PRELIMINARY DETERMINATION

PERMIT RENEWAL

Phifer Incorporated
4400 Reese Phifer Avenue
Tuscaloosa, Alabama 35401

Phifer Incorporated Landfill
Permit No. 63-08

April 17, 2024

TTL, on behalf of Phifer Incorporated, has submitted to the Alabama Department of Environmental Management (ADEM) an application to continue to operate an industrial landfill known as the Phifer Incorporated Landfill, Permit No. 63-08. The waste stream for the Phifer Incorporated Landfill would remain non-putrescible and non-hazardous industrial wastes and construction and demolition wastes consisting of cut or broken concrete or asphalt, wood building materials, sheet rock, non-asbestos building insulation materials, broken glass, assorted building materials, sheet metal, scrap fiberglass and/or polyester yarn coated with PVC coating of various colors, untreated waste wood packing materials, cardboard sheets and/or tubes, aluminum yarn and assorted woven products. The service area for the Phifer Incorporated Landfill would remain the Phifer Incorporated facility in Tuscaloosa, Alabama. The maximum average daily volume of waste disposed at the Phifer Incorporated Landfill would remain 15 cubic yards per day. An extension of the previously approved variances was requested and would be granted in the renewed permit. All other permit conditions would remain the same.

The Phifer Incorporated Landfill is described as being located in the Southwest ¼ of the Northwest ¼ and the West ½ of the Southwest ¼ and the Northeast ¼ of the Southwest ¼ of Section 35, Township 21 South, Range 10 West in Tuscaloosa County, Alabama. The Phifer Incorporated Landfill consists of 14.2 acres with 10 acres for disposal operations.

The Land Division has determined that the renewal of the permit meets the applicable requirements of ADEM's Administrative Code Division 13.

Technical Contact:

Hunter Baker
Solid Waste Engineering Section
Land Division

Alabama Department of Environmental Management

SOLID WASTE DISPOSAL FACILITY *PERMIT*

PERMITTEE:	**Phifer Incorporated**
FACILITY NAME:	**Phifer Incorporated Landfill**
FACILITY LOCATION:	**Southwest ¼ of the Northwest ¼ and the West ½ of the Southwest ¼ and the Northeast ¼ of the Southwest ¼ of Section 35, Township 21 South, Range 10 West in Tuscaloosa County, Alabama. The facility consists of 14.2 acres with 10 acres approved for disposal operations.**
PERMIT NUMBER:	**63-08**
PERMIT TYPE:	**Industrial Landfill**
WASTE APPROVED FOR DISPOSAL:	**Non-putrescible and non-hazardous industrial wastes and construction and demolition wastes consisting of cut or broken concrete or asphalt, wood building materials, sheet rock, non-asbestos building insulation materials, broken glass, assorted building materials, sheet metal, scrap fiberglass and/or polyester yarn coated with PVC coating of various colors, untreated waste wood packing materials, cardboard sheets and/or tubes, aluminum yarn and assorted woven products.**
APPROVED WASTE VOLUME:	**Maximum Daily Volume of 15 cubic yards per day**
APPROVED SERVICE AREA:	**Phifer Incorporated located in Tuscaloosa, Alabama**

In accordance with and subject to the provisions of the Alabama 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:	**?????**
EFFECTIVE DATE:	**?????**
EXPIRATION DATE:	**?????**

_____

Alabama Department of Environmental Management

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
SOLID WASTE PERMIT

Permittee:	Phifer Incorporated 4400 Reese Phifer Avenue Tuscaloosa, Alabama 35401
Landfill Name:	Phifer Incorporated Landfill
Landfill Location:	Southwest ¼ of the Northwest ¼ and the West ½ of the Southwest ¼ and the Northeast ¼ of the Southwest ¼ of Section 35, Township 21 South, Range 10 West Tuscaloosa County
Permit Number:	63-08
Landfill Type:	Industrial

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 thereunder by the Alabama Department of Environmental Management (ADEM), this permit is issued Phifer Incorporated (hereinafter called the Permittee), to operate a solid waste disposal facility, known as the Phifer Incorporated 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 ADEM Admin. Code 335-13-1 through ADEM Admin. Code 335-13-16 of the ADEM Administrative Code (hereinafter referred to as the "ADEM Admin. Code"). 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 December 14, 2020, and as amended, for permit renewal and is 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 **Date???**, and shall remain in effect until **Date???**, unless suspended or revoked.

_____ _____

Alabama Department of Environmental Management 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 ADEM Admin. Code 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 ADEM Admin. Code 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 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 ADEM Admin. Code 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 120 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. Before the Permittee may commence disposal of waste in any new cell or phase:

a. The Permittee must submit a letter to the Department signed by both the Permittee and a professional engineer stating that the facility has been constructed in compliance with the permit.

b. The Department must inspect the new cells or phases unless the Permittee is notified that the Department will waive the inspection.

c. The Permittee may not commence disposal activities in any new cells or phases until approval of the new cells or phases is granted by the Department.

13. Noncompliance. The Permittee shall report all instances of noncompliance with the permit at the time noncompliance is discovered.

14. 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 ADEM Admin. Code 335-13-4-.21(1)(b)?.

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.

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 action 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, or as directed by ADEM, and the reports shall be submitted at least semi-annually, or as directed by ADEM. The reports should contain all monitoring results and conclusions from samples and measurements conducted during the sampling period. Explosive gas monitoring must be submitted on a quarterly basis, and the reports should be submitted to ADEM and placed in the operating record within 30 days of the monitoring event. Copies of the groundwater and explosive gas monitoring 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 ADEM Admin. Code 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 ADEM Admin. Code 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 and local land authority upon closure of the facility.

I. Documents to be Maintained by the Permittee. The Permittee shall maintain, at the Phifer Incorporated office located in Tuscaloosa, Alabama, 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
Alabama Department of Environmental Management
P.O. Box 301463
Montgomery, AL 36130-1463

2. Physical Address.
Chief, Solid Waste Branch
Alabama Department of Environmental Management
1400 Coliseum Blvd.
Montgomery, Alabama 36110-2400

K. Signatory Requirement. All applications, reports or information required by this permit, or otherwise submitted to ADEM, shall be signed and certified in accordance with ADEM Admin. Code 335-13-5 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 ADEM Admin. Code 335-13.

B. Open Burning. The Permittee shall not allow open burning 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, regulated hazardous waste, PCB's, medical waste, and other unauthorized waste streams 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 dispose of industrial waste as required by ADEM Admin. Code 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 INDUSTRIAL 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 Phifer Incorporated Landfill is approximately 14.2 acres, with 10 acres approved for disposal.

3. The maximum average daily volume of waste disposed at the facility, as contained in the permit application, shall not exceed 15.2 cubic yards/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 ADEM Admin. Code 335-13-5-.06(2)(b)2. The average daily volume shall be computed as specified by ADEM Admin. Code 335-13-4-.23(2)(f).

B. Waste Streams. The Permittee may accept for disposal non-hazardous industrial and construction/demolition wastes consisting of cut or broken concrete or asphalt, wood building materials, sheet rock, non-asbestos building insulation materials, broken glass, assorted building materials, sheet metal, scrap fiberglass and/or polyester yarn coated with PVC coating of various colors, untreated waste wood packing materials, cardboard sheets and/or tubes, aluminum yarn and assorted woven products.

C. Service Area. The service area for this landfill, as contained in the permit application, is Phifer Incorporated located in Tuscaloosa, Alabama.

D. Waste Placement, Compaction, and Cover. All waste shall be confined to an area as small as possible within a single working face 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 or placing the monthly cover. A minimum of six inches of compacted earth, or other alternative cover material approved by ADEM and listed in Section VIII, shall be added at the conclusion of the last full week of operation in the month (See Section VIII., 1).

E. Liner Requirements. At this time, the Permittee shall not be required to install a liner system. The base of the landfill shall be a minimum of five (5) feet above the highest measured groundwater level as determined by ADEM Admin. Code 335-13-4-.11(2)(a).

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 smooth 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 ADEM Admin. Code 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 ADEM Admin. Code 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 identified in Table IV.1. at the locations specified in the Application, and any other groundwater monitoring wells which are added (Section IV.,A.,3.) during the active life and the post closure care period.

2. The Permittee shall maintain groundwater monitoring well MW-1 as the background 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 any plume of contamination or as otherwise deemed necessary to maintain compliance with ADEM Admin. Code 335-13.

4. Prior to installing any additional groundwater monitoring wells, the Permittee shall submit a plan to ADEM with a permit modification request specifying the design, location and installation of any additional monitoring wells. This plan shall be submitted at least one-hundred and twenty (120) 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 IV.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 ADEM Admin. Code 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 ADEM Admin. Code 335-13-4-.27, and/or any other parameters specified by ADEM, all monitoring wells identified in Section IV.,A.,2. to establish background water quality and/or as directed by ADEM Admin. Code 335-13-4-.27(2)(j) and ADEM Admin. Code 335-13-4-.27(2)(a)(1). The records and results of this sampling and analysis activity shall be submitted to ADEM, within sixty (60) days of the date of sampling.

4. The Permittee shall sample, and analyze all monitoring wells identified in Table IV.1 for the parameters listed in Table IV.2, on a semi-annual basis throughout the active life of the facility and the post-closure care period in accordance with ADEM Admin. Code 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 records and results of this sampling and analysis activity shall be submitted to ADEM, within ninety (90) days of the date of sampling.

5. In addition to the requirements of Section 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.

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 at any time the Permittee or ADEM determines that the groundwater monitoring system no longer satisfies the requirements of ADEM Admin. Code 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 any necessary and/or appropriate changes to the system.

TABLE IV.1.
GROUNDWATER MONITORING WELLS.

Monitoring Well Number	Top of Casing (feet msl)	Part Monitoring
UPGRADIENT/BACKGROUND MONITORING WELLS		
MW-1	168.0	Entire
DOWNGRADIENT MONITORING WELLS		
MW-2	152.0	Entire
MW-3	152.7	Entire
MW-4	155.0	Entire

*ft-bls = Depth in feet below land surface

TABLE IV.2.
SEMI-ANNUAL GROUNDWATER MONITORING PARAMETERS.

Arsenic, Barium, Lead, Mercury, and Zinc

SECTION V. GAS MONITORING REQUIREMENTS.

The Permittee must install and maintain an explosive gas monitoring system in accordance with ADEM Admin. Code 335-13.

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 ADEM Admin. Code 335-13.

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 be constructed as specified in the application.

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 ADEM of their intent to close the landfill prior to beginning closure.

D. Completion of Closure Activities. The Permittee has been granted a variance allowing the landfill to remain active without accepting waste until the expiration of this permit. The Permittee must complete closure activities of each landfill unit in accordance with the Closure Plan within 180 days of submittal to the Department intent to close the landfill unit as described in ADEM Admin. Code 335-13-4-.20(2)(e) or within 180 days of the landfill reaching final capacity in which the landfill cannot receive additional wastes (See Section VIII., 3.).

E. Certification of Closure. Following closure of each unit, the Permittee must submit to ADEM a certification, signed by an registered professional 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 a minimum of thirty (30) years following closure of the facility. ADEM may shorten or extend the post-closure care period applicable to the solid waste disposal facility.

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 ADEM 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 ADEM a certification, signed by an independent registered professional engineer, verifying the post-closure has been completed according to the Post-Closure Plan.

J. Recording Instrument. The Permittee must provide documentation of compliance with the requirements of the Uniform Environmental Covenants Program in ADEM Admin. Code 335-5 and shall execute the following:

1. Record a notation onto the land deed within 90 days from the certification of closure. 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.

2. File the covenant at the courthouse where the land deed is held within thirty (30) days of receipt of the covenant signed by ADEM's Land Division Chief.

3. The Permittee shall submit a certified copy of the recording instrument to ADEM within 120 days after permit expiration, revocation, or as directed by ADEM as described in the application.

K. 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 ADEM.

SECTION VIII. VARIANCES.

1. A variance is granted for ADEM Admin. Code 335-13-4-.23(1)(a)(1) relating to the weekly cover for the active face of the landfill. The Permittee shall be required to cover the active face of the landfill at least monthly with a minimum of six inches of soil. The monthly cover should be applied at the conclusion of the last full week of operation in the month (See Section III., D.).

2. A variance is granted from ADEM Admin. Code 335-13-4-.12(f) concerning 100 foot buffer zone for the West and North side of the landfill. However, the 100 foot buffer is still in effect for the South and East portion of the landfill.

3. A variance is granted from ADEM Admin. Code 335-13-4-.20(2)(f) and (g) stating that the landfill unit must begin closure activities of each landfill unit no later than 30 days after the date of which the landfill unit receives the known final receipt of wastes, and the landfill unit must complete closure activities of each landfill unit no later than 180 days following the last known receipt of waste. This variance allows the landfill to remain active without accepting waste until the expiration of this permit provided that the landfill unit has the capacity to receive additional wastes and the Permittee takes all steps necessary to prevent threats to human health and the environment (See Section VII., D.).

Any variance granted by ADEM may be terminated by ADEM whenever ADEM 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.

Permit Application

2743 B Gunter Park Dr. W.
Montgomery, AL 36109
334-244-0766
www.TTLUSA.com

December 10, 2020

Transmitted Via: USPS and E-mail (hunter.baker@adem.alabama.gov)

Mr. Hunter Baker
Alabama Department of Environmental Management
Land Division
Solid Waste Section
1400 Coliseum Boulevard
Montgomery, AL 36130-1463

Subject: Request for Renewal of Solid Waste Permit No. 63-08
Phifer Incorporated Landfill
Tuscaloosa, Tuscaloosa County, Alabama
TTL Project No.: 000600040.20

Dear Mr. Baker:

On behalf of our client, Phifer Incorporated, TTL would like to request the reissuance of the Phifer Incorporated Landfill Solid Waste Disposal Facility Permit. The Phifer Incorporated Landfill is an Industrial Landfill located at 33° 10' 30.59" N, 87° 33' 32.74" W in Tuscaloosa, Tuscaloosa County, Alabama, situated between Trevor S Phillips Avenue (formerly known as Mill Creek Avenue) and a railroad. The landfill encompasses 14.2 acres, with a solid waste boundary area for industrial solid waste disposal of 10 acres.

It is our understanding that the Alabama Department of Environmental Management (ADEM) has requested that facilities include a description of the waste screening process with the permit renewal application. *Please note that prior to entry to the Phifer Incorporated Landfill each waste load is inspected by Mr. John Stumpff, Safety & Environmental Engineer with Phifer Incorporated. If the waste load does not meet the requirements for disposal in the Industrial Landfill (as described in the permit), wastes are profiled and diverted to an appropriate facility for proper recycling and/or disposal.*

Enclosed with this letter, we have included the executed Form 439 Permit Application, a list of adjacent property owners, a Site Location and Topographic Map, and a check made payable to the ADEM in the amount of $8,150.00 as fee for the requested reissuance of the Industrial Solid Waste Disposal Facility Permit.

