the installation of a series of piezometers into the waste mass in order to assess the effectiveness of the existing leachate collection system and the potential for leakage through the bottom liner of the fills. At least three piezometers must be installed in each fill area. The structures shall be constructed in the following manner:

- each hole must extend to the bottom of the waste mass.
- A minimum of 4 inch I.D. slotted screen must be used with a clean, coarse graded, sand filter pack. The slotted screen and filter pack must extend to within 10 feet of the final grade. A bentonite plug shall extend from 10 feet to the surface.

11. The following materials are suitable for disposal within the Class IV fill area:

- masonry debris
- roofing debris
- stumps and rocks
- appliances and auto bodies
- pallets
- tires shredded or chipped

Any other types of waste must have written authorization from the Department to be placed into the Class IV area.

12. Additional erosion control measures can be required by the Department staff. If the staff determines that excessive erosion is occurring the company will be notified. Additional erosion control measures consisting of mulch, sediment traps, erosion control matting or fabric, terraces and run off let down structures may be required. Time frames for the completion of additional erosion control measures will be specified by the staff. All additional measures and deadlines can be appealed to the Director.

13. The Class IV bottom liner design shall consist of one foot of clean washed limestone and two feet of recompacted clay meeting the following specifications:

The bottom 8 inches can be compacted in place. The other 16 inches shall be taken out and recompacted in eight inch lifts.

Each of the 8 inch layers shall be compacted to 95% standard proctor density.

Each of the 8 inch layers shall be tested and certified as to permeability of no more than 0.000001 cm per second. Density test shall be conducted on each 10,000 square feet of liner on each lift.

The soil-aggregate mixture must have more than 30% passing No. 200 or 30% if all chert over one inch is excluded from the bottom liner material.

The leachate collection area shall be constructed to drain by gravity.

The leachate collection trench shall be double lined with three feet of clay and a 40 mil HDPE liner.

14. A revised set of blueprints shall be submitted that shows all changes to the SCS June 1991 first submittal. The revised plans shall include the revised soil budget addressed in condition #1.
15. The modification application dated 2/18/91 and received on 8/1/91 must be signed by a corporate officer.
16. Post Closure maintenance shall be a minimum of ten years. The Post Closure care and maintenance period may be extended to provide adequate leachate treatment if deemed necessary by the Department.
17. Extraction wells shall be installed in 1992 on Sunray 3 and Sunray 4. Preliminary and final plans shall be presented for approval by registered PG & PE.
18. The Director on November 2, 1991 asked the staff to work up a draft ban on landfilling in the Boone formation. Therefore, if the PC&E Commission adopts this ban as policy this landfill may be closed out before reaching final grades if there becomes other adequate landfill capacity within the region.
19. Proper preparation of the site shall be supervised and reported in writing to the Department by a Registered Engineer with reports submitted every four months that address the following components of the design and operation: surface water diversion, access roads on site, proper compaction of waste, amount of waste received, final cap construction, revegetation of completed areas, quantity of leachate removed from trenches, and where the leachate was properly disposed of. In addition compaction density test shall be conducted on every 10,000 square feet of clay liner.
20. Each of the groundwater monitoring wells shall be sampled quarterly unless more frequent monitoring is deemed necessary by the Department.

Results are to be submitted directly to the Department from the contract laboratory and shall include the following parameters: Ammonia (as N), Bicarbonate, Calcium, Chloride, Iron, Magnesium, Manganese, Nitrate, Potassium, Sodium, Sulfate, Chemical Oxygen Demand, Total Dissolved Solids, pH, Arsenic, Barium, Cadmium, Chromium, Cyanide, Lead, Mercury, Selenium, Silver and, the Volatile Organic Compounds listed in Appendix I of 40 CFR Part 258 - the Solid Waste Disposal Facility Criteria; Proposed Rule. All sampling parameters are subject to revision by Department at any time.

21. A statistical method for evaluating increases (or decrease in the case of pH) in inorganic parameters in groundwater must be selected and approved by the Department prior to the receipt of waste at the facility. In addition a contingency plan outline must be developed and approved by the Department listing the logical sequence of measures to be taken by the permittee in the event of a statistically significant increase in inorganic parameters or a positive detection of organic parameters.
22. This facility is for the disposal of all waste eligible for a Class I sanitary landfill including all special materials (as listed in Appendix "A" of the Arkansas Solid Waste Management Code-March 23, 1984) except small quantities of exempt hazardous waste. All other wastes requiring specified written authorization as identified in the Arkansas Solid Waste Management Code shall obtain this authorization from the Arkansas Department of Pollution Control and Ecology prior to disposal.
23. Any change in ownership or control of the operation of this landfill will be considered a major modification of the permit. Failure to notify the Department of a change in ownership or a change of operators will be cause for revocation of this permit.
24. No wet waste or liquid waste shall be received at the facility. Wet waste is defined as material which will not support equipment and typically contains less than 30% solids.
25. Leachate will be trucked to a sewage treatment plant or disposed of in an alternate manner approved in advance by the Department. The quality and quantity of leachate produced shall be analyzed and measured as long as significant amounts are produced as determined by the Department. Leachate storage capability is subject to Department approval, based on actual leachate flow rate. Department approval must be received prior to any changes in leachate disposal methods. Leachate analysis shall be conducted prior to disposal, or as directed by the Department. Volume measurements shall be made weekly. Results shall be submitted directly from the contract laboratory to the Department after each monitoring period, and shall include the following: Volume produced, Chlorides, Total Dissolved Solids, Chemical Oxygen Demand, Biological Oxygen Demand, pH, Zinc, Copper, Nickel, Lead, Chromium, and Cadmium.

26. Quality control records for the construction of the clay liner and the artificial liner shall be maintained on site for review by regulatory officials.
27. Seeding and soil stabilization shall be conducted in the spring and fall on all exposed surfaces. Furthermore, revegetation shall be accomplished immediately after final elevations are completed. Water for irrigation from the sediment basins may be used.
28. The initial amount of financial assurance required is \$61,500.00. The instruments used must be in the exact form set forth in Appendix "B" of the Code and must be filed with the Department before the permit can become effective. A portion or all of the financial assurance may be held by the Department beyond the normal closure dates as set forth in the Code, due to post closure consideration for maintenance of the leachate collection system.

This financial assurance amount must be maintained at the initial amount at all times in order to cover the provisions of Act 531 of 1989, unless other arrangements are met to cover these provisions. Any other arrangements must be approved in writing by the Department. No waste disposal is to take place until financial arrangements are approved by the Department.
29. The as-built grades/elevations as shown on the approved blueprints shall not be adjusted due to settling/consolidation of the waste mass. Therefore, the actual final grades/elevations after closure/post closure will be lower than as-built grades/elevations as shown on the approved blueprints.
30. All cover vegetation shall be mowed one time each year during the growth season so that proper inspection of the cover can be made.
31. Any ash or sewage treatment plant sludges other than from a strictly domestic source shall be disposed of in a monofill with double liners, impervious cap, leachate collection system and separate monitoring well system.
32. The Department, its employees, agents or any authorized person shall have the right to enter the property at any time for any reason as set out in the Arkansas Solid Waste Code for the purpose including but not limited to taking of samples, inspection, and any other enforcement or engineering action, without interference or delay from the permittee.
33. The operation and closure of this landfill is proposed to continue past the time that which new federal regulations will be in place, therefore the operation, construction, and closure/post closure shall also be subject to the Resource Conservation and Recovery ACT (RCRA) requirements.

ARKANSAS DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
8001 National Drive
Little Rock, Arkansas 72209

PERMIT
FOR THE CONSTRUCTION AND/OR OPERATION
OF A SOLID WASTE DISPOSAL
FACILITY

CLASS I

Permit No. U162-SR-2

EFFECTIVE DATE September 20, 1991

Sunray Services, Inc.
105 Old Missouri Road
Springdale, Arkansas 72765

Engineering: SCS Engineers
10401 Holmes Road
Suite 400
Kansas City, Missouri 64131

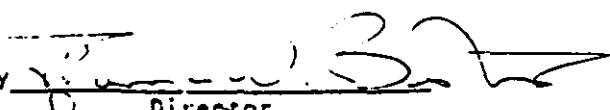
This permit is your authority to construct and/or operate the Solid Waste Disposal Facility set forth in your application dated February 20, 1991. This permit is issued pursuant to the provisions of the Arkansas Solid Waste Management Act (Act 237 of 1971; Sec. 82-2701 et seq., Ark. Stats.), hereinafter called the "Act", the Arkansas Solid Waste Management Code, hereinafter called the "Code", and all other applicable rules and regulations of the Department of Pollution Control and Ecology, hereinafter called "Department", and the following terms and conditions:

1. The disposal facility shall be constructed, maintained, and operated in accordance with the final plans and specifications as approved by the Department and in compliance with all applicable provisions of the Act, the Code, and all other applicable rules and regulations.
2. This permit shall automatically terminate unless construction of the disposal facility has been commenced within N/A day(s) of the date hereof and completed with all reasonable diligence. The Department shall be notified in writing when the disposal facility has been completed in order that it may be inspected.
3. The disposal facility shall be operated by qualified personnel and maintained in good operating condition at all times.
4. This permit may be revoked or modified whenever, in the opinion of the Department, the facilities are no longer in compliance with the Act, the Code, and applicable rules and regulations. This permit shall not relieve the permittee, its agents or employees, from compliance with all provisions of the Act and the Code.
5. Nothing herein contained shall be construed as releasing the permittee from any liability for damage to persons or property by reason of the installation, maintenance, or operation of the disposal facility.
6. This permit is issued in reliance upon the statements and representations made in the application and the plans and specifications and the Department has no responsibility for the adequacy or proper functioning of the disposal facility.

PLEASE SEE ATTACHED SHEET FOR ADDITIONAL CONDITIONS.

Approved:

DEPARTMENT OF POLLUTION CONTROL & ECOLOGY

By 
Director

20 Sept 91
Date

ADDITIONAL CLASS I PERMIT MODIFICATIONS
PERMIT NO. 162-SR-2
September 20, 1991
Page 2 of 6

7. Backhoe test pits or borings shall be installed at 200 feet centers in the proposed 16 acre borrow area. The material encountered must be logged by a registered Engineer or Geologist. Final grades must be adjusted downward based upon the quality and quantity of material available. Upon completion of the geotechnical work a summary report must be submitted to the Department. The report shall contain a revised soil budget for the proposed modification.
8. A 4 foot thick cap shall be incorporated into the final grade design. The cap design shall consist of the following from top to bottom:
 - 6 inches of vegetated topsoil.
 - 1 foot chert-soil drainage layer.
 - 2 feet of compacted clay. The clay cap material must have greater than 35% passing the No. 200 sieve or if all chert over 1 inch in diameter is excluded, 30% passing the No. 200 sieve. Clay cap material is to be segregated and stockpiled in a designated location. Prior to placement on completed portions of the fill. A minimum of 10 representative samples shall be collected from the stockpile. Sieve analyses shall be conducted on each sample to insure conformance with the compliance standard. Material containing an excessive chert content must not be utilized in the compacted clay layer. The clay must be compacted to 95% of standard proctor density and wet of optimum moisture content in 8 inch lifts. Density test shall be performed on each lift every 10,000 square feet of surface area. Permeability of the cap shall not be greater than .000001 cm per second.
 - 6 inches of daily cover.
9. A fill sequence must be developed for the closure plan and approved by the Department prior to initiating the operation. The fill sequence must provide for the orderly progression of the closure plan in order to provide for the following minimization of disturbed areas on site, the phased construction of the cap in order to prevent erosion and to prevent excessive closure cost at the termination of fill operations, and finally, to allow fill operations to cease if suitable quality soils are depleted.
10. Sunray Services shall submit a plan for a hydrogeologic study of the landfill complex. The plan must be submitted within 30 days of the approval date of this modification. The plan can be altered by the Solid Waste Division staff prior to approval.

The plan must include the installation of a series of piezometers into the waste mass in order to assess the effectiveness of the existing leachate collection system and the potential for leakage through the bottom liner of the fills. At least three piezometers must be installed in each fill area. The structures shall be constructed in the following manner:

- each hole must extend to the bottom of the waste mass.
- A minimum of 4 inch I.D. slotted screen must be used with a clean, coarse graded, sand filter pack. The slotted screen and filter pack must extend to within 10 feet of the final grade. A bentonite plug shall extend from 10 feet to the surface.

11. The following materials are suitable for disposal within the Class IV fill area:

- masonry debris
- roofing debris
- stumps and rocks
- appliances and auto bodies
- pallets
- tires shredded or chipped

Any other types of waste must have written authorization from the Department to be placed into the Class IV area.

12. Additional erosion control measures can be required by the Department staff. If the staff determines that excessive erosion is occurring the company will be notified. Additional erosion control measures consisting of mulch, sediment traps, erosion control matting or fabric, terraces and run off let down structures may be required. Time frames for the completion of additional erosion control measures will be specified by the staff. All additional measures and deadlines can be appealed to the Director.

13. The Class IV bottom liner design shall consist of one foot of clean washed limestone and two feet of recompacted clay meeting the following specifications:

The bottom 8 inches can be compacted in place. The other 16 inches shall be taken out and recompacted in eight inch lifts.

Each of the 8 inch layers shall be compacted to 95% standard proctor density.

Each of the 8 inch layers shall be tested and certified as to permeability of no more than 0.000001 cm per second. Density test shall be conducted on each 10,000 square feet of liner on each lift.

The soil-aggregate mixture must have more than 30% passing No. 200 or 30% if all chert over one inch is excluded from the bottom liner material.

The leachate collection area shall be constructed to drain by gravity.

The leachate collection trench shall be double lined with three feet of clay and a 40 mil HDPE liner.

14. A revised set of blueprints shall be submitted that shows all changes to the SCS June 1991 first submittal. The revised plans shall include the revised soil budget addressed in condition #1.
15. The modification application dated 2/18/91 and received on 8/1/91 must be signed by a corporate officer.
16. Post Closure maintenance shall be a minimum of ten years. The Post Closure care and maintenance period may be extended to provide adequate leachate treatment if deemed necessary by the Department.
17. Extraction wells shall be installed in 1992 on Sunray 3 and Sunray 4. Preliminary and final plans shall be presented for approval by registered PG & PE.
18. The Director on November 2, 1991 asked the staff to work up a draft ban on landfilling in the Boone formation. Therefore, if the PC&E Commission adopts this ban as policy this landfill may be closed out before reaching final grades if there becomes other adequate landfill capacity within the region.
19. Proper preparation of the site shall be supervised and reported in writing to the Department by a Registered Engineer with reports submitted every four months that address the following components of the design and operation: surface water diversion, access roads on site, proper compaction of waste, amount of waste received, final cap construction, revegetation of completed areas, quantity of leachate removed from trenches, and where the leachate was properly disposed of. In addition compaction density test shall be conducted on every 10,000 square feet of clay liner.
20. Each of the groundwater monitoring wells shall be sampled quarterly unless more frequent monitoring is deemed necessary by the Department.

Results are to be submitted directly to the Department from the contract laboratory and shall include the following parameters: Ammonia (as N), Bicarbonate, Calcium, Chloride, Iron, Magnesium, Manganese, Nitrate, Potassium, Sodium, Sulfate, Chemical Oxygen Demand, Total Dissolved Solids, pH, Arsenic, Barium, Cadmium, Chromium, Cyanide, Lead, Mercury, Selenium, Silver and, the Volatile Organic Compounds listed in Appendix I of 40 CFR Part 258 - the Solid Waste Disposal Facility Criteria; Proposed Rule. All sampling parameters are subject to revision by Department at any time.

21. A statistical method for evaluating increases (or decrease in the case of pH) in inorganic parameters in groundwater must be selected and approved by the Department prior to the receipt of waste at the facility. In addition a contingency plan outline must be developed and approved by the Department listing the logical sequence of measures to be taken by the permittee in the event of a statistically significant increase in inorganic parameters or a positive detection of organic parameters.
22. This facility is for the disposal of all waste eligible for a Class I sanitary landfill including all special materials (as listed in Appendix "A" of the Arkansas Solid Waste Management Code-March 23, 1984) except small quantities of exempt hazardous waste. All other wastes requiring specified written authorization as identified in the Arkansas Solid Waste Management Code shall obtain this authorization from the Arkansas Department of Pollution Control and Ecology prior to disposal.
23. Any change in ownership or control of the operation of this landfill will be considered a major modification of the permit. Failure to notify the Department of a change in ownership or a change of operators will be cause for revocation of this permit.
24. No wet waste or liquid waste shall be received at the facility. Wet waste is defined as material which will not support equipment and typically contains less than 30% solids.
25. Leachate will be trucked to a sewage treatment plant or disposed of in an alternate manner approved in advance by the Department. The quality and quantity of leachate produced shall be analyzed and measured as long as significant amounts are produced as determined by the Department. Leachate storage capability is subject to Department approval, based on actual leachate flow rate. Department approval must be received prior to any changes in leachate disposal methods. Leachate analysis shall be conducted prior to disposal, or as directed by the Department. Volume measurements shall be made weekly. Results shall be submitted directly from the contract laboratory to the Department after each monitoring period, and shall include the following: Volume produced, Chlorides, Total Dissolved Solids, Chemical Oxygen Demand, Biological Oxygen Demand, pH, Zinc, Copper, Nickel, Lead, Chromium, and Cadmium.

ADDITIONAL CLASS I PERMIT CONDITIONS
PERMIT NO. 162-SR-2
September 20, 1991
Page 6 of 6

26. Quality control records for the construction of the clay liner and the artificial liner shall be maintained on site for review by regulatory officials.
27. Seeding and soil stabilization shall be conducted in the spring and fall on all exposed surfaces. Furthermore, revegetation shall be accomplished immediately after final elevations are completed. Water for irrigation from the sediment basins may be used.
28. The initial amount of financial assurance required is \$76,500.00. The instruments used must be in the exact form set forth in Appendix "B" of the Code and must be filed with the Department before the permit can become effective. A portion or all of the financial assurance may be held by the Department beyond the normal closure dates as set forth in the Code, due to post closure consideration for maintenance of the leachate collection system.

This financial assurance amount must be maintained at the initial amount at all times in order to cover the provisions of Act 531 of 1989, unless other arrangements are met to cover these provisions. Any other arrangements must be approved in writing by the Department. No waste disposal is to take place until financial arrangements are approved by the Department.

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APPENDIX B

CORRESPONDENCE



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
 FAX: (501) 682-0611



MEMORANDUM

TO: All Solid Waste Permit Holders
 All Solid Waste Division Personnel

FROM: Mike Hood, Technical Manager *MH*
 Solid Waste Division

DATE: September 15, 1995

SUBJECT: Annual Reporting Under Regulation Number 22

Amendments to Regulation Number 22 became effective on May 7, 1995. The regulation requires all solid waste management facilities to submit annual reports. By copy of this memorandum, all permit holders are hereby notified that annual reports will be due, **BEGINNING IN 1996**, in accordance with the following schedule and special instructions below.

FACILITY TYPE	END OF REPORTING PERIOD	REPORT DUE DATE
Class 1 Landfill	December 31	March 31
Class 3 Landfill	March 31	June 30
Class 4 Landfill	June 30	September 30
Transfer Stations	September 30	December 31
Composting Facilities	September 30	December 31
Material Recovery Facilities	September 30	December 31

The requirements of the amended Regulation Number 22 including this annual operation reporting requirement will supersede any permit condition in conflict with this requirement. Unless in conflict with the requirements of Regulation Number 22, quarterly, tri-annual, and bi-annual operation reporting that may be required by permit conditions can be discontinued.

THIS REQUIREMENT PERTAINS ONLY TO ANNUAL OPERATION REPORTS. IT DOES NOT APPLY TO GROUNDWATER REPORTING REQUIREMENTS. Owners or operators should continue to follow the reporting frequencies identified in your permit or in Regulation Number 22 as applicable.