



Alabama Department of Environmental Management
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December 13, 2018

Mr. Eric Hoge
Environmental Management Division, IMRE-PWE
4488 Martin Road
Redstone Arsenal, Alabama 35898

RE: Redstone Arsenal Landfill
Permit No. 45-03

Dear Mr. Hoge:

Enclosed is the Solid Waste Facility Disposal Permit for the Redstone Arsenal Landfill, Permit No. 45-03. The permit is effective February 6, 2019 and the permit will expire on February 5, 2024.

If you should have any questions, please contact Mr. Jonathan Crosby at the Solid Waste Engineering Section at (334) 270-5644.

Sincerely,

S. Scott Story, Chief
Solid Waste Engineering Section
Land Division

SSS/jc



FINAL DETERMINATION

Permit Renewal

U.S. Army/Redstone Arsenal
IMRE-PWE
4488 Marin Road
Redstone Arsenal, Alabama 35898

Redstone Arsenal Landfill
Permit No. 45-03

December 13, 2018

The U.S. Army Garrison/Redstone Arsenal has submitted to the Alabama Department of Environmental Management (ADEM) an application to continue to operate a construction and demolition waste landfill known as the Redstone Arsenal Landfill (Permit No. 45-03). The waste stream for the Redstone Arsenal Landfill would remain nonputrescible and nonhazardous construction and demolition waste, rubbish as defined by Rule 335-13-1-.03, and friable and non-friable asbestos waste. The service area for the Redstone Arsenal Landfill would remain the Redstone Arsenal Boundary Area. The maximum average daily volume of waste disposed at the Redstone Arsenal Landfill would remain 900 tons per day. All previously approved variances were requested by the applicant and will be granted in the renewed permit.

The Redstone Arsenal Landfill is described as being located in Sections 14 and 23, Township 16 North, Range 5 West. The Redstone Arsenal Landfill facility consists of approximately 75.96 acres with 43.55 acres approved for disposal.

A public comment period was announced by ADEM on October 10, 2018 and ended on November 11, 2018. The permit application and draft permit was available for inspection at the Alabama Department of Environmental Management and on the Alabama Department of Environmental Management Website. The Department received no comments during the comment period.

The Solid Waste Branch has determined that the permit application complies with the requirements of ADEM's Administrative Code Division 13 regulations for a construction and demolition waste landfill.

Technical Contact:

Mr. Jonathan Crosby
Solid Waste Engineering Section
Land Division



SOLID WASTE DISPOSAL FACILITY PERMIT

PERMITTEE: U.S. Army Garrison/Redstone Arsenal

FACILITY NAME: Redstone Arsenal Landfill

FACILITY LOCATION: Southeast $\frac{1}{4}$ of Section 5, Township 5 South, Range 1 West in Madison County, Alabama. The facility consists of 75.96 acres with 43.55 acres approved for disposal.

PERMIT NUMBER: 45-03

PERMIT TYPE: Construction and Demolition

WASTE APPROVED FOR DISPOSAL: The Permittee may accept for disposal nonputrescible and nonhazardous construction and demolition waste, rubbish as defined by Rule 335-13-1-.03, and friable and non-friable asbestos waste.

APPROVED WASTE VOLUME: Average Daily Volume of 900 tons per day

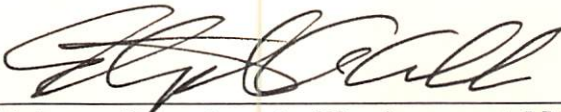
APPROVED SERVICE AREA: Redstone Arsenal Boundary Area

In accordance with and subject to the provisions of the Solid Wastes and Recyclable Materials Management Act, as amended, Code of Alabama 1975, SS 22-27-1 to 22-27-27 ("SWRMMA"), the Alabama Environmental Management Act, as amended, Code of Alabama 1975, SS 22-22A-1 to 22-22A-15, and rules and regulations adopted thereunder, and subject further to the conditions set forth in this permit, the Permittee is hereby authorized to dispose of the above-described solid wastes at the above-described facility location.

ISSUANCE DATE: December 13, 2018

EFFECTIVE DATE: February 6, 2019

EXPIRATION DATE: February 5, 2024


Alabama Department of Environmental Management

**ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
SOLID WASTE PERMIT**

Permittee: U.S. Army Garrison/Redstone Arsenal
IMRE-PWE
4488 Martin Road
Redstone Arsenal, Alabama 35898

Landfill Name: Redstone Arsenal Landfill

Landfill Location: Southeast ¼ of Section 5, Township 5 South, Range 1 West
Madison County, Alabama

Permit Number: 45-03

Landfill Type: Construction and Demolition

Pursuant to the Solid Wastes and Recyclable Materials Management Act, Code of Alabama 1975, §§22-27-1, *et seq.*, as amended (the "Act"), and attendant regulations promulgated there under by the Alabama Department of Environmental Management (ADEM), this permit is issued the U.S. Army Garrison/Redstone Arsenal (hereinafter called the Permittee), to operate a solid waste disposal facility, known as the Redstone Arsenal Landfill.

The Permittee must comply with all terms and conditions of this permit. This permit consists of the conditions set forth herein (including those in any attachments), and the applicable regulations contained in 335-13-1 through 335-13-15 of the ADEM Administrative Code (hereinafter referred to as the "ADEM Admin. Code" or as "335-13"). Rules cited are set forth in this document for the purpose of Permittee reference. Any rule that is cited incorrectly in this document does not constitute grounds for noncompliance on the part of the Permittee. Applicable ADEM Admin. Codes are those that are in effect on the date of issuance of this permit or any revisions approved after permit issuance.

This permit is based on the information submitted to ADEM on June 25, 2018 for permit renewal and known as the Permit Application (hereby incorporated by reference and hereinafter referred to as the Application). Any inaccuracies found in this information could lead to the termination or modification of this permit and potential enforcement action. The Permittee must inform ADEM of any deviation from or changes in the information in the Application that would affect the Permittee's ability to comply with the applicable ADEM Admin. Code or permit conditions.

This permit is effective as of **February 6, 2019** and shall remain in effect until **February 5, 2024**, unless suspended or revoked.


Alabama Department of Environmental Management

12/13/18
Date Signed

SECTION I. STANDARD CONDITIONS.

- A. Effect of Permit. The Permittee is allowed to dispose of nonhazardous solid waste in accordance with the conditions of this permit and 335-13. Issuance of this permit does not convey property rights of any sort or any exclusive privilege, nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local laws or regulations. Except for actions brought under the Act, compliance with the conditions of this permit shall be deemed to be compliance with applicable requirements in effect as of the date of issuance of this permit and any future revisions.
- B. Permit Actions. This permit may be suspended, revoked or modified for cause. The filing of a request for a permit modification or the notification of planned changes or anticipated noncompliance on the part of the Permittee, and the suspension or revocation does not stay the applicability or enforceability of any permit condition.
- C. Severability. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
- D. Definitions. For the purpose of this permit, terms used herein shall have the same meaning as those in 335-13, unless this permit specifically provides otherwise; where terms are not otherwise defined, the meaning associated with such terms shall be as defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.
1. "EPA" for purposes of this permit means the United States Environmental Protection Agency.
 2. "Permit Application" for the purposes of this permit, means all permit application forms, design plans, operational plans, closure plans, technical data, reports, specifications, plats, geological and hydrological reports, and other materials which are submitted to ADEM in pursuit of a solid waste disposal permit.
- E. Duties and Requirements.
1. Duty to Comply. The Permittee must comply with all conditions of this permit except to the extent and for the duration such noncompliance is authorized by a variance granted by ADEM. Any permit noncompliance, other than noncompliance authorized by a variance, constitutes a violation of the Act and is grounds for enforcement action, permit suspension, revocation, modification, and/or denial of a permit renewal application.
 2. Duty to Reapply. If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must apply for and obtain a new permit. The renewal application must be submitted to ADEM at least 180 days before this permit expires.
 3. Permit Expiration. This permit and all conditions therein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application as required by Section I.,E.,2., and, through no fault of the Permittee, ADEM has not made a final decision regarding the renewal application.
 4. Need to Halt or Reduce Activity Not A Defense. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the conditions of this permit.
 5. Duty to Mitigate. In the event of noncompliance with this permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment.
 6. Proper Operation and Maintenance. The Permittee shall at all times properly operate and maintain all facilities and systems of control (and related appurtenances) that are installed or used by the Permittee to achieve compliance with the conditions of this permit.
 7. Duty to Provide Information. If requested, the Permittee shall furnish to ADEM, within a reasonable time, any information that ADEM may reasonably need to determine whether cause exists for denying, suspending, revoking, or modifying this permit, or to determine compliance with this permit. If requested, the Permittee shall also furnish ADEM with copies of records kept as a requirement of this permit.
 8. Inspection and Entry. Upon presentation of credentials and other documents as may be required by law, the Permittee shall allow the employees of ADEM or their authorized representative to:

- a. Enter at reasonable times the Permittee's premises where the regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit.
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.
 - c. Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit.
 - d. Sample or monitor, at reasonable times, any substances or parameters at any location for the purposes of assuring permit compliance or as otherwise authorized by the Act.
9. Monitoring, Corrective Actions, and Records.
- a. Samples and measurements taken for the purpose of monitoring or corrective action shall be representative of the monitored activity. The methods used to obtain representative samples to be analyzed must be the appropriate method from 335-13-4 or the methods as specified in the Application attached hereto and incorporated by reference. Laboratory methods must be those specified in Standard Methods for the Examination of Water and Wastewater (American Public Health Association, latest edition), Methods for Chemical Analysis of Water and Wastes (EPA-600/4-79-020), Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (EPA Publication SW-846, latest edition), other appropriate EPA methods, or as specified in the Application. All field tests must be conducted using approved EPA test kits and procedures.
 - b. The Permittee shall retain records, at the location specified in Section I.,I., of all monitoring, or corrective action information, including all calibration and maintenance records, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least three years from the date of the sample, measurement, report or record or for periods elsewhere specified in this permit. These periods may be extended by the request of ADEM at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.
 - c. Records of monitoring and corrective action information shall include.
 - i. The exact place, date, and time of sampling or measurement.
 - ii. The individual(s) and company who performed the sampling or measurements.
 - iii. The date(s) analyses were performed.
 - iv. The individual(s) and company who performed the analyses.
 - v. The analytical techniques or methods used.
 - vi. The results of such analyses.
 - d. The Permittee shall submit all monitoring and corrective action results at the interval specified elsewhere in this permit.
10. Reporting Planned Changes. The Permittee shall notify ADEM, in the form of a request for permit modification, at least 90 days prior to any change in the permitted service area, increase in the waste received, or change in the design or operating procedure as described in this permit, including any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
11. Transfer of Permit. This permit may be transferred to a new owner or operator. All requests for transfer of permits shall be in writing and shall be submitted on forms provided by ADEM. Before transferring ownership or operation of the facility during its operating life, the Permittee shall notify the new owner or operator in writing of the requirements of this permit.
12. Certification of Construction. The Permittee may not commence disposal of waste in any new cell or phase until the Permittee has submitted to ADEM, by certified mail or hand delivery, a letter signed by both the Permittee and a professional engineer stating that the facility has been constructed in compliance with the permit. ADEM must inspect the constructed cells or phases before the owner or operator can commence waste disposal unless the Permittee is notified that ADEM will waive the inspection.

13. Compliance Schedules. Reports of compliance or noncompliance with or any progress reports on interim and final requirements contained in any compliance schedule required and approved by ADEM shall be submitted no later than 14 days following each schedule date.
14. Other Noncompliance. The Permittee shall report all instances of noncompliance with the permit at the time monitoring reports are submitted.
15. Other Information. If the Permittee becomes aware that information required by the Application was not submitted or was incorrect in the Application or in any report to ADEM, the Permittee shall promptly submit such facts or information. In addition, upon request, the Permittee shall furnish to ADEM, within a reasonable time, information related to compliance with the permit.
- F. Design and Operation of Facility. The Permittee shall maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or nonsudden release of contaminants (including leachate and explosive gases) to air, soil, groundwater, or surface water, which could threaten human health or the environment.
- G. Inspection Requirements.
1. The Permittee shall comply with all requirements of 335-13.
 2. The Permittee shall conduct random inspections of incoming loads.
 3. Records of all inspections shall be included in the operating record.
- H. Recordkeeping and Reporting.
1. The Permittee shall maintain a written operating record at the location specified in Section I.,I. The operating record shall include:
 - a. Documentation of inspection and maintenance activities.
 - b. Daily Volume reports.
 - c. Personnel training documents and records.
 - d. Solid/Hazardous Waste Determination Forms for Industrial Wastes, and associated ADEM disposal approval correspondence for industrial waste and special waste.
 - e. Groundwater monitoring records.
 - f. Explosive gas monitoring records. (See Section VII Variances)
 - g. Surface water and leachate monitoring records.
 - h. Copies of this Permit and the Application.
 - i. Copies of all variances granted by ADEM, including copies of all approvals of special operating conditions.
 2. Quarterly Volume Report. Beginning with the effective date of this permit, the Permittee shall submit, within thirty (30) days after the end of each calendar quarter, a report summarizing the daily waste receipts for the previous (just ended) quarter. Copies of the quarterly reports shall be maintained in the operating record.
 3. Monitoring and Corrective Action Reports. The Permittee shall submit reports on all monitoring and corrective activities conducted pursuant to the requirements of this permit, including, but not limited to, groundwater, surface water, explosive gas and leachate monitoring. The groundwater monitoring shall be conducted in March and September of each year, and the groundwater reports shall be submitted to ADEM within ninety (90) days of the sampling event, or as directed by ADEM. The reports should contain all monitoring results and conclusions from samples and measurements conducted during the sampling period. Copies of the groundwater reports shall be maintained in the operating record.
 4. Availability, Retention, and Disposition of Records.

- a. All records, including plans, required under this permit or 335-13 must be furnished upon request, and made available at reasonable times for inspection by any officer, employee, or representative of ADEM.
 - b. All records, including plans, required under this permit or 335-13 shall be retained by the Permittee for a period of at least three years. The retention period for all records is extended automatically during the course of any unresolved enforcement action regarding the facility, or as requested by ADEM.
 - c. A copy of records of waste disposal locations and quantities must be submitted to ADEM upon closure of the facility.
- I. Documents to be Maintained by the Permittee. The Permittee shall maintain, at U.S. Army Garrison/Redstone Arsenal, the following documents and amendments, revisions and modifications to these documents until an engineer certifies closure of the permitted landfill.
1. Operating record.
 2. Closure Plan.
- J. Mailing Location. All reports, notifications, or other submissions which are required by this permit should be sent via signed mail (i.e. certified mail, express mail delivery service, etc.) or hand delivered to:
1. Mailing Address.
Chief, Solid Waste Branch, Land Division
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, AL 36130-1463
 2. Physical Address.
Chief, Solid Waste Branch, Land Division
Alabama Department of Environmental Management
1400 Coliseum Blvd.
Montgomery, Alabama 36110-2059
- K. Signatory Requirement. All applications, reports or information required by this permit, or otherwise submitted to ADEM, shall be signed and certified by the owner as follows:
1. If an individual, by the applicant.
 2. If a city, county, or other municipality or governmental entity, by the ranking elected official, or by a duly authorized representative of that person.
 3. If a corporation, organization, or other legal entity, by a principal executive officer, of at least the level of Vice President, or by a duly authorized representative of that person.
- L. Confidential Information. The Permittee may claim information submitted as confidential if the information is protected under Code of Alabama 1975 §§22-39-18, as amended.
- M. State Laws and Regulations. Nothing in this permit shall be construed to preclude the initiation of any legal action or to relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation.

SECTION II. GENERAL OPERATING CONDITIONS.

- A. Operation of Facility. The Permittee shall operate and maintain the disposal facility consistent with the Application, this permit, and 335-13.
- B. Open Burning. The Permittee shall not allow open burning within the boundaries of the Redstone Arsenal Landfill without prior written approval from ADEM and other appropriate agencies. A burn request should be submitted in writing to ADEM outlining why that burn request should be granted. This request should include, but not be limited to, specifically what areas will be utilized, types of waste to be burned, the projected starting and completion dates for the project, and the projected days and hours of operation. The approval, if granted, shall be included in the operating record.

- C. Prevention of Unauthorized Disposal. The Permittee shall follow the approved procedures for the detecting and preventing the disposal of free liquids, dead animals, toxic or radioactive wastes, regulated hazardous wastes, PCB's, and medical waste at the facility.
- D. Unauthorized Discharge. The Permittee shall operate the disposal facility in such a manner that there will be no water pollution or unauthorized discharge. Any discharge from the disposal facility or practice thereof may require a National Pollutant Discharge Elimination System permit under the Alabama Water Pollution Control Act.
- E. Industrial Waste Disposal. The Permittee shall not dispose of industrial waste as required by 335-13-4-.21(1)(c), and as specified in the Application.
- F. Boundary Markers. The Permittee shall ensure that the facility is identified with a sufficient number of permanent boundary markers that are at least visible from one marker to the next.

SECTION III. SPECIFIC REQUIREMENTS FOR CONSTRUCTION/DEMOLITION WASTE LANDFILLS.

A. Waste Identification and Management.

- 1. Subject to the terms of this permit, the Permittee may accept for disposal the nonhazardous solid wastes listed in III.B. Disposal of any other wastes is prohibited, except waste granted a temporary or one time waiver by the Director.
- 2. The total permitted area for the Redstone Arsenal Landfill is approximately 75.96 acres with approximately 43.55 acres permitted for disposal operations.
- 3. The maximum average daily volume of waste disposed at the facility shall not exceed 900 tons/day. Should the average daily volume exceed this value by 20% or 100 tons/day, whichever is less, for two (2) consecutive quarters the permittee shall be required to modify the permit in accordance with 335-13-5-.06(2)(a)5. An increase in maximum average daily volume shall not be approved by ADEM unless the permittee has received local approval for the increased maximum average daily volume. The average daily volume shall be computed as specified by 335-13-5-.06(2)(a)5.(i).

B. Waste Streams.

The Permittee may accept for disposal non-putrescible and nonhazardous construction and demolition waste, rubbish as defined by Rule 335-13-1-.03, and friable and non-friable asbestos waste.

C. Service Area. The Permittee is allowed to receive waste from the Redstone Arsenal Boundary Area.

- D. Waste Placement, Compaction, and Cover. All waste shall be confined to an area as small as possible and placed onto an appropriate slope not to exceed 4 to 1 (25%). All waste shall be spread in layers two feet or less in thickness and thoroughly compacted weekly with adequate landfill equipment prior to placing additional layers of waste. These are minimum requirements for waste placement and compaction unless a variance is granted in Section VIII.
- E. Liner Requirements. At this time, the Permittee shall not be required to line the disposal cells. The base of the disposal cells shall be a minimum of five (5) feet above the temporal fluctuation of the groundwater table.
- F. Security. The Permittee shall provide artificial and/or natural barriers, which prevent entry of unauthorized vehicular traffic to the facility.
- G. All Weather Access Roads. The Permittee shall provide an all-weather access road to the dumping face that is wide enough to allow passage of collection vehicles.
- H. Adverse Weather Disposal. The Permittee shall provide for disposal activities in adverse weather conditions.
- I. Personnel. The Permittee shall maintain adequate personnel to ensure continued and efficient operation of the facility.
- J. Environmental Monitoring and Treatment Structures. The Permittee shall provide protection and proper maintenance of environmental monitoring and treatment structures.
- K. Vector Control. The Permittee shall provide for vector control as required by ADEM Admin. Code 335-13.

- L. Bulk or Noncontainerized Liquid Waste. The Permittee shall not dispose of bulk or noncontainerized liquid waste, or containers capable of holding liquids, unless the conditions of 335-13-4-.23(1)(j) are met.
- M. Empty Containers. Empty containers larger than 10 gallons in size must be rendered unsuitable for holding liquids prior to disposal in the landfill unless otherwise approved by ADEM.
- N. Other Requirements. ADEM may enhance or reduce any requirements for operating and maintaining the landfill as deemed necessary by the Land Division.
- O. Other Permits. The Permittee shall operate the landfill according to this and any other applicable permits.
- P. Scavenging and Salvaging Operations. The Permittee shall prevent scavenging and salvaging operations, except as part of a controlled recycling effort. Any recycling operation must be in accordance with plans submitted and approved by ADEM.
- Q. Signs. If the landfill is available to the public or commercial haulers, the Permittee shall provide a sign outlining instructions for use of the site. The sign shall be posted and have the information required by 335-13-4-.23(1)(f).
- R. Litter Control. The Permittee shall control litter.
- S. Fire Control. The Permittee shall provide fire control measures.

SECTION IV. GROUNDWATER MONITORING REQUIREMENTS.

- A. The Permittee shall install and/or maintain a groundwater monitoring system, as specified below.
 - 1. The permittee shall maintain the groundwater monitoring wells and piezometers identified in Table 1 at the locations specified in the Application, and any other groundwater monitoring wells which are added during the active life and the post closure care period.
 - 2. The Permittee shall maintain groundwater monitoring well RS083A as the upgradient groundwater monitoring well for the entire facility.
 - 3. The Permittee shall install and maintain additional groundwater monitoring wells as necessary to assess changes in the rate and extent of a plume of contamination or as otherwise deemed necessary to maintain compliance with the 335-13.
 - 4. Prior to installing additional groundwater monitoring wells, the Permittee shall submit a report to ADEM with a permit modification request specifying the design, location and installation of additional monitoring wells. This report shall be submitted within ninety (90) days prior to the installation which, at a minimum, shall include.
 - a. Well construction techniques including proposed casing depths, proposed total depth, and proposed screened interval of well(s);
 - b. Well development method(s);
 - c. A complete analysis of well construction materials;
 - d. A schedule of implementation for construction; and
 - e. Provisions for determining the lithologic characteristics, hydraulic conductivity and grain-size distribution for the applicable aquifer unit(s) at the location of the new well(s).
- B. Groundwater Monitoring Requirements.
 - 1. The Permittee shall determine the groundwater surface elevation at each monitoring well and piezometer identified in Table 1 each time the well or piezometer is sampled and at least semi-annually throughout the active life and post-closure care period.
 - 2. The Permittee shall determine the groundwater flow rate and direction in the first zone of saturation at least annually or each time groundwater is sampled and submit as required by 335-13.

3. Prior to the initial receipt of waste at the facility, the Permittee shall sample, and analyze for the parameters listed in Appendix I of 335-13-4-.27, in all monitoring wells identified in Section IV.A.2. to establish background water quality and/or as directed by 335-13-4-.27(2)(j) and 335-13-4-.27(2)(a)(1). The records and results of this sampling and analysis activity shall be submitted to ADEM, within ninety (90) days of the date of sampling.
 4. The Permittee shall sample, and analyze all monitoring wells identified in Table 1 for the parameters listed in Appendix I of 335-13-4-.27(3), on a semi-annual basis throughout the active life of the facility and the post-closure care period in accordance with 335-13-4-.27(3). Sampling shall be conducted during March and September of each year, beginning with the effective date of this permit. **The facility shall submit to ADEM the semi-annual groundwater reports within ninety (90) days of the March and September sampling events.**
 5. In addition to the requirements of Sections IV., B.1., B.2., B.3. and B.4., the Permittee shall record water levels, mean sea level elevation measuring point, depth to water, and the results of field tests for pH and specific conductance at the time of sampling for each well.
 6. **The Permittee has been approved for inter-well statistical analysis.**
- C. Sampling and Analysis Procedures. The Permittee shall use the following techniques and procedures when obtaining and analyzing samples from the groundwater monitoring wells described in Section IV.A. to provide a reliable indication of the quality of the groundwater.
1. Samples shall be collected, preserved, and shipped (when shipped off-site for analysis) in accordance with the procedures specified in the Application. Monitoring wells shall be bailed or pumped to remove at least four times the well volume of water. Slow recharge wells shall be bailed until dry. Wells shall be allowed to recharge prior to sampling.
 2. Samples shall be analyzed according to the procedures specified of the Application, Standard Methods for the Examination of Water and Wastewater (American Public Health Association, latest edition), Methods for Chemical Analysis of Water and Wastes (EPA-600/4-79-020), Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (EPA Publication SW-846, latest edition), or other appropriate methods approved by this Department. All field tests must be conducted using approved EPA test kits and procedures.
 3. Samples shall be tracked and controlled using the chain-of-custody and QA/QC procedures specified of the Application.
- D. Recordkeeping and Reporting Requirements.
1. Recording of Results. For each sample and/or measurement taken pursuant to the requirements of this permit, the Permittee shall record the information required by Section I.E.9.c.
 2. Recordkeeping. Records and results of all groundwater monitoring, sampling, and analysis activities conducted pursuant to the requirements of this permit shall be included in the operating record required by Section I.I.1.
- E. Permit Modification. If the Permittee or ADEM determines that the groundwater monitoring system no longer satisfies the requirements of 335-13-4-.14 or Section IV.A. of this permit, the Permittee must, within 90 days, submit an application for a permit modification to make necessary and/or appropriate changes to the system.

TABLE 1
GROUNDWATER MONITORING WELLS.

Monitoring Well Number	Top of Casing (feet msl)	Part Monitoring
Upgradient Wells		
RS083A	626.49	Entire Landfill
Downgradient Wells		
RS079	607.94	Entire Landfill
RS080	571.18	Entire Landfill
RS229	587.95	Entire Landfill

SECTION V. GAS MONITORING REQUIREMENTS

The Department has granted a variance from ADEM Rule 335-13-4-.16 requiring explosive gas monitoring. If at any time the Department determines that an explosive gas monitoring system is deemed necessary for the protection of human health and the environment, the Permittee must, within 90 days, submit an application for permit modification for the installation of an explosive gas monitoring system that meets the proper regulatory requirements of the Alabama Department of Environmental Management. (See Section VIII.1.)

SECTION VI. SURFACE WATER MANAGEMENT REQUIREMENTS

The permittee shall construct and maintain run-on and run-off control structures. Any discharges from drainage control structures shall be permitted through a discharge permit issued by the ADEM Water Division.

SECTION VII. CLOSURE AND POST-CLOSURE REQUIREMENTS

The Permittee shall close the landfill and perform post-closure care of the landfill in accordance with approved plans and Division 13.

- A. Final Cover. The Permittee shall grade final soil cover such that surface water does not pond over the permitted area as specified in the Application. The final cover system shall comply with ADEM Admin. Code Division 13.
- B. Vegetative Cover. The Permittee shall establish a vegetative or other appropriate cover within 90 days after completion of final grading requirements in the Application. Preparation of a vegetative cover shall include, but not be limited to, the placement of seed, fertilizer, mulch, and water.
- C. Notice of Intent. The Permittee shall place in the operating record and notify the Department of their intent to close the landfill prior to beginning closure.
- D. Completion of Closure Activities. The Permittee must complete closure activities of each landfill unit in accordance with the Closure Plan within 180 days of the last known receipt of waste.
- E. Certification of Closure. Following closure of each unit, the Permittee must submit to the Department a certification, signed by an engineer, verifying the closure has been completed according to the Closure Plan.
- F. Post-Closure Care Period. Post-closure care activities shall be conducted after closure of each unit throughout the life of this permit and continuing for a period of thirty (30) years following closure of the facility. The Department may shorten or extend the post-closure care period applicable to the solid waste disposal facility. The Permittee shall reapply in order to fulfill the post-closure care requirements of this permit.
- G. Post-Closure Maintenance. The Permittee shall provide post closure maintenance of the facility to include regularly scheduled inspections. This shall include maintenance of the cover, vegetation, monitoring devices and pollution control equipment and correction of other deficiencies that may be observed by ADEM. Monitoring requirements shall continue throughout the post closure period as determined by the Department unless all waste is removed and no unpermitted discharge to waters of the State have occurred.
- H. Post-Closure Use of Property. The Permittee shall ensure that post closure use of the property never be allowed to disturb the integrity of the final cover, liner, or any other component of the containment system. This shall preclude the growing of deep-rooted vegetation on the closed area.
- I. Certification of Post-Closure. Following post-closure of each unit, the Permittee must submit to the Department a certification, signed by an engineer, verifying the post-closure has been completed according to the Post-Closure Plan.
- J. Notice in Deed to Property. The Permittee shall record a notation onto the land deed containing the property utilized for disposal within 90 days after permit expiration, revocation or when closure requirements are achieved as determined by the Department as stated in the Application. This notation shall state that the land has been used as a solid waste disposal facility, the name of the Permittee, type of disposal activity, location of the disposal facility and beginning and closure dates of the disposal activity.
- K. Recording Instrument. The Permittee shall submit a certified copy of the recording instrument to the Department within 120 days after permit expiration, revocation, or as directed by the Department as described in the Application.

- L. Removal of Waste. If the Permittee, or any other person(s), wishes to remove waste, waste residues, or any liner or contaminated soils, the owner must request and receive prior approval from the Department.

SECTION VIII. VARIANCES

1. The Department has granted a variance from ADEM Rule 335-13-4-.16 requiring explosive gas monitoring. If at any time the Department determines that an explosive gas monitoring system is deemed necessary for the protection of human health and the environment, the Permittee must, within 90 days, submit an application for permit modification for the installation of an explosive gas monitoring system that meets the proper regulatory requirements of the Alabama Department of Environmental Management. (See Section V.)

Any variance granted by the Department may be terminated by the Department whenever the Department finds, after notice and opportunity for hearing, that the petitioner is in violation of any requirement, condition, schedule, limitation or any other provision of the variance, or that operation under the variance does not meet the minimum requirements established by state and federal laws and regulations or is unreasonably threatening the public health.