Please contact the undersigned at (334) 387-1290 if you have any questions or require additional information.

Sincerely
TTL, Inc.

Stacey L. Tarrant, REM, CPESP
Senior Environmental Scientist

Sheryle G. Reeves, P.E.
Principal Engineer

Enclosure: Phifer Check No. _____
cc: Mr. John Stumpff, Phifer Safety & Environmental Engineer

PERMIT APPLICATION
SOLID WASTE DISPOSAL FACILITY
ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
(Submit in Triplicate)

1. **Facility type:**
   - ____ **Municipal Solid Waste Landfill (MSWLF)**
   - __X__ **Industrial Landfill (ILF)**
   - ____ **CCR Landfill (CCRLF)**
   - ____ **CCR Surface Impoundment (CCRSI)**
   - ____ **Other (explain)**____

2. **Facility Name** Phifer Incorporated Landfill (Renewal of Permit Number 63-08)

3. **Applicant:**

   Name: Phifer Incorporated

   Address: mailing: 4400 Reese Phifer Avenue, Tuscaloosa, Alabama 35401
   physical: 3700 Trevor S Phillips Avenue, Tuscaloosa, Alabama 35401

   Telephone: (205) 750-4835

4. **Location: (include county highway map or USGS map)**

   Township 21 South **Range** 10 West
   Section 35 **County** 63

5. **Land Owner:**

   Name: Phifer Incorporated

   Address: 4400 Reese Phifer Avenue
   Tuscaloosa, Alabama 35401

   Telephone: (205) 750-4835

   (Attach copy of agreement from landowner if applicable.)

6. **Contact Person:**

Name John Stumpff

Position or Affiliation Safety & Environmental Engineer

Address: 4400 Reese Phifer Avenue
Tuscaloosa, Alabama 35401

Telephone: (205) 750-4835

7. **Size of Facility:** 14.2 **Acres**

Size of Disposal Area(s): 10 **Acres**

8. **Identify proposed service area or specific industry that waste will be received from:**

Industrial waste from the Phifer Incorporated Facility only.

9. **Proposed maximum average daily volume to be received at landfill (choose one):**

_____ **Tons/Day** 15 **Cubic Yards/Day**

10. **List all waste streams to be accepted at the facility (i.e., household solid waste, wood boiler ash, tires, trees, limbs, stumps, etc.):**

Non-putrescible and non-hazardous industrial wastes and construction and demolition wastes. (cut or broken concrete or asphalt, wood, building materials, sheet rock, non-asbestos building insulation materials, broken glass, assorted building materials, sheet metal, scrap fiberglass and/or polyester yarn coated with PVC coating of various colors, untreated waste wood packing materials, cardboard sheets and/or tubes, aluminum yarn, and assorted woven products.

SIGNATURE 12/10/20 **DATE**

Phifer Wire Landfill
Permit No. 63-08

Permit Renewal Application
December 10, 2020

LIST OF ADJACENT PARCEL LAND OWNERS

1. **63 31 07 35 2 015 001.000**
3201 Kauloosa Avenue

R. L. Zeigler Co. Inc.
P. O. Box 1640
Tuscaloosa, Alabama .5403

2. **63 31 07 35 2 022 001.000**
1501 35th Street

Power and Rubber Supply, Inc.
1501 35th Street
Tuscaloosa, Alabama 35401

3. **63 31 07 35 3 004 001.002**
3620 Resource Drive

Davis, Stephen Dale ETUX
3400 Shamley Drive
Tuscaloosa, Alabama 35406

4. **63 31 07 35 3 004 001.001**
3702 Resource Drive

Property Bros LLC
5309 Bluegrass Parkway
Tuscaloosa, Alabama 35406

5. **63 31 07 35 3 004 001.005**
3710 Resource Drive

Kauloosa LLC
1123 Kings Mountain Road
Tuscaloosa, Alabama 35406

6. **63 31 07 35 3 004 001.000**
3740 Resource Drive

Industrial Real Estate, LLC
1501 35th Street
Tuscaloosa, Alabama 35401

7. **63 31 07 35 3 004 021.000**
3801 Mill Creek Avenue

City of Tuscaloosa
2201 University Boulevard
Tuscaloosa, Alabama 35401

8. **63 31 07 35 3 004 021.001**
Mill Creek Avenue

Barnette, Edwin E (Life Estate)
3800 Mill Creek Lane
Tuscaloosa, Alabama 35401

9. **63 31 07 35 3 004 013.000**
3800 Mill Creek Lane

CROWE SHANE & AMY CROWE
Barnette, Edwin E (Life Estate)
3800 Mill Creek Lane
Tuscaloosa, Alabama 35401

10. **63 31 07 35 3 004 012.000**
3808 Mill Creek Lane

Watkins, Ronald S
3808 Mill Creek Lane
Tuscaloosa, Alabama 35401

11. **63 31 07 35 3 004 011.000**
3814 Mill Creek Lane

Hurndon, Natasha
3814 Mill Creek Lane
Tuscaloosa, Alabama 35401

12. **63 31 07 35 3 004 010.000**
3820 Mill Creek Lane

Pake, Lee
2609 University Boulevard
Tuscaloosa, Alabama 35401

13. **63 31 07 35 3 004 005.000**
2716 39th Street

Wingard, John Franklin
3891 Kauloosa Avenue
Tuscaloosa, Alabama 35401

14. **63 31 07 35 3 004 004.001**
2730 39th Street

Wingard, John Franklin
3891 Kauloosa Avenue
Tuscaloosa, Alabama 35401

15. **63 31 08 34 4 001 001.000**
Kauloosa Avenue

City of Tuscaloosa
2201 University Boulevard
Tuscaloosa, Alabama 35401

16. **63 31 08 34 4 001 002.000**
Kauloosa Avenue

Peco Foods Inc.
1101 Greensboro Avenue
Tuscaloosa, Alabama 35401

17. **63 31 08 34 4 001 001.004**
3900 Kauloosa Avenue

Peco Foods, Inc.
1101 Greensboro Avenue
Tuscaloosa, Alabama 35401

18. **63 31 08 34 1 005 001.000**
3701 Kauloosa Avenue

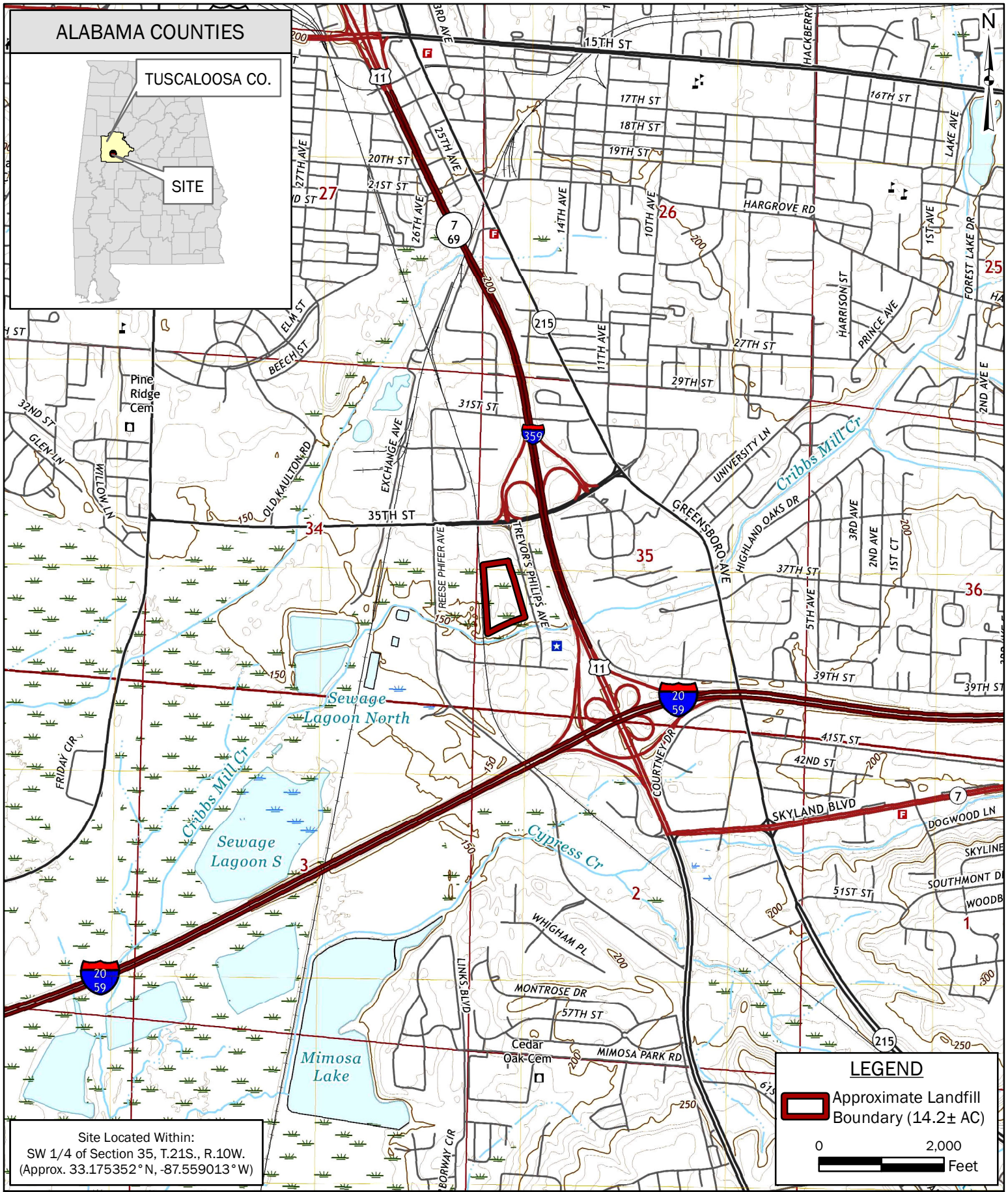
Peco Foods Inc.
1101 Greensboro Avenue
Tuscaloosa, Alabama 35401

19. **63 31 08 34 1 004 003.001**
3437 Kauloosa Avenue

Cintas Corporation No 2
6800 Cintas Boulevard
Mason, Ohio 35040

20. Property between the approximate landfill boundary and Parcel 1. 63 31 07 35 2 015 001.000 is owned by Phifer but is not operated by the landfill.

Please note that the following street names have recently changed: Kauloosa Avenue has been changed to Reese Phifer Avenue and Mill Creek Avenue has been changed to Trevor S Phillips Avenue. Former street names are listed by the Tuscaloosa County Flagship GIS website (Leigh Ann Fair, Tax Assessor - 714 Greensboro Ave. Room 108 Tuscaloosa, AL 35401 (205) 349-3870 Ext. 385).



TTL

FIGURE A-I: SITE LOCATION & TOPOGRAPHIC MAP

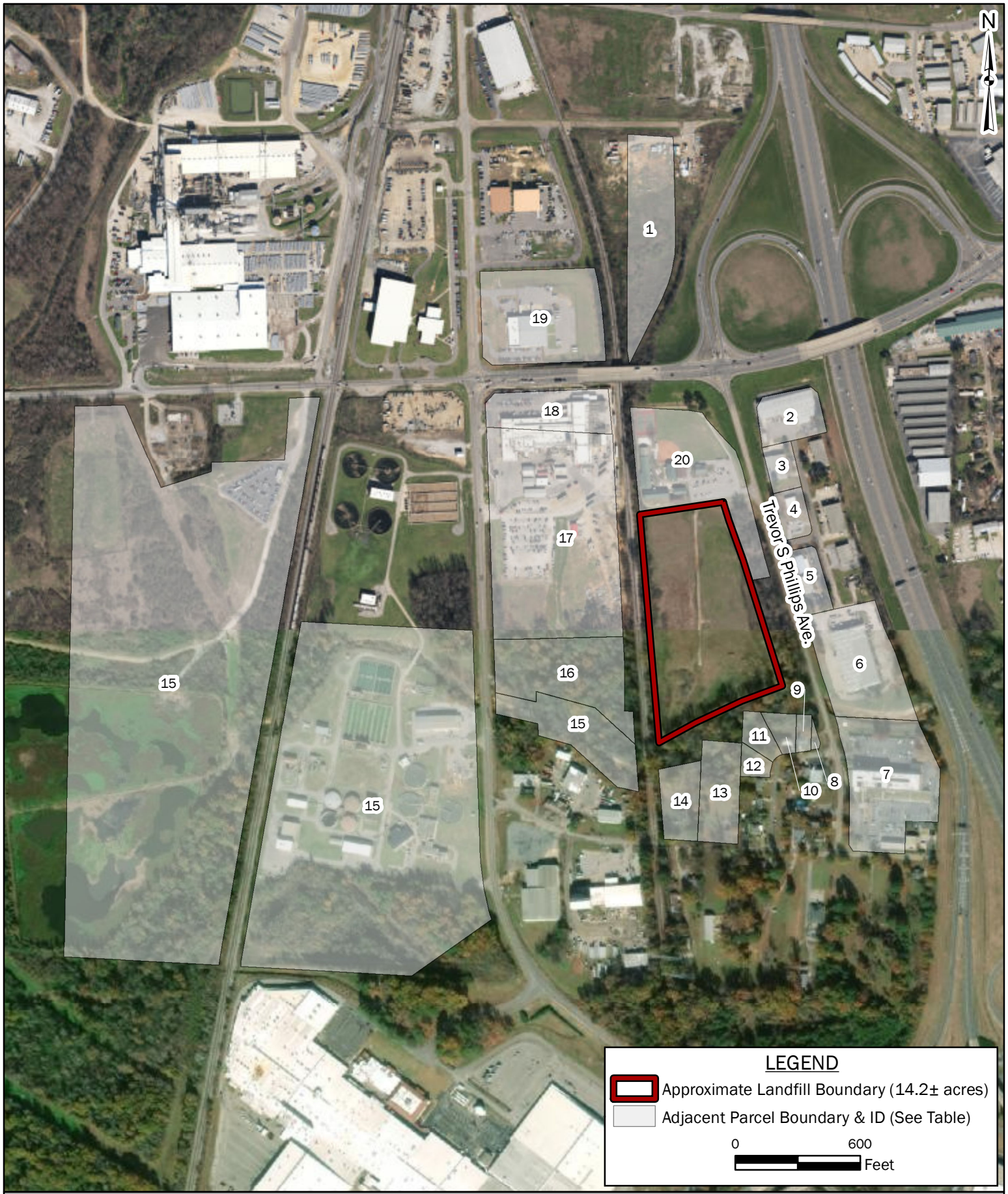
PHIFER INCORPORATED LANDFILL

PERMIT NO. 63-08

TUSCALOOSA, TUSCALOOSA COUNTY, ALABAMA

BASEMAP: Tuscaloosa, Alabama USGS 7.5 Minute Quadrangle Map, 2018 (10-ft Contour Interval).

DRAWN BY:	DEK
CHECKED BY:	SLT
DRAWING DATE:	12/7/2020
REVISION DATE:	N/A
TTL JOB NO.:	000000600040.20
APPROX. SCALE:	1 in = 2,000 ft



TTL

FIGURE 2: SITE LOCATION MAP & ADJACENT PARCELS

PHIFER INCORPORATED LANDFILL

PERMIT NO. 63-08

TUSCALOOSA, TUSCALOOSA COUNTY, ALABAMA

BASEMAP: Maxar, Vivid Imagery, 12/2/2018 (0.31 m Resolution).

DRAWN BY:	DEK
CHECKED BY:	SLT
DRAWING DATE:	12/8/2020
REVISION DATE:	N/A
TTL JOB NO.:	000000600040.20
APPROX. SCALE:	1 in = 600 ft

3516 Greensboro Avenue
Tuscaloosa, AL 35401
205.345.0816
www.TTLUSA.com

March 27, 2023

Transmitted Via: Email (Hunter.baker@adem.alabama.gov)

Mr. Hunter Baker
Solid Waste Engineer
ADEM
1400 Coliseum Boulevard
Montgomery, Alabama 36130-1463

Subject: ***Hydrogeology Review Revised GWMP***
Phifer Incorporated Industrial Landfill, Permit No. 63-08
Tuscaloosa, Tuscaloosa County, Alabama
TTL Project No.: 000600040.23

Dear Mr. Baker:

This letter is written on behalf of TTL, Inc.'s (TTL) client, Phifer Incorporated (Phifer), in response to the Alabama Department of Environmental Management's (ADEM) letter dated February 23, 2023 regarding ADEM's review of the Revised Explosive Gas and Groundwater Monitoring Plan (GWMP) for the referenced facility. This letter provides responses to each of the ADEM's seven (7) comments and includes an updated GWMP containing associated revisions to the September 8, 2022 GWMP where applicable (Attachment A).

Comment 1. Section 2.2.1 indicates that groundwater discharges to the drainage features that parallel the east and west boundaries of the landfill unit. In order to be protective of human health and the environment and ensure compliance with ADEM Admin. Coder. 335-13-4-.01(2)(a), it is recommended that the GWMP include justification for the exclusion of a surface water sampling plan if appropriate.

Response: A copy of the Phifer Incorporated Landfill's NPDES Permit ALG160005 and SWP3-BMP is attached (Attachment B) for reference. This permit was renewal effective February 1, 2022 and has an expiration date of January 31, 2027). Also included is a Figure to show outfall locations (Attachment C). There are two discharge outfall locations identified for the discharge of stormwater from the active landfill and associated land disturbance activities (DSN001-1 and -2). Records indicate that Pace Analytical currently provides sample collection and analysis of stormwater samples for the facility, and semi-annual Discharge Monitoring Reports are submitted by Phifer. A list from the permit regarding stormwater collection/analytical parameters is provided below.

NPDES sampling includes 12 parameters collected from DSN002 and/or DSN004 (reference NPDES Permit Part 1, A) in Attachment B.

	Effluent Characteristic	
pH	Chromium, Total	Total Dissolved Solids
Biochemical Oxygen Demand, 5-day	Copper, Total	Total Suspended Solids
Chemical Oxygen Demand	Oil and Grease	Downstream Turbidity
Calcium, Total	Settleable Solids	Upstream Turbidity
Benzene	Xylene	Phosphorus, Total
Ethylbenzene	Naphthalene	
Toluene	Methyl Tertiary Butyl Ether (MTBE)	

Historically, two surface water locations have been monitored at the locations shown on Attachment C. These locations immediately south of the southeast and southwest corners of facility boundary and immediately north of Mill Creek. The GWMP (Section 2.2.2) have been revised to reference these surface water monitoring locations. The facility's NPDES permit requires semi-annual and/or quarterly sampling of these outfalls. The GWMP has been revised to include the results of the NPDES results in each semi-annual GWM report. These sampling locations and the constituents analyzed on a quarterly basis provide data that can be used to evaluate the potential impact of seepage from the facility.

Comment 2. It is recommended that the GWMP indicate how statistical analysis will account for data below reporting limits and specify the process that will be used to determine whether parametric or nonparametric analysis will be performed.

Response: To calculate an LCL around the median with 99% confidence, a minimum of seven compliance point measurements is required in order to calculate a non-parametric confidence interval. The process involves an iterative computation of the interval endpoints in order to select the endpoints that are associated with a 99% confidence level. Considering that generating LCLs involves an iterative testing procedure (i.e., ranking of analytical data from lowest to highest concentrations), laboratory non-detect values are set to zero (0) prior to any ranking of the data. Substituting zero (0) for non-detect values is performed to ensure that a non-detect value is never ranked higher than a detected value. The Unified Guidance recommends ending the iterative computations when the confidence level changes by less than 1 or 2 percent when a new set of candidate ranks is selected. Additionally, a new set of candidate ranks will only be selected if the confidence level increase by 2 percent or more. A table of iterative endpoints and associated confidence levels will be submitted for each non-parametric confidence interval constructed around the median.

If the dataset can be normalized, a parametric confidence interval will be generated for comparison to the GWPS value per Chapter 21-1 of the Unified Guidance. This language has been included in Section 3.1.19.5 of the updated GWMP.

Comment 3. Section 3.1.19.4 of the GWMP indicates that trend tests will be submitted for each statistical exceedance. Because trend tests can be a useful tool for identifying changes in groundwater geochemistry across a site, it is recommended that the GWMP be revised to indicate that trend tests will be submitted for all detected constituents.

Response: The updated GWMP has been revised to indicate that trend tests will be submitted for all detected constituents (reference Section 3.1.19.4 of updated GWMP).

Comment 4. In Section 3.1.21 the GWMP appears to indicate that if constituents are detected at statistically significant levels above the GWPS, the owner or operator will, within 14 days, notify ADEM and also complete other actions. Please consider revising language in this section for clarity.

Response: Section 3.1.21 of the updated GWMP states that if concentrations of any one or more of the Appendix II constituents are detected at statistically increased levels (SSIs) above the GWMP, the owner/operator will, within 14 days, notify ADEM, notify appropriate local government officials, and put notice of the SSI in the operating record. The GWMP further states that unless it can be successfully demonstrated according to the requirements of ADEM administrative Code R. 335-13-4-.27(28)(b) that conditions other than the landfill are responsible for the SSI, four (4) specific actions will then be taken. It is TTL's opinion that Section 3.1.21 is clearly stated and that no revision to this section of the GWEMP is therefore required.

Comment 5. Section 3.1.19.4 of the GWMP indicates that confidence intervals constructed around the median will be used during assessment and corrective action. The process involves an iterative computation of the interval endpoints in order to select endpoints that are associated with a 99% confidence level. However, Section 21.2 of the Unified Guidance recommends that a stopping rule be used to decide when the improvement in the confidence level brought about by picking more extreme order statistics is outweighed by the loss of information from making the interval too wide. The Guidance recommends ending the iterative computations when the confidence interval changes by less than 1 or 2 percent when a new set of candidate ranks is selected.

Therefore, it is recommended that the GWMP indicate that a table of the iterative endpoints and associated confidence level be submitted for each non-parametric confidence interval constructed around the median. Additionally, it is recommended that the GWMP indicate that a new set of candidate ranks will only be selected if the confidence level increases by more than 2 percent.

Response: As stated in Section 3.1.19.1 of this Plan, the inter-well prediction limit statistical method will be used to evaluate groundwater monitoring data.

A revised Section 3.1.19.3 has been added to the updated GWMP to state that typically, the first step in the statistical analysis process is that the entire dataset (background and compliance) is subjected to a distribution analysis to determine if the data is normally distributed or can be transformed (i.e., log-normal distribution). If data is not normal, or cannot be transformed, a non-parametric prediction limit statistical analysis method is recommended. If data is normal, or can be transformed, a parametric prediction limit statistical analysis method is recommended. However, when the data contains a significant percentage of non-detects (defined as greater than 10-15%), the validity of distribution tests are questionable and it is suggested that a non-parametric prediction limit method be used.

Parametric and non-parametric prediction limit statistical analysis methods can be performed as an inter-well test (utilizing sample data from a designated background well) or as an intra-well test (utilizing sample data from the historical results of the constituent/compliance well). In either case, a comparison is made of each individual compliance concentration for the most recent event to the maximum concentration in background samples. The non-parametric prediction limit method does not produce an actual limit, but simply a maximum value of the constituent concentration above which contamination is assumed. It should be noted that the Unified Guidance suggests that all non-detects should be replaced with one-half (½) of the RL for the purpose of identifying the prediction limit (i.e., maximum background concentration) for parametric prediction interval analysis. For the purpose of identifying the prediction limit for non-parametric prediction interval analysis, all non-detect values should be reduced to zero or one-half (½) of the RL. For reporting purposes, the laboratory represents all non-detects as being less than the RL (e.g., ND<100) for each constituent. The reduction of non-

detect values to zero would be necessary due to differences in RLs used throughout the monitoring history for the facility and if there were RLs that exceeded actual confirmed detection values. By reducing the non-detects to zero, it would ensure that a prediction limit represented by an RL value is never higher than an actual confirmed detection.

This response language has been added as Section 3.1.19.3 of the updated GWMP.

Comment 6. Section 3.1.1 notes that the groundwater monitoring program is designed to comply with the 2/15/2021 revision of ADEM's Division 13 regulations. Please note that the latest revision of the Division 13 regulations occurred on August 15, 2022. A copy of these regulations is available on ADEM's website.

Response: Section 3.1.1 of the Updated GWMP has been revised to note that the latest revision of the Division 13 regulations occurred on August 15, 2022.

Comment 7. There are multiple incorrect rule references in the groundwater monitoring program. Please correct these references to indicate the correct rules in the following sections:

- 3.1
- 3.1.1
- 3.1.15
- 3.1.17
- 3.1.19
- 3.1.19.l
- 3.1.21

Response: References to indicate the correct rules have been made in the updated GWMP (reference Sections 3.1, 3.1.1, 3.1.15, 3.1.17, 3.1.19, 3.1.19.1, and 3.1.21).

TTL and Phifer Incorporated believe this response will assuage any and all ADEM comments. Please contact the undersigned, should the Department have additional comment.

Sincerely,

TTL, Inc.

J. Mark Tanner, P.G.
Senior Principal Geologist
Alabama License No. 247

Jennifer L. Simpson, P.G.
Staff Geologist
Alabama License No. 1629

Enclosures: *Attachment A. Revised (Updated) GWMP for Phifer Incorporated Industrial Landfill*
Attachment B. NPDES General Permit ALG160005 and SWP3-BMP
Attachment C. Figure 2. Site Layout – NPDES General Permit ALG160005

CC: *Mr. John L. Stumpff, Safety & Environmental Engineer, Phifer, Inc.*

Attachment A.

Revised (Updated) GWMP for
Phifer Incorporated Industrial Landfill

REVISED EXPLOSVE GAS & GROUNDWATER MONITORING PLAN

PHIFER INCORPORATED
INDUSTRIAL LANDFILL
TUSCALOOSA, TUSCALOOSA COUNTY, ALABAMA
PERMIT NO: 63-08

Submitted to:

Phifer Incorporated
P. O. Box 1700
Tuscaloosa, Tuscaloosa County, Alabama 35403

Prepared by:

TTL, Inc.
3516 Greensboro Avenue
Tuscaloosa, Alabama 35401

Project No. 0600040.22

March 27, 2023

PREFACE

During an internal review, the Alabama Department of Environmental Management (ADEM) noted that there was no sufficient groundwater monitoring and analysis plan (GWMP) or explosive gas monitoring plan on file. Per the ADEM's directive, as referenced in the Department's June 29, 2022 letter and subsequent ADEM comments provided in a February 23, 2023 letter, this plan has been prepared in accordance ADEM Admin. Code r. 335-13-4.-14(1)(c).

CERTIFICATION

I certify that I am a qualified groundwater professional, demonstrated by an Alabama state license as a professional geologist or engineer. I have sufficient training and experience in groundwater hydrology and related fields to make sound professional judgments regarding groundwater monitoring and contaminant fate and transport. I further certify that the data in this report has been prepared by me and/or a subordinate under my direction.

Name: _____
Sheryle G. Reeves, P.E.
Principal Engineer
Alabama License No. 20128

Name: _____
J. Mark Tanner, P.G.
Senior Principal Geologist
Alabama License No. 247

TABLE OF CONTENTS

APPENDICES

1.0 FACILITY DESCRIPTION

The Phifer Industrial Landfill is located between Mill Creek Avenue and a railroad at 33° 10' 30.59" N, 87° 33' 32.74" W in Tuscaloosa, Tuscaloosa County, Alabama. The landfill encompasses 14.2 acres, with a solid waste boundary area for industrial solid waste disposal of 10 acres. A topographic map of the facility location is provided in Appendix A-I. The northern boundary of the landfill is adjacent to Green Acres, a recreational facility operated by Phifer Incorporated. Midsouth Corporation Railroad (aka Southrail Railroad) is immediately adjacent to the western boundary of the landfill property. Cribbs Mill Creek, which is near the southern extent of the Phifer Incorporated property, is approximately 100 feet from the landfill boundary. On the east, Mill Creek Avenue bounds the landfill property. A 100-foot-wide buffer zone is maintained between the fill boundaries of the landfill and Cribbs Mill Creek and Mill Creek Avenue. The fill boundary is adjacent to the railroad property. The facility is fenced and access to the facility can only be achieved by passage through Phifer's controlled gateway area situated at Mill Creek Avenue.

The Phifer facility is currently owned and operated by Phifer Incorporated (Phifer) under ADEM Industrial Solid Waste Disposal Facility (ISWDF) Permit No. 63-08. The Phifer ISWLF has been in operation by Phifer since at least 1989. Historical laboratory analytical data and historical groundwater elevations compiled for the facility date back to 2000 and 2005, respectively. The groundwater monitoring system at the landfill currently consists of four (4) groundwater monitoring wells, identified as MW-1, MW-2, MW-3, and MW-4. The permit designates one well (MW-1) as "upgradient" and three wells (MW-2, MW-3, and MW-4) as "downgradient" wells. The gas monitoring system at the site consists of twenty-seven (27) gas wells positioned along the perimeter of the facility. The gas wells are constructed of 2-inch PVC and have an average depth of seven feet below ground surface (BGS). The locations of the on-site groundwater monitoring wells and explosive gas wells are depicted on Figure A-II.

2.0 SITE GEOLOGY AND HYDROGEOLOGY

2.1 General Site Physiography

A topographic map of the site indicates that the land slopes gently to the south toward Cribbs Mill Creek. Cribbs Mill Creek is located approximately 100 feet south of the facility and portions of the landfill lie within the floodplain of the creek. The landfill is located in the Gulf Coastal Plain physiographic province. This province, in the area of the site, is composed of marine sands, clays, and calcareous sediments that were deposited in the shallow sea during the Cretaceous and Tertiary time periods. Copies of the site geologic map are provided in Appendix A-III for reference.

2.2 Site Geology

Based upon the review of published information, Quaternary Alluvial Deposits, resulting from stream deposits of Mill Creek and the Black Warrior River, are exposed at the site. These deposits typically consist of very pale-orange to grayish-orange, variable-colored, fine- to coarse-grained quartz sand containing clay lenses and gravel in places. The alluvial deposits, which may be as great as 50 feet in thickness in some locations, overlie the Cretaceous Coker Formation.

The Coker Formation is typically a light-colored, micaceous, very fine to medium cross-bedded sand and vari-colored micaceous clay with a few thin gravel beds containing quartz and chert pebbles. The Coker Formation, which is a major aquifer in this region, is generally in hydraulic connection with the overlying alluvium and receives recharge from the alluvial deposits.

2.2.1 Site Structural Geology

In early 1990, soil borings were advanced at the site by TTL to a maximum depth of 26.5 feet. Alluvial deposits were encountered during completion of borings at the site. At the original land surface, before fill and liner advancement, these deposits consisted of dusky yellowish-brown clayey silt with organics and extended to a depth of approximately 1 foot below the original land surface. A yellowish gray and grayish orange clayey fine sand and yellowish gray and grayish orange fine sandy clay immediately underlie the surficial deposits. Approximately 1 to 2 feet of a medium gray clayey sand and sandy clay were observed to be located underneath the encountered yellowish gray sand deposits. A distinctive lower contact occurred with a dark yellowish orange silty fine to coarse sand with gravel at about 9 feet. With the exception of P-3 and MW-2, these lithologies were uniform in borings at the site. Due to the location of boring P-3 along the western drainage ditch, the upper clayey sand and sandy clay were not present; they had been removed by erosion or previous excavation.

During boring and sampling, soils were observed to be very moist to wet throughout the entire interval of penetration with a noticeable zone of saturation occurring in the more porous, lower, silty fine to coarse sand with gravel. Due to the high water table in the floodplain of Cribbs Mill Creek and the seasonally high rainfall in the winter months of the year, water-levels were within 5 feet of the original land surface at each piezometer and monitoring well location. Water-level elevations were about 147 feet mean sea level (MSL) in piezometer P-6 (near Cribbs Mill Creek) and 152 feet MSL at up-gradient monitoring well MW-1 in March, 1990. The groundwater gradient, based on evaluation of surface topography, would normally have been assumed to be south and south-west towards Cribbs Mill Creek. Based on water-levels measured in the piezometers between the dates January 12, 1990 to March 19, 1990, groundwater flows towards Cribbs Mill Creek. However, due to the high water table, the drainage ditches that parallel the east and west boundaries are sources of discharge of groundwater and influence movement of groundwater across the site. Measured water levels in piezometers and monitoring wells, between January, 1990 and September, 1990, indicated a seasonal variation ranging from 0.2 feet in MW-1 and 3.4 feet in P-1.

2.2.2 Hydrology – In-Situ and Laboratory Hydraulic Conductivity Tests

An initial investigation culminating in a report entitled Report of Preliminary Soil and Hydrogeologic Assessment, Phifer Incorporated Landfill was performed by Law Environmental, Inc. (Law) in March of 1988. Field activities included advancement of soil borings and monitoring well installation, aquifer testing, groundwater sampling, and test pit excavation and sampling.

Hydraulic gradients, unitless and expressed as i or dh/dl, is defined as the difference in groundwater elevations between two (2) points or piezometers, i.e., the hydraulic head difference, divided by the distance between them. An up-gradient boring and piezometer, north of the site, was not drilled during the 1988 investigation. Monitoring well MW-1, which was installed during a previous investigation, was used to obtain groundwater level measurements up-gradient of the landfill. A test to determine hydraulic conductivity was conducted by Law in a previous investigation. The hydraulic conductivity was determined using a slug test method and was reported, by Law, to be 1.1×10^{-3} cm/sec at monitoring well MW-1.

Phifer Incorporated Landfill's maintains a NPDES Permit ALG160005 and SWP3-BMP. There are two discharge outfall locations identified for the discharge of stormwater from the active landfill and associated land disturbance activities (DSN001-1 and -2). Records indicate that Pace Analytical currently provides sample collection and analysis of stormwater samples for the facility, and semi-annual Discharge Monitoring Reports are submitted by Phifer. NPDES sampling includes 12 parameters collected from DSN002 and/or DSN004. A list from the permit regarding stormwater collection/analytical parameters is provided below.

	Effluent Characteristic	
pH	Chromium, Total	Total Dissolved Solids
Biochemical Oxygen Demand, 5-day	Copper, Total	Total Suspended Solids
Chemical Oxygen Demand	Oil and Grease	Downstream Turbidity
Calcium, Total	Settleable Solids	Upstream Turbidity
Benzene	Xylene	Phosphorus, Total
Ethylbenzene	Naphthalene	
Toluene	Methyl Tertiary Butyl Ether (MTBE)	

Historically, two surface water locations have been monitored at the facility. These locations are established immediately south of the southeast and southwest corners of facility boundary and immediately north of Mill Creek. The facility's NPDES permit requires semi-annual and/or quarterly sampling of these outfalls. These NPDES results will be included in each semi-annual GWM report. These sampling locations and the constituents analyzed on a quarterly basis provide data that can be used to evaluate the potential impact of seepage from the facility.

3.0 LANDFILL MONITORING

3.1 Groundwater Monitoring System

The Groundwater Monitoring System is comprised of one upgradient monitoring well (designated MW-1) and three downgradient monitoring wells (designated MW-2, MW-3, and MW-4). These wells are located so that groundwater sampled in the designated upgradient monitoring well will represent the quality of background that has not been affected by leakage from a unit, as well as monitoring wells (designated downgradient) representative of the quality of groundwater passing the relevant point of compliance specified under ADEM Admin. Code r. 335-13-4-.27(2). The down-gradient monitoring system is installed at the relevant point of compliance that ensures detection of groundwater contamination having passed beneath the unit. The locations of all four on-site groundwater monitoring wells are shown on Figure A-II (Appendix A) for reference.

3.1.1 Groundwater Monitoring Program

The groundwater monitoring program is designed to comply with ADEM Admin. Code r. 335-13-4-.27 (August 15, 2022 revision). The program, therefore, complies with the requirements for sample collection, sample preservation and shipment, laboratory analytical procedures, chain-of-custody control, quality assurance and quality control, statistical evaluation of laboratory analytical data, detection monitoring, assessment monitoring, and corrective action. The program incorporates permanent and/or temporary monitoring elements to provide environmental protection during and after landfill development. The Phifer Industrial Landfill is currently operating as a Subtitle D landfill under permit number 63-08. This updated monitoring program supersedes earlier versions and is written to include monitoring of the existing wells. In accordance with ADEM Admin. Code r. 335-13-4-.27(1)2 (August 15, 2022 revision), a revised/updated Groundwater Monitoring Plan will be prepared and submitted to the Department prior to the placement of waste in future landfill cells.

3.1.2 Sample Collection

Environmental quality sampling at the site will be accomplished by OSHA- trained personnel trained and experienced in sampling protocol to be consistent with ADEM guidance and ASTM Standards. As site conditions change, activities related to monitoring at the site will be periodically reviewed for completeness and integrity and updated as appropriate. In order to ensure the integrity of the collected

groundwater samples, considerable effort will be directed toward optimizing the sampling protocol and refining it as more information becomes available. The protocol for collection of the groundwater samples will be documented and reported to the ADEM with the analytical results and each semi-annual report.

3.1.3 Well Inspections

Prior to performing purging or sampling, each monitoring well will be inspected in an attempt to assess its integrity. The condition of each well will be observed and evaluated for physical damage that may have been caused by site equipment or other vehicular traffic. Each well will be assessed in an attempt to confirm that an outside source contaminant has not been introduced into the well. Inspection information, as well as the date and time, general weather conditions, and sampling personnel identification, will be documented on a Field Information Form (Appendix B). The actual form that is utilized may vary in format. Field personnel will record, at a minimum, the following:

- Date, time, and sampler's name
- Well number, elevation of measuring point, well depth, and depth to water
- Well casing material and inside diameter
- Static water level prior to purging
- Sampling equipment used
- Volume of water purged prior to sampling
- Sample container numbers, types, sizes, and preservatives
- pH, specific conductance, temperature, and turbidity of water samples
- Comments about sample color, odor, and unusual characteristics
- Comments about weather conditions
- Comments about accessibility and condition of well
- The condition of the well (i.e. integrity of the well above the ground surface).

3.1.4 Monitoring Well Abandonment/Replacement

If it is determined that a well should be replaced for any reason, a Monitoring Well Abandonment and Replacement Plan (the Plan) will be prepared for submittal to ADEM within 60 days of making the determination. The Plan will include, at a minimum, consideration of the following:

- The appropriate method for abandonment (in-place vs. over drilling) and relocation to protect the replacement well from future damage.
- The proposed distance of the replacement well from the abandoned well.
- The anticipated replacement well type, depth, screened interval, casing diameter and surface completion in accordance with ADEM Admin. Code r. 335-13-4-.27(2)(c), August 15, 2022 revision.
- The need for replicate sample collection and if required, the number of replicate samples and a schedule for completing sample collection.
- Statistical analysis to be used for groundwater quality data collected from the replacement well and a determination addressing pooling data from the abandoned well with the new well is appropriate.

Upon approval of the Plan by the ADEM and the subsequent installation of the new well and abandonment of the old well, a report documenting the abandonment and replacement activities will be prepared and submitted to ADEM along with a Minor Permit Modification request to update the facility Permit and include the newly installed well into the Permit compliance well network.

3.1.5 Sample Collection Procedures

For sample collection, each monitoring well in the groundwater monitoring system will be sampled with equipment and methodologies that minimize the potential for alteration or contamination of the sample and that are capable of cleaning sampling equipment on the ground or on any contaminated surface. Additionally, personnel who contact sampling equipment that may contact the interior of the monitoring well or the groundwater will don powderless latex/nitrile gloves. If applicable, non-contaminated well(s) or typically upgradient wells will be sampled prior to those wells which are known to be impacted (typically downgradient wells).

3.1.6 Decontamination of Sample Equipment

Although use of non-dedicated equipment is discouraged, any non-dedicated well equipment that may contact the interior of the well or groundwater will be decontaminated in the field immediately prior to use, or in the office/lab and protected using aluminum foil and/or plastic bags. However, for any sampling events requiring non-dedicated sampling equipment, decontamination procedures will consist of rinsing the equipment once with deionized or laboratory reagent-quality water, brushing the equipment with a laboratory-quality soap such as Liquinox, and triple rinsing the equipment with deionized or laboratory-reagent quality water.

3.1.7 Water-level Measurements

Prior to groundwater purging and sampling, static water-level measurements will be made at each well location by utilizing a portable electronic water-level indicator, tape, or other suitable measuring device, capable of achieving an accuracy of ±0.01 foot. Wells will be measured for depth to water on the same day and immediately prior to purging. If the sampling event requires in excess of one day to complete, water-level measurements in all wells will be completed first before purging and sampling is initiated. The measuring device will be used in accordance with the manufacturer's recommendations and/or directions. Prior to measuring, equipment that may contact the groundwater will be decontaminated by triple rinsing with distilled or deionized water. Measurements of the depth to water from a surveyed reference datum (the top of the well casing) will be to the nearest 0.01 foot, and the values will be recorded on the ADEM Groundwater Monitoring Report Form (Appendix B). Total well depths shall be obtained as necessary if there is evidence of well tampering or siltation.

3.1.8 Well Evacuation/Purging

Immediately prior to sampling, the water within the well will be evacuated until measured water-quality parameters indicate that formation water has entered the well or to sufficient volume to assure that stagnant water has been purged from the well. The wells will be evacuated using the standard 3 to 5 well-volume purging method or by low-flow (minimal drawdown) sampling methods. Low-flow sampling methods are preferred. If low-flow methods are used, the procedure will be in accordance with EPA/540/S-95/504, "Low-flow (Minimal Drawdown) Groundwater Sampling Procedures".

Purging may be considered complete when: Standard 3 to 5 well volume method - A minimum of three (3) well volumes (based upon well- construction records) have been evacuated from the well and two of the field measured parameters (pH, specific conductance, temperature, and turbidity) have stabilized, or until the well is pumped/bailed dry; or

Low-flow - Two of the field measured water-quality parameters have stabilized (measured within 15% relative to previous measurements).

If three well volumes cannot be obtained due to the well being pumped or bailed dry, the well will be allowed to recover and then the samples will be collected. If sufficient water is not available for sampling within 24 hours of purging for slowly recovering wells, the well will be considered dry, and no sample will be collected.

Low-flow sampling will be performed only if dedicated pumps have been installed in each well. If low-flow (or minimal drawdown) techniques are used, purging will be performed with flow-control submersible bladder pumps. Purging rates will be monitored and depth to water measurements recorded to assure that evacuation rates do not induce a substantial lowering of the water within the well. Flow rates will vary for each well, but rates of approximately 0.1 to 0.5 L/min are typical. Pump discharge lines will be purged prior to collecting field parameter samples for field analysis with appropriate meters. All purge water removed from monitoring wells as well as sample water not collected in the laboratory provided sample containers will be discharged on the ground surface at a point near the well.

3.1.9 Sample Collection

Samples will be collected from each well using either a dedicated (or disposable) Teflon or polyethylene bailer or through the discharge of dedicated pumps used to evacuate the well. Samples will be collected at a rate that minimizes potential alteration of the sample due to agitation or oxidation. Pumping rates for collection of samples for volatiles analysis (VOA's, etc.) will be approximately 0.1 L/min or less, to the extent practical based on the sampling equipment. Pumping rates for collecting other samples may be increased, but will be adjusted to a rate that also prevents chemical alteration.

If low-flow sampling methods are employed, the sampling rate will not exceed the purging rate, with flow rates of approximately 0.1 to 0.5 L/min recommended (EPA/540/S-95/504). Sampling pumps will be operated in a continuous manner so that they do not produce samples that are aerated in the discharge tube. Groundwater samples will be collected as soon as possible after purging.

3.1.10 Sample Preservation & Shipment

Samples will be collected and containerized in the order of the volatilization sensitivity of the parameter (i.e., volatile organics, organic compounds, inorganic species, and major cations and anions). Sample containers of the appropriate size and type, and with the preservatives appropriate for the analytical tests to be performed from the sample, will be prepared and labeled by the independent testing laboratory utilized by the facility and/or the facility's consultant. The laboratory will specify the preservation methods based on knowledge of methods and procedures approved by ADEM and/or EPA. The facility owner/operator per the facility's environmental consultant will contract for services with a laboratory that meets these requirements.

Holding times, storage conditions, and transport conditions are important elements of sampling protocol. They will be identified from references such as the most recent edition of EPA SW-846 (Test Methods for Evaluating Solid Waste; Physical/Chemical Methods; EPA SW-846) and Standard Methods for the Examination for Water and Wastewater. Samples will be packaged securely in an iced cooler (kept at or below a temperature of 4 °C) and transported to the analytical laboratory following strict chain-of-custody protocol.

On the day following sample shipment, the laboratory will be contacted to confirm the laboratory's receipt of samples as well as to confirm sample integrity.

3.1.11 Chain of Custody

Each sample container will be individually identified as to sample number, date and time of collection, and source of sample. A chain-of custody record will be prepared for all samples that will include:

a) Name of the person collecting the samples;
b) Date and time of sample collection;
c) Sample (soil or water);
d) Source of each sample (monitoring well identifier);
e) Preservation provisions for each sample;
f) Analytical requirements; and
g) Name of person accepting sample.

Custody transfers of samples will be recorded on the chain-of-custody form by signatures of the transferor (relinquisher) and the transferee (receiver). This procedure will be repeated, as necessary, until final delivery is made to the analytical laboratory.

3.1.12 Analytical Procedures

Groundwater samples will be analyzed for the constituents specified in the detection-monitoring program. Where appropriate, assessment monitoring may be required. No specific analytical methods are cited in the regulations although suggested analytical methods are listed. The suggested methods are those EPA-approved methods and procedures that are published in SW-846. The laboratory under contract to the facility shall use one of the approved methods.

3.1.13 Practical Quantitation Limits (PQLs)

The Phifer Incorporated Industrial Landfill proposes to utilize laboratory-specific practical quantification limits (PQLs) as the reporting limits of applicable low-level detection analytes (particularly organics). The USEPA developed the concept of the PQL to address the issue of analytical variability. The PQL concept was developed for compliance with the Safe Drinking Water Act (50FR46906, Nov. 13, 1985) where it is defined: "The PQL thus represents the lowest level achievable by good laboratories within specified limits during routine laboratory operating conditions." A nationally recognized analytical laboratory will be contracted to perform sample analysis and the laboratory will typically be capable of meeting the applicable ADEM water- quality standards (limits).

3.1.14 Quality Assurance & Quality Control

A quality-assurance and quality-control (QA/QC) program will be part of the sampling protocol will be followed as a requirement for the laboratory chosen to provide analytical services. The laboratory QA/QC program will be a written program, a copy of which will be available to the owner/operator. This program will describe the precision, accuracy, and completeness of the laboratory data; the documentation of procedures for calibration and maintenance of laboratory equipment, for analysis of samples, for computing and validating test data, for chain-of-custody control; and the control and security of all documentation. Laboratory QA/QC standards will be initialed with the receipt of samples and will be maintained throughout the recordkeeping period.

3.1.15 Detection Monitoring Parameters

The initial detection monitoring parameters for the Phifer Industrial Landfill will consist of constituents listed in the facility's permit (arsenic, barium, lead, mercury, and zinc). The Landfill also may, at the facility's discretion, monitor groundwater for major leachate indicator parameters (such as total dissolved solids and alkalinity) and for major cations and ions (such as calcium, magnesium, sulfate,

and carbonate). Further, the Landfill may also, at the facility's discretion, collect and analyze leachate samples. Monitoring for the additional groundwater parameters and characterizing the leachate are independent of the permit requirements.

ADEM Admin. Code r. 335-13-4-.27(3)(a)(3) allows the Department to delete any of the detection monitoring parameters if it can be shown that the removed constituents are not reasonably expected to be contained in or derived from the waste contained in the unit. ADEM Admin. Code r. 333-13-4-.27(3)(a)4 allows the Department to establish an alternative list of inorganic indicator parameters in lieu of some or all of the heavy metals (constituents 1 through 16 in Appendix I) if the alternative parameters provide a reliable indication of inorganic releases from the industrial solid waste landfill unit to the groundwater.

3.1.16 Detection Monitoring Frequency

Detection Monitoring will be performed in March and September of every year during the active life of the facility (including closure) and during the post-closure period until or unless the Department specifies an alternative monitoring frequency. The exception to semi-annual sampling for Detection Monitoring would be when ADEM directs that Assessment Monitoring be initiated.

3.1.17 Inter-well & Intra-well Comparisons

Two general approaches to groundwater monitoring at waste disposal facilities are: (1) inter-well comparisons by which new downgradient monitoring measurements are compared to water-quality measurements obtained from wells that are hydraulically upgradient to the facility; and (2) intra-well comparisons by which new downgradient measurements are compared to their own history. In general, intra-well monitoring is preferable to inter-well monitoring because it eliminates the spatial component of natural groundwater chemistry variability. This spatial component comprises a significant portion of the total variability that must be accounted for by statistical methodology. In accordance with ADEM Admin. Code r. 335-13-4-.27(2)(1) (August 15, 2022 revision) and the facility's current permit, the collected groundwater analytical data will be statistically evaluated using the inter-well comparison approach until or unless otherwise directed by ADEM.

The statistical method described in ADEM Admin. Code r. 335-13-4-.27(2)(I)3 as a tolerance or prediction interval procedure will be used to evaluate groundwater monitoring data. An appropriate variation of this method will be used for each constituent. This method can be used for all constituents because it allows for the construction of either one-sided or two—sided intervals from either parametric or nonparametric distributions of data, and because various adaptations of the method account for varying percentages of data below the laboratory's PQL. This method will be used as long as the continuing assessment or groundwater monitoring data accumulated from the site supports its appropriateness. If the site data provides evidence that an alternative statistical method should be used, this evidence will be submitted to ADEM to justify the request for ADEM's approval to use another method.

3.1.18 Background Monitoring

After each new well is constructed, samples will be collected for at least four independent sampling events to specifically provide background groundwater quality data. Depending on the amount of variation in the initial background data results, the number of background samples may be extended to include up to eight individual samples. Collected groundwater samples will be analyzed for detection monitoring parameters. Additional background indicator data may be collected from the existing wells for further characterization as described in Section 3.1.8.

During background sample collection, the data will be examined for outliers, anomalies, and trends that might indicate a release. Outliers and anomalies are inconsistently large or small values that can occur due to sampling, laboratory, transportation or transcription errors, or even by chance alone. Significant trends indicate a source of systematic error or an actual contamination occurrence that must be evaluated and corrected before the detection monitoring program can be implemented. The inclusion of such values in the historical database used for statistical evaluation could cause misinterpretation of the data set, and result in an artificial increase in the magnitude of statistical limits, which could result in an increase in the false negative rate (i.e., a decrease in the sensitivity of the statistical procedure).

To remove the possibility of historical outliers and trends creating false statistical limits, the data for each well and each constituent will be tested for the existence of outliers. Outliers may be removed from consideration during the establishment of all statistical limits. The statistical outlier and trend detection procedure will be performed for those wells that have had at least five measurements for a given constituent. Once the background database is established, the outlier procedure described above may be applied and appropriate statistical limits set in accordance with the appropriate statistical method.

Sufficient background indicator data has been compiled for each of the four groundwater monitoring wells in this groundwater monitoring network/system.

3.1.19 Statistical Methods

Statistical analysis is required by the ADEM Admin. Code r. 335-13-4-.27. The purpose of statistical analysis is to identify whether any monitored constituent(s) are detected in amounts that constitute a statistically significant increase (SSI) relative to background concentrations. The number of samples collected to establish groundwater quality data will be consistent with the appropriate statistical procedures determined pursuant to ADEM Admin. Code r. 335-13-4-.27(2). In the application of statistics to groundwater monitoring data from this site, all data will be treated as independent and representative of the quality of the groundwater at the site. Statistical methods used, and their application to data from this site, meet the EPA standards referenced in *Statistical Analysis of Groundwater Monitoring Data Unified Guidance* document. The March 2009 Unified Guidance document provides guidance for the statistical analysis of groundwater monitoring data from RCRA facilities. It updates and replaces the earlier *1989 Interim Final Guidance* and the associated *July 1992 Addendum*.

3.1.19.1 Analysis of Variance

The permittee will specify in writing to the Department and place in the operating record one of the following statistical methods to be used in evaluating groundwater monitoring data for each hazardous constituent. The statistical test chosen shall be conducted separately for each hazardous constituent in each well. One of the following tests will be utilized.

1. A parametric analysis of variance (ANOVA) followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent.
2. ANOVA based on ranks followed by multiple comparisons procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent,
3. A tolerance or prediction interval procedure in which an interval for each constituent is established from the distribution of the background data, and the level of each constituent

in each compliance well is compared to the upper tolerance or prediction limit.
4. A control chart approach that gives control limits for each constituent.
5. Another statistical test method that meets the performance standards of ADEM Admin. Code r. 335-13-4-.27(2). The owners or operator must place a justification for this alternative in the operating record and submit it to the Department for approval to use this alternative test. The justification must demonstrate that the alternative method meets the performance standards of this rule.

As stated in Section *3.1.17* of this Plan, the inter-well prediction limit statistical method will be used to evaluate groundwater monitoring data.

3.1.19.2 Identifying Outliers in Background

In accordance with the Unified Guidance, the background data will be evaluated for outliers prior to statistical evaluation. If an outlier test reveals the presence of an outlier, the measurement will not be treated as such until a specific physical reason for the abnormal value can be determined (i.e. data recording errors, unusual sampling and laboratory procedures or conditions, inconsistent sample turbidity, and values significantly outside the historical ranges of background data). In accordance with the Unified Guidance, if no error in the value can be documented, it should be assumed that the observation is a true, but extreme value and should not be altered or removed. Statistical outliers may need to be removed, especially if an error or discrepancy can be identified, so that subsequent compliance tests can be improved. If trends are indicated, a change in the statistical method or approach may be warranted. In accordance with the Unified Guidance, the owner/operator should review the background data every 2-3 years and revised as necessary.

3.1.19.3 Distribution Analysis and Handling of Non-Detects

Typically, the first step in the statistical analysis process is that the entire dataset (background and compliance) is subjected to a distribution analysis to determine if the data is normally distributed or can be transformed (i.e., log-normal distribution). If data is not normal, or cannot be transformed, a non-parametric prediction limit statistical analysis method is recommended. If data is normal, or can be transformed, a parametric prediction limit statistical analysis method is recommended. However, when the data contains a significant percentage of non-detects (defined as greater than 10-15%), the validity of distribution tests are questionable and it is suggested that a non-parametric prediction limit method be used.

Parametric and non-parametric prediction limit statistical analysis methods can be performed as an inter-well test (utilizing sample data from a designated background well) or as an intra-well test (utilizing sample data from the historical results of the constituent/compliance well). In either case, a comparison is made of each individual compliance concentration for the most recent event to the maximum concentration in background samples. The non-parametric prediction limit method does not produce an actual limit, but simply a maximum value of the constituent concentration above which contamination is assumed. It should be noted that the Unified Guidance suggests that all non-detects should be replaced with one-half (½) of the RL for the purpose of identifying the prediction limit (i.e., maximum background concentration) for parametric prediction interval analysis. For the purpose of identifying the prediction limit for non-parametric prediction interval analysis, all non-detect values should be reduced to zero or one-half (½) of the RL. For reporting purposes, the laboratory represents all non-detects as being less than the RL (e.g., ND<100) for each constituent. The reduction of non-detect values to zero would be necessary due to differences in RLs used throughout the monitoring history for the facility and if there were RLs that exceeded actual confirmed detection values. By reducing the non-detects to zero, it would ensure that a prediction limit represented by an RL value is never higher than an actual confirmed detection.

3.1.19.4 Evaluation of Statistically Significant Increases

Any statistical method chosen under ADEM Admin. Code r. 335-13-4-.27 shall comply with the following performance standards, as appropriate.

- The statistical methods used to evaluate groundwater monitoring data shall be appropriate for the distribution of the chemical parameters or hazardous constituents is shown by the owner or operator to be inappropriate for a normal theory test, then the data should be transformed, or a distribution-free theory test should be used. If the distributions for the constituents differ, more than one statistical test may be needed.
- If an individual well comparison procedure is used to compare an individual compliance well constituent concentration with background constituent concentrations or a groundwater protection standard, the test shall be done at a Type I error level no less than 0.01 for each testing period. If a multiple comparisons procedure is used, the Type I experiment wise error rate for each testing period shall be no less that 0.05. However, the Type I error of no less than 0.01 for individual well comparisons must be maintained. This performance standard does not apply to tolerance intervals, prediction intervals, or control charts.
- If a control chart approach is used to evaluate groundwater monitoring data, the specific type of control chart and its associated parameter values shall be protective of human health and the environment. The parameters shall be determined after considering the number of samples in the background database, the data distribution, and the range of the concentrations values for each constituent of concern.
- If a tolerance interval or prediction interval is used to evaluate groundwater monitoring data, the levels of confidence and, for tolerance intervals, the percentage of the population that the interval must contain, shall be protective of human health and the environment. These parameters shall be determined after considering the number of samples in the background database, the data distribution, and the range of the concentration values for each constituent of concern.
- The statistical method shall account for data below the limit of detection with one or more statistical procedures that are protective of human health and the environment. Any practical quantitation limit (PQL) that is used in the statistical method shall be the lowest concentration level that can be reliable achieved within specified limits of precision and accuracy during routine laboratory operating conditions that are available to the facility.
- If necessary, the statistical method shall include procedures to control or correct for season and spatial variability, as well as temporal correlation in the data.

If a constituent has been detected in a compliance monitoring well then it is required that statistical analysis for determination of an SSI be performed for that constituent/compliance well pair. However, before an SSI can be declared, the constituent/compliance well pair should be re-sampled to confirm (or disconfirm) the concentration value which prompted the initial indication of an SSI. If a groundwater constituent is detected at a level determined to represent an SSI above background values and the SSI cannot be attributed to errors in sampling, laboratory analysis, statistical evaluation, or natural variation in groundwater quality, the facility is typically required to initiate (or continue) Assessment Monitoring.

Because trend tests can be a useful tool for identifying changes in groundwater geochemistry across a site, trend tests will be submitted for all detected constituents.

3.1.19.5 Confidence Intervals

The May 2009 Statistical Analysis of Groundwater Monitoring Data Unified Guidance recommends the use of confidence intervals as a general statistical strategy for comparing groundwater analytical data to Groundwater Protection Standards (GWPSs) to determine if groundwater concentrations statistically exceed established standards. A confidence interval around the mean is designed to estimate the true average of the underlying population, while at the same time accounting for variability in the sample data set. Confidence limit intervals [Upper Confidence Limits (UCLs) and Lower Confidence Limits (LCLs)] can be constructed around the population median (50th percentile) for constituent/compliance pair sample data. These limits define the range in which the true concentration should be expected to exist. The Unified Guidance recommends that the null hypothesis (i.e., the assumption that the compliance concentration is less than an established standard) is not true when the entire confidence interval, including the LCL, exceeds the established standard. Therefore, as long as the LCL for a specific constituent is less than or equal to the established standard, the constituent/well data indicates that no statistical exceedance of the GWPS has occurred. However, if the LCL for specific constituent/well data exceeds an established maximum contaminant level (MCL) or GWPS, then there is statistically significant evidence that the population median is greater than the GWPS and an Alternate Source Determination (ASD) or an Assessment of Corrective Measures (ACM) may be warranted.

To calculate an LCL around the median with 99% confidence, a minimum of seven compliance point measurements is required in order to calculate a non-parametric confidence interval. The process involves an iterative computation of the interval endpoints in order to select the endpoints that are associated with a 99% confidence level. Considering that generating LCLs involves an iterative testing procedure (i.e., ranking of analytical data from lowest to highest concentrations), laboratory non-detect values are set to zero (0) prior to any ranking of the data. Substituting zero (0) for non-detect values is performed to ensure that a non-detect value is never ranked higher than a detected value. The Unified Guidance recommends ending the iterative computations when the confidence level changes by less than 1 or 2 percent when a new set of candidate ranks is selected. Additionally, a new set of candidate ranks will only be selected if the confidence level increase by 2 percent or more. A table of iterative endpoints and associated confidence levels will be submitted for each non-parametric confidence interval constructed around the median.

If the dataset can be normalized, a parametric confidence interval will be generated for comparison to the GWPS value per Chapter 21-1 of the Unified Guidance.

The Unified Guidance recommends using trend tests in detection monitoring to measure the extent and nature of an apparent concentration increase, especially to determine whether or not the increase occurs consistently over time. Trend tests graphically depict positive or negative trends over a period of monitoring. By identifying positive trends, one can show that contaminant levels have increased in comparison to early measurements from the well being tested. Furthermore, by measuring the nature of the trend, including the average rate of increase per unit of time, one can estimate how rapidly concentrations are increasing and the current mean or median-level magnitude of contamination. Results of Trend Testing methods, as outlined in Chapter 17 of the Unified Guidance, for each statistical exceedance will be submitted with each groundwater monitoring report.

3.1.20 Detection Verification Procedures

If detection monitoring results are determined initially to be above the appropriate statistical level, the result will be verified. Verification re-sampling is an integral part of the statistical methodology described by U.S. EPA's Addendum to Interim Final Guidance Document - Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities (July 1992). Without verification re-sampling, much

larger statistical limits would be required to achieve site-wide false-positive rates of 5% or less. Furthermore, the resulting false-negative rate would be greatly increased. Only compounds that initially exceed their statistical limit will be sampled for verification purposes.

If one or more of the inorganic parameters are detected above their statistical limit (i.e., Shewhart-CUSUM control chart computation value/prediction limit), a minimum of one verification resample will be collected within 45 days of the initial sampling event. If the exceedance is confirmed during the next event, a second verification re-sampling event may be completed within 30 days. A statistical exceedance will be recorded and alternate source identification of assessment monitoring initiated if verification of two or more elevated parameters is confirmed for each of the discrete verification resamples.

3.1.21 Assessment Monitoring

If the detection monitoring programs results in at least one SSI that cannot be demonstrated to have been caused by a source other than the Landfill, then the assessment monitoring program will be triggered and will be initiated within 90 days of the SSI confirmation. Initially, and for each event, thereafter, a minimum of one groundwater sample from each monitoring well indicating a confirmed SSI will be sampled and will be analyzed for all constituents listed in Appendix II to ADEM Admin. Code r. 335-13-4-.27(4). If any Appendix II constituent is detected either from the initial or from any subsequent sampling event, a notice identifying the detected constituent(s) will be placed in the landfill's operating record and ADEM will be notified within 14 days of a confirmed detection(s). Then, within 90 days and at least semiannually thereafter, all wells will be resampled for those Appendix II constituents that were detected.

For each Appendix II constituent detected in any downgradient well, the background for that constituent will be established by analyzing at least four independent samples from each well (background and downgradient) unless the background has been established previously. After background has been established for each detected Appendix II constituent, a groundwater protection standard (GWPS) will be established. The GWPS shall be one of the following:

- The MCL for the constituents, if a MCL has been promulgated under the Safe Drinking Water Act, or
- The background concentration of a constituent for which a MCL has not been promulgated, or
- The background concentration of a constituent for which background values exceed a promulgated MCL, or
- Any alternative standard that ADEM might specify for a constituent for which a MCL has not been established. An example would be a preliminary screening value (PSV) as established by the ADEM and documented in the Alabama Risk based Corrective Action Guidance or the regional screening level (RSL) as established by the EPA.

Concentrations of Appendix II constituents detected in samples from downgradient wells will be compared statistically with background values and GWPS's. If concentrations for all Appendix II constituents are shown to be at or below background values for two consecutive sampling events, the landfill will return to detection monitoring. If concentrations of any one or more of the Appendix II constituents are detected at statistically increased (SSIs) levels above the GWMP, the owner/operator will, within 14 days, notify ADEM, notify appropriate local government officials, and put notice of the SSI in the operating record. Then, unless it can be successfully demonstrated according to the requirements of ADEM Admin. Code r. 335-13-4-.27(4)(g) that conditions other than the landfill are responsible for the SSI, the following actions will be taken:

- The nature and extent of the release will be characterized by installing additional well(s) in an

attempt to identify the plume geometry both laterally and vertically.

- At least one additional monitoring well will be constructed at the facility boundary in the direction of contaminant migration and sampled at least once per year.
- If contaminants have migrated off-site, all persons who own or reside on land that directly overlies any part of the plume of contamination will be notified in writing.
- Assessment of corrective measures will be initiated within 90 days.

3.1.22 Corrective Action

Corrective action, if required, shall be conducted in accordance with ADEM Admin. Code r. 335-13 -4-.27(5). Corrective action shall proceed in three stages: assessment of corrective measures, evaluation of corrective measures to select a remedy, and implementation of the remedy. An assessment for corrective measures will be initiated within 90 days of the detection of any of the Appendix II constituents at a statistical exceedance of the GWPS. During the period when corrective measures are being assessed assessment monitoring will be continued. The assessment will include an analysis of the effectiveness of potential corrective measured and will address the issued described in ADEM Admin. Code r. 335-13.4.27(5). Results of the assessment will be discussed in a public meeting with interested and affected parties prior to the selection of a remedy. The remedy will meet the standards of ADEM Admin. Code r. 335-13-4-.27(5) and will be based on the evaluation of factors listed therein. Within 14 days of selecting a remedy, ADEM will be notified that a report describing the remedy has been placed in the operating record of the landfill. A schedule for initiating and completing remedial activities will be specified. Factors listed in ADEM Admin. Code r. 335-13-4-.27(5) will be considered in determining the schedule for remedial activities. Implementation of the remedy will include activities necessary to initiate and continue remediation to the required completion and will be conducted in accordance with ADEM Admin. Code r. 335-13-4.-.27(5).

4.0 EXPLOSIVE GAS MONITORING

The explosive gas monitoring stations identified at the facility shall be monitored for methane gas levels during the active life, closure and post-closure care period in accordance with ADEM requirements and this explosive gas monitoring plan. The Phifer Industrial Landfill maintains twenty-seven (27) gas wells positioned along the perimeter of the facility. The gas wells are constructed of 2-inch PVC and have an average depth of seven feet below ground surface (BGS). The explosive gas monitoring system has been monitored on a periodic basis since its installation in 1993. The locations of the permanent on-site explosive gas wells are depicted on Figure A-II. The Environmental Engineer will be responsible for ensuring that this plan is executed and reporting is completed. Personnel instrumental in this effort include the on-site management team and Environmental Engineer.

4.1 Technical Considerations

Common landfill gases include ammonia, carbon dioxide, carbon monoxide, hydrogen, hydrogen sulfide, methane, nitrogen, and oxygen. The relative proportions of various landfill gases are tabulated below.

COMPONENT	PERCENT (dry volume basis)
Methane	45-60%
Carbon Dioxide	40-60%
Nitrogen	2-5%
Oxygen	0.1-1%
Sulfides	0-1%

COMPONENT	PERCENT (dry volume basis)
Ammonia	0.1-1%
Hydrogen	0-0.2%
Carbon Monoxide	0-0.2%
Trace Constituents	0.01-0.6%

Reference: Integrated Solid Waste Management Engineering Principals and Management Issues (1993).

Methane and carbon dioxide are the principal gases produced from the anaerobic decomposition of the biodegradable organic waste components in landfills. As shown above, landfill gases are the result of microbial decomposition of solid waste. Methane gas, the principal component of natural gas, is generally the primary concern in evaluating landfills because it is odorless and highly combustible.

Methane gas is lighter than air and carbon dioxide is heavier than air. The gases will remain mixed and will migrate according to the density gradients between the landfill gas and the surrounding gases. This is also significantly affected by other gradients such as temperature and partial pressure. Generally, landfill gas will migrate along the path of least resistance

4.2 Explosive Gas Monitoring Procedures

Methane gas is a product of solid waste decomposition. The accumulation of a sufficient concentration of methane gas may pose a serious threat to facility employees, nearby occupants, and users of the facility. The generation of explosive gases, especially methane, at the disposal facility which accepts organic waste has been considered in the design and operation of the facility. Special attention has been given control and monitoring of explosive gases in accordance with Rule 335-13-4-.16 and EPA 40 CFR, Section 258.23.

Explosive Gas Monitoring will be conducted on an annual basis (September), or as otherwise specified by the ADEM, at each permanent explosive gas point identified. The existing gas monitoring wells or barhole punch method will be utilized by the facility to monitor these locations at a minimum depth of four feet. A standard portable gas detection instrument for monitoring landfill gas will be used in accordance with the manufacturer's recommendations, to detect the methane gas concentrations in each monitoring station at the facility. In addition to the explosive gas stations, other monitoring stations including any on-site structures, culverts, drop inlets, and other location conducive to gas accumulation shall be monitoring on an annual basis.

4.2.1 Probe Calibration

The improper calibration of the utilized instrument can lead to exposure to hazardous gases and/or oxygen-deficient environments. Prior to each explosive gas monitoring event, the gas probe will be calibrated in accordance with the manufacturer's literature. Gas detector calibration should be completed in environmental conditions that are the same (or similar to) the actual workplace conditions. This process is recommended because detectors may have sensitivity to temperature and humidity variances. Gas detector calibration records should be kept for the instrument to help ensure that the equipment is in proper working condition.

4.2.2 Barhole Probing Method

Barhole probing is most useful when conducted along the perimeter of a landfill to determine whether combustible gas is migrating off-site. Areas with gas-stressed vegetation (burned-out areas) are usually indicators of near surface landfill gas migration. With the aid of the plunger bar, a hole is made to a minimum depth of four feet below ground surface. Upon removal of the plunger bar, the probe hole

will be sealed for at least one hour before sampling begins, With the instrument in the HIGH range, the aspirator bulb is slowly squeezed and released several times, recording the reading obtained following continuous sampling (stabilized value). If the concentrations of gas are less than 5% on the HIGH scale, another barhole is punched and the sampling procedure is repeated in the LOW range.

Combustible gas monitoring procedures will be done initially in the HIGH range. If the reading is less than five percent, the procedure will be repeated at the LOW range. The reading will be recorded on a field data sheet (enclosed as Appendix C). When barhole monitoring yields a high concentration of combustible gas, additional barhole probing is required. Barholes are punched and sampled at "as directed" intervals, radiating our in various directions from the original barhole of concern, until reading of zero are obtained. By employing a radial or grid-type pattern, a graph depicting the apparent movement of gas based on concentration can be plotted. Barhole probing will be done at varying depths from the ground surface to a depth of approximately three feet. Shallower barhole probing on the order of six to twelve inches will be done when investigating for cover soil gas concentrations in areas of stressed vegetation.

The monitoring technician should note that there are a number of seasonal variables which may affect the overall effectiveness of the barhole probe method. The moisture content of the ground may greatly affect the concentration of gas detected because combustible gas migrates readily through dry soil and bedrock materials, as opposed to wet or saturated materials. Additionally, water saturated conditions may prohibit the use of the barehole probe method. Under these conditions, water infiltrates the barhole and can be sucked into the instrument during sampling. This would damage the filament and rend the instrument useless. The use of a moisture tram and an aluminum probe with small diameter cross-drilled holes approximately six inches from the tip, helps reduce the possibility of liquid drawing into the gas detector, but does not prevent it.

During testing, the technician should note the retracting of the aspirator bulb. If the bulb is very slow in returning to its normal inflated form, this is an indication that liquids are being drawn through the probe. Frozen ground conditions will inhibit plunger bar penetration. The preferred months for employing the barhole probe technique are the summer months, when conditions are dry. Though seasonal weather conditions may inhibit the use of the barhole probe technique, they do not prohibit the use as a year-round monitoring technique.

Combustible gas is dynamic and extremely migratory and may vary in concentrations at the same location due to seasonal conditions. Thus, at times it may be difficult to correlate data from one sampling area to the next.

4.2.3 Building & Structure Monitoring

The monitoring of structures can present a sensitive situation due to the possibility/proximity of human inhabitants. Combustible gas accumulation should be monitored within confined areas of the structure such as corners, along baseboards, crawl spaces, attics, underground facilities, drainage structures (drains, toilets, sumps, etc.) or any area where air movement is restricted.

When monitoring for combustible gas in buildings or structures, a rigid fiberglass probe will be used. The narrow tip allows for easy access to cracks and other narrow spaces. An aluminum probe can also be used for sampling; however, the two cross-drilled holes should first be covered to prevent the dilution of the sample. The instrument will not be used at locations where compounds such as tetraethyl lead or hydraulic fluids or lubricants, which contain salines, silicates or silicones, may be present in the atmosphere. These chemicals contaminate the sensor and thus reduce measurement accuracy.

In addition to routine sampling, buildings may be monitored by permanently installed gas detectors. As continuous monitoring devices, these detectors have built-in alarm systems which sound if gas concentrations exceed a predetermined value. The combustible gas monitor, which is calibrated to sound an internal alarm when combustible gas concentrations reach or exceed by volume, 1% methane (10,000 ppm), will be used if structure monitoring is deemed necessary. The monitors will be installed where combustible gas is most likely to accumulate and in areas of potential leaks.

The utilized monitors will be calibrated prior to each gas monitoring event. It is recommended that a simple check of the alarm be performed each month to verify that sensor activity can be achieved using a butane lighter. More frequent checks are necessary during periods of extreme humidity and temperature changes. Review of the instruction manual is recommended prior to installation and/or testing.

If the alarm is activated, the following procedures should be considered to ensure safety:

- Do not turn on or off, unplug or operate any electrical items (i.e., lights, fans, overhead doors, drills, etc.)
- Open all available doors and windows to ventilate the structure. The monitor will continue to alarm until methane concentrations drop below 1% methane.
- If the alarm continues, even after ventilating the area, evacuate all personnel from the structure. Personnel should be aware the monitors are calibrated to alarm at 1% methane and that the lower explosive limit is 5%. Therefore, a safety margin is provided.
- Designated personnel using gas detection equipment will be called in to determine where the infiltration of methane gas is occurring (i.e. floor drains, foundation cracks, underground utility concentrations, etc.).
- After the area of concern has been determined, it should be sealed to prevent another occurrence. Silicone caulks should not be used as they are harmful to the gas detecting equipment and may cause inaccurate readings.
- Appropriate staff should be notified and an assessment should be performed to prevent any future occurrence.

Care should be taken in the placement of the monitors, because they will be affected by the following:

- High concentrations of carbon monoxide,
- Paint thinner, gasoline fumes, and other similar vapor emitting components
- Aerosol spray or cleaners

Situations such as these should be avoided because several occurrences may affect the calibration of the monitor.

4.3 Explosive Gas Reporting

The levels of gas detected in each well and any other monitoring stations shall be expressed in percent methane by volume and percent of Lower Explosive Limit (LEL). Copies of the monitoring report shall be submitted to ADEM and placed in the Operating Record of the facility within 30 days of the monitoring event.

4.4 Interpretation of Data

The LEL of the methane is 5% by volume. Explosive gas levels should not exceed the lower explosive limit at the facility boundary and should not exceed 25% of the lower explosive limit in facility structures. If the explosive gas levels at the facility exceed the respective limits, the Landfill Operator

shall immediately take necessary steps to ensure the protection of human health and property and shall immediately notify ADEM of the exceeded limits.

Where combustible gas concentrations exceed 5% by volume at a probe location or 1.25% by volume within a structure, these locations shall be identified in a separate report and attached to the Gas Monitoring Report. Remedial action options will be evaluated by all involved parties and will ultimately be the responsibility of the Environmental Engineer. Personnel designated to perform the monitoring and reporting of data will be trained in the proper operation, maintenance, and calibration of all monitoring equipment. Monitoring will be conducted by facility personnel or a qualified outside consultant/contractor.

4.5 Regulatory Requirements

If the explosive gas levels at the facility exceed the respective limits, the Landfill Operator shall immediately take necessary steps to ensure the protection of human health and property. Specifically, the Landfill Operator shall notify ADEM's Solid Waste Branch of the excessive levels and follow any procedures deemed necessary by the Department. In addition, the owner/operator shall perform explosive gas monitoring in and around nearby residences and structures, which are conducive to gas accumulation.

Within seven days of detection, the Landfill Operator shall place in the Operating Record, the explosive gas levels detected and the immediate steps taken to protect human health and property. Within twenty days of detection, the Landfill Operator shall submit to ADEM for approval a remedial plan for the explosive gas releases. This Plan shall describe the nature and extent of the problem and the proposed remedy. This Plan shall be implemented upon approval by ADEM within 60 days of detection. Within this 60-day period, a copy of the plan shall be placed in the Operating Record and ADEM shall be notified of the plan's implementation.

4.6 Safety

When monitoring landfill sites, the monitoring technician should be alert to the hazards caused by the presence of potentially combustible landfill gas. Hazards that might occur could be one or more of the following:

1. Fires may start from exposed and/or decomposing solid waste.
2. Fires and explosions may occur from the presence of landfill gas. Methane gas (CH_4) which is about 50% of the total landfill gas, and which is also known as marsh gas and or methyl hydrate, is a flammable, colorless, odorless, and tasteless gas.
3. Landfill gas may cause an oxygen deficiency un underground trenches, vaults, conduits, and structures. As a safety precaution, confined-space entry procedures should be followed.
4. Hydrogen Sulfide (H_2S) may also be present. H_2S is a colorless, very flammable gas which, in low concentrations, has an offensive odor similar to that of rotten eggs. H_2S can be highly toxic. Although the odor of H_2S is recognizable (unless masked) at 1/400 of the lowest possible amount that can cause injurious effects, sense of smell is lost within 2 to 15 minutes of exposure. At higher concentrations it will instantly deaden the sense of smell and cause death within seconds by terminating the function of the motor center in the brain.
5. The following safety precautions should be adhered to by personnel while monitoring for combustible gas:
    - The site safety requirements for hard hats and glasses will be followed.
    - No smoking at any time.
    - A fire extinguisher must be readily available, especially when monitoring gas concentrations within structure and/or confined spaces.

- Barhole probing will not be conducted near building unless:
    a) Sub-grade utility lines are located and clearly marked prior to the monitoring event.
    b) A person with knowledge of all sub-grade utility lines is present at the time of the monitoring event.
    c) Monitoring personnel are in receipt of an accurate site utility plan/map.
- The site-specific landfill safety program should be followed.

As an odorless, tasteless gas, methane is undetectable by the human senses. Therefore, sampling personnel must continually be aware of, and avoid all potential sources of ignition. When monitoring in confined areas, it is recommended that a Gas Tech GX82 Tritector be used to continually monitor the gas conditions within the working area. This Tritector monitors methane, oxygen, and hydrogen sulfide and will provide both a visual and audible alarm if gas concentrations exceed or drop below a set level.

When methane is introduced to an area, fresh air is gradually displaced until the area may be completely filled with the gas. During this process, the air/methane mixture passes through three specific ranges: lean, explosive, and rich. Mixtures in the lean range, which extends from fresh air to the lower explosive limit (LEL), contain too little gas in relation to the amount of air to burn (that is, propagation of flame does not occur on contact with a source of ignition). A mixture of the LEL, which is 5% by volume, is the lowest concentration of methane in air that will explode or burn when ignited. Mixtures in the explosive flammable range, which extends from the LEL to the upper explosive limit (UEL), will propagate flame. Large volumes of combustible gases or vapors in these concentrations, if ignited, can cause damage and personal injury. A mixture at the UEL (15%) has the highest concentration of combustible gas in air that will burn. Mixtures in the rich range, which extends from the UEL to 100% methane, contain too much gas in relation to air to be combustible. However, since the addition of air to these high concentrations of methane creates mixtures in the flammable region, they must be considered equally dangerous.

4.7 Emergency Measures

If explosive gases are detected in excess of the lower explosive limit or 25 percent of the lower explosive limit in structures, corrective actions will be taken in accordance with Section 4.2.3. The Department will be notified of the explosive gas levels detected after the following immediate steps are taken to protect human health and property.

- All open flames will be extinguished
- All machinery in the affected area will be turned off. Workers will leave the affected area by the most convenient means.
- Electrical service to the offices contained personnel will be turned off, the windows and doors opened and the offices evacuated if the affected area is nearby.
- The local fire authorities will be notified of the situation.
- Workers will not be allowed to return to the affected area until local fire authorities and/or gas monitoring experts declares the affected area safe.
- The remaining requirements, as noted in Section 4.2.3 will be followed.

APPENDIX A: Figures

Figure A-I: Site Location & Topographic Map
Figure A-II: Site Layout Map
Figure A-III: USGS Geologic Map

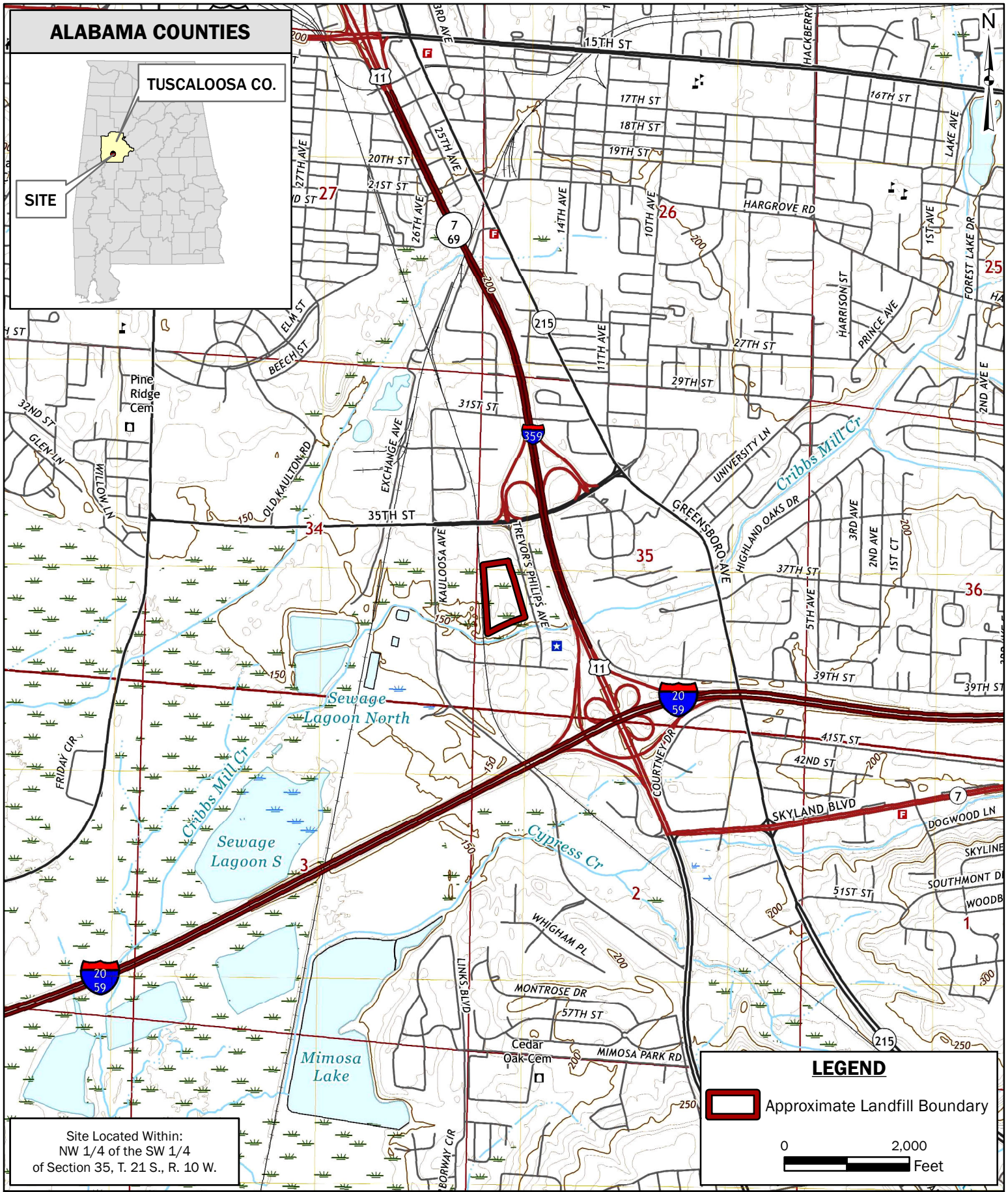


FIGURE A-I: SITE LOCATION & TOPOGRAPHIC MAP

PHIFER WIRE PRODUCTS, INC.

PERMIT NO. 63-08

TUSCALOOSA, TUSCALOOSA COUNTY, ALABAMA

BASEMAP: Tuscaloosa, Alabama, USGS 7.5 Minute Quadrangle Map, 2018 (10-ft Contour Interval).

DRAWN BY:	DEK
CHECKED BY:	AWH
DRAWING DATE:	3/20/2022
REVISION DATE:	N/A
TTL JOB NO.:	0600040
APPROX. SCALE:	1 in = 2,000 ft

TTL

FIGURE A-II: SITE LAYOUT MAP

PHIFER WIRE PRODUCTS, INC.

PERMIT NO. 63-08

TUSCALOOSA, TUSCALOOSA COUNTY, ALABAMA

BASEMAP: Google Earth Imagery, 9/28/2019

DRAWN BY:	DEK
CHECKED BY:	AWH
DRAWING DATE:	3/20/2022
REVISION DATE:	N/A
TTL JOB NO.:	0600040
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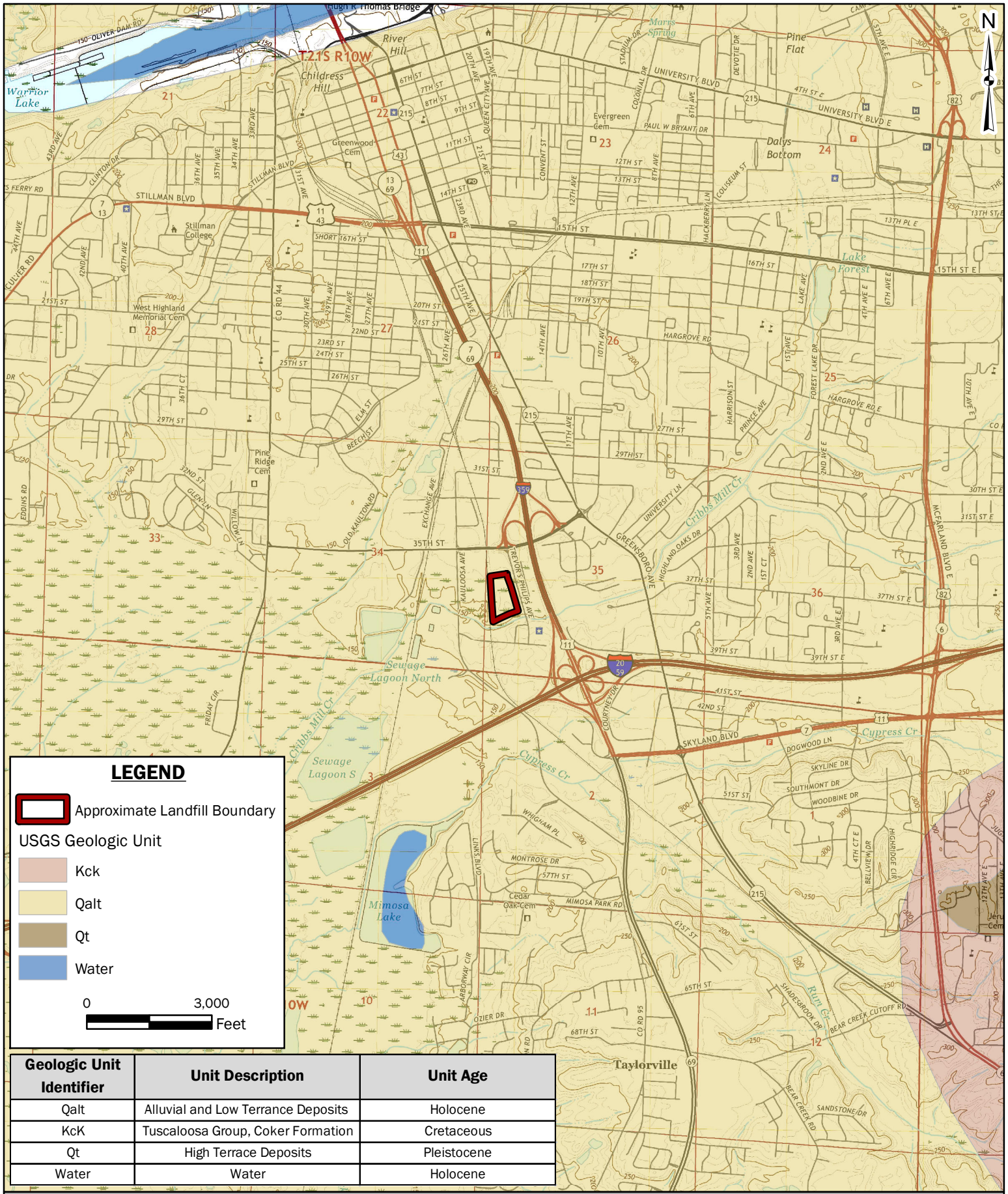


Geologic Unit Identifier	Unit Description	Unit Age
Qalt	Alluvial and Low Terrance Deposits	Holocene
KcK	Tuscaloosa Group, Coker Formation	Cretaceous
Qt	High Terrace Deposits	Pleistocene
Water	Water	Holocene

TTL

FIGURE A-III: USGS GEOLOGIC MAP

PHIFER WIRE PRODUCTS, INC.

PERMIT NO. 63-08

TUSCALOOSA, TUSCALOOSA COUNTY, ALABAMA

BASEMAP: Tuscaloosa, Alabama, USGS 7.5 Minute Quadrangle Map, 2018 (10-ft Contour Interval).

DRAWN BY:	DEK
CHECKED BY:	AWH
DRAWING DATE:	3/20/2022
REVISION DATE:	N/A
TTL JOB NO.:	0600040
APPROX. SCALE:	1 in = 3,000 ft

APPENDIX B: Field Information Form & ADEM Groundwater Monitoring Report Form

GROUNDWATER MONITORING FORM

PROJECT NAME: _____ TTL PROJECT No: _____

SAMPLING DATE: _____ TIME: _____ PERSON COLLECTING SAMPLE: _____

WELL NUMBER: _____ TOP OF CASING ELEVATION (MSL): _____ ft

TOTAL DEPTH OF WELL: _____ ft BLS DEPTH TO WATER: _____ ft BMP

VOLUME REMOVED BEFORE SAMPLING: _____ gal.

INSIDE DIAMETER OF WELL CASING: _____ in. WELL CASING MATERIAL: PVC

SAMPLING EQUIPMENT: (BAILER, PUMP, ETC.): _____

Specific conductance	_____	(µmhos/cm)
pH	_____	(standard units)
Temperature	_____	(degrees in F or C)
Turbidity	_____	(NTUs)
Odor of sample	_____	
Unusual characteristics	_____	
Filter size, if filtered	_____	
Weather Conditions	_____	
Accessibility of well	_____	
Condition of well	_____	
Other comments	_____	

_____
Field Representative

GROUNDWATER MONITORING REPORT

Facility Name: _____ **TTL Project No.:** _____

Sample Date: _____ **Time:** _____ **Person Collecting Sample:** _____

Purge Date: _____ **Well Number:** _____ **Top of Casing Elevation (MSL):** _____

Diameter of Well Casing: _____ **inches** **Well Casing Material:** _____

Total Depth of Well (TD): _____ **feet** **Depth to Water (DW):** _____

One Well Volume: _____ **gal** **X3** _____ **gal** **X5** _____ **gal**

Purging Equipment: _____ **Sampling Equipment:** _____

Field Parameter Equipment (brand & SN): _____

Time												
Volume (gal.)												
Water Level (ft.)												
Temperature (°C)												
Sp. Cond. (µmhos)												
pH												
D.O.												
ORP												
Turbidity (NTU)												
Pump Setting												
Carbon Dioxide												
Iron II												
Alkalinity												
Sulfide												

Total Volume Purged: _____ **gal** **Color of Sample:** _____ **Odor of Sample:** _____

Weather Conditions: _____

Accessibility of Well: _____ **Condition of Well:** _____

Unusual Characteristics: _____

Other Comments: _____

APPENDIX C: Gas Monitoring and Observation Report

Gas Monitoring and Observation Report

Client: ______________________ **Site:** ______________________

Permit No.: ______________________ **Date:** ______________________

Sample Point	Boundary Reading		Time	Temperature °F	Sample Point	Boundary Reading		Time	Temperature °F
	(%LEL)	Methane (% Vol)				(%LEL)	Methane (% Vol)		

Notes: ______________________

I certify that all results are true and accurate and performed in accordance with procedures required by ADEM.

____
Environmental Technician

Attachment B.

NPDES General Permit ALG160005 and SWP3-BMP

LANCE R. LEFLEUR
DIRECTOR

KAY IVEY
GOVERNOR

Alabama Department of Environmental Management
adem.alabama.gov
1400 Coliseum Blvd. 36110-2400 ■ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ■ FAX (334) 271-7950

December 3, 2021

MR. JOHN STUMPFF
SAFETY AND ENVIRONMENTAL ENGINEER
PHIFER INCORPORATED
4400 KAULOOSA AVE
TUSCALOOSA, AL 35401

RE: **Phifer Incorporated Landfill**
3700 Trever S. Phillips Ave
Tuscaloosa, AL 35401
Tuscaloosa County, 125

Dear Mr.Stumpff:

Based on your request (as evidenced by the submittal of a Notice of Intent), coverage under **General NPDES Permit Number ALG160005** is granted. The effective date of reissuance coverage is February 01, 2022.

Coverage under this permit does not authorize the discharge of any pollutant or wastewater that is not specifically identified in the permit and by the Notice of Intent which resulted in the granting of coverage. Those discharges identified in the NOI are:

Outfall ID	Receiving Water	Notes
0011	Cribbs Mill Creek	This outfall's discharge requires monitoring per the general permit requirements.
0012	Cribbs Mill Creek	This outfall's discharge requires monitoring per the general permit requirements.

You are responsible for compliance with all provisions of the permit including but not limited to, the performance of any monitoring, the submittal of any reports, and the preparation and implementation of any plans required by the permit.

Discharge Monitoring Reports (DMRs) must be submitted electronically via the Alabama Environmental Permitting and Compliance System (AEPACS) in accordance with Permit Condition I. C. To participate in this program, the Permittee Participation Package and registration forms may be downloaded online at adem.alabama.gov/aepacs. ADEM will not provide paper DMR forms due to the electronic reporting requirements.

If you discharge to an impaired waterway, additional Best Management Practices (BMPs) will be required. The Alabama Department of Environmental Management encourages you to exercise pollution prevention

practices and alternatives at your facility. Pollution prevention will assist you in complying with effluent limitations and permit regulations.

A copy of the General NPDES Permit under which coverage of your discharges has been granted is enclosed. If you have any questions concerning this permit, please contact Monique Miles either by email at mmm@adem.alabama.gov or by phone at (334) 271-7853.

Sincerely,

Jeffery W. Kitchens, Chief
Water Division

Enclosure: Permit

File: NOI/ 41713

Alabama Department of Environmental Management

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT

DISCHARGE AUTHORIZED: DISCHARGES OF STORM WATER (**NOT** CONTAINING LEACHATE) FROM ACTIVE AND INACTIVE LANDFILLS, TRANSFER STATIONS, AND LAND DISTURBANCE ACTIVITIES ASSOCIATED WITH OPENING AND CLOSING CELLS AT LANDFILLS; DISCHARGES OF VEHICLE AND EQUIPMENT EXTERIOR WASH WATER; AND DISCHARGES OF STORM WATER FROM FUELING, PETROLEUM STORAGE AND HANDLING, EQUIPMENT STORAGE, AND MAINTENANCE AREAS

AREA OF COVERAGE: THE STATE OF ALABAMA

PERMIT NUMBER: ALG160005

RECEIVING WATERS: ALL WATERS OF THE STATE NOT DESIGNATED OUTSTANDING NATIONAL RESOURCE WATERS OR OUTSTANDING ALABAMA WATERS

In accordance with and subject to the provisions of Federal Water Pollution Control Act, as amended, 33 U.S.C. §§1251-1388 (the "FWPCA"), the Alabama Water Pollution Control Act, as amended, ***Code of Alabama 1975,*** *§§22-22-1 to 22-22-14 (the "AWPCA"), the Alabama Environmental Management Act, as amended,* ***Code of Alabama 1975****, §§22-22A-1 to 22-22A-17, and rules and regulations adopted thereunder, and subject further to the terms and conditions set forth in this permit, the dischargers covered by this permit are hereby authorized to discharge into the above receiving waters.*

ISSUANCE DATE: November 10, 2021

EFFECTIVE DATE: February 1, 2022

EXPIRATION DATE: January 31, 2027

Alabama Department of Environmental Management

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

PART I: DISCHARGE LIMITATIONS, CONDITIONS, AND REQUIREMENTS

A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's Notice of Intent (NOI):

DSN001: Discharges of storm water (NOT containing leachate) from active or inactive landfills, transfer stations, and land disturbance activities associated with opening and closing cells at landfills.

Such discharge shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	UNITS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS [1 2 3]	
		Daily Minimum	Daily Maximum	Measurement Frequency	Sample Type
Rainfall	inches	–	Monitor	1/6 months	[4]
pH	s.u.	Monitor	Monitor	1/6 months	Grab
Biochemical Oxygen Demand, 5-day	mg/l	–	Monitor	1/6 months	Grab
Chemical Oxygen Demand	mg/l	–	Monitor	1/year	Grab
Cadmium, Total	mg/l	–	Monitor	1/6 months	Grab
Chromium, Total	mg/l	–	Monitor	1/6 months	Grab
Copper, Total	mg/l	–	Monitor	1/6 months	Grab
Oil and Grease	mg/l	–	15	1/6 months	Grab
Settleable Solids [5 7]	mg/l	–	Monitor	1/6 months [7]	Grab
Total Dissolved Solids	mg/l	–	Monitor	1/6 months	Grab
Total Suspended Solids	mg/l	–	Monitor	1/6 months	Grab
Downstream Turbidity [5 6 7]	NTU	–	[6]	1/6 months [7]	Grab
Upstream Turbidity [5 6 7]	NTU	–	Monitor	1/6 months [7]	Grab

THERE SHALL BE NO DISCHARGE OF DEBRIS. THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS

Notes:

1 Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment.

2 Semiannual monitoring shall be performed during the first complete January – June, or July – December period following authorization under this permit and during each subsequent six (6) month period. The annual parameter may be taken during the first or second six months of the monitoring period, but must be taken if there is a full six month period or more remaining in the monitoring period. The annual parameter result is reported on the semiannual form that is applicable to the date the annual parameter sample was taken. For the six months period that the facility did not sample the annual parameter, the facility must code the annual parameter on the semiannual electronic report as *9 or on the semiannual hardcopy report as “NODI=9” (monitoring is conditional not required this period). Quarterly monitoring shall be performed during the first complete January – March, April-June, July-September, or October – December period following authorization under this permit and during each subsequent three (3) month period. Monitoring reports shall be submitted semiannually so that they arrive at the Department no later than the 28th day of the month following the six (6) month monitoring period (no later than January 28 and July 28).

3 A storm event is defined as 0.1 inch or greater rainfall and at least 72 hours from the previously measureable (greater than 0.1 inch rainfall) storm event. Monitoring shall be performed during the first thirty minutes of discharge (or as soon thereafter as practicable).

4 See Part IV.A. of the permit.

5 To be monitored only when land disturbance activities (associated with opening and closing cells at landfills) are occurring. These land disturbance activities may include digging for cover material within the permitted landfill area, but not outside of that permitted area. If no such land disturbance activities are occurring, then the landfill must code the discharge monitoring report (DMR) for that period as “NODI=9” (monitoring is conditional not required this period).

6 Downstream turbidity shall not exceed 50 NTUs above the upstream turbidity.

7 If the permittee discharges to impaired waters as identified by an EPA-approved or EPA established TMDL and/or on the State of Alabama’s 303(d) list, then settleable solids, downstream turbidity, and upstream turbidity must be monitored quarterly instead of semi-annually. ADEM reserves the right to require the permittee to obtain an individual permit for any of the reasons listed in Part II. F. 5. a. (1) through (9) of the permit.

A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's NOI:

DSN002: Discharges of storm water from petroleum storage and fueling areas[7]

Such discharge shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	UNITS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS [1]	
		Daily Minimum	Daily Maximum	Measurement Frequency	Sample Type
Rainfall	inches	–	Monitor	1/quarter	[2]
pH	s.u.	Monitor	Monitor	1/quarter	Grab
Benzene [3]	µg/l	–	15.5	1/quarter	Grab
Ethylbenzene [4]	µg/l	–	1,244	1/quarter	Grab
Toluene [5]	µg/l	–	8,723	1/quarter	Grab
Xylene	µg/l	–	Monitor	1/quarter	Grab
Naphthalene [6]	µg/l	–	620	1/quarter	Grab
Oil and Grease	mg/l	–	15	1/quarter	Grab
MTBE (Methyl Tertiary Butyl Ether)	µg/l	–	Monitor	1/quarter	Grab

THERE SHALL BE NO DISCHARGE OF DEBRIS. THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS

Notes:

[1] Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment.

[2] See Part IV.A.

[3] The limit for benzene shall be 1.12 µg/l if the discharge is to a body of water which is designated as a public water supply or within a 24-hour travel time to a body of water designated as a PWS.

[4] The limit for ethylbenzene shall be 448 µg/l if the discharge is to a body of water which is designated as a public water supply or within a 24-hour travel time to a body of water designated as a PWS.

[5] The limit for toluene shall be 1,206 µg/l if the discharge is to a body of water which is designated as a public water supply or within a 24-hour travel time to a body of water designated as a PWS.

[6] To be monitored only at facilities which handle diesel fuel.

[7] If fueling operations are the only industrial activities occurring within the drainage area, then DSN003 applies for the discharge, unless the Department deems it necessary to require monitoring under DSN002 in addition to DSN003.

A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's NOI:

DSN003: Discharges of uncontaminated storm water from fueling, petroleum storage and handling, equipment storage, and maintenance areas.

DISCHARGES UNDER DSN003 MAY NOT MIX WITH OTHER DISCHARGES UNLESS THOSE DISCHARGES ARE PERMITTED.

All discharges from DSN003 shall meet the following conditions:

1. The facility will have a valid Spill Prevention, Control, and Countermeasures (SPCC) plan, if required, pursuant to 40 CFR 112.
2. Best Management Practices (BMP) will be used to prevent pollution of storm water by spillage or leakage during petroleum handling and fueling operations and from equipment maintenance and storage areas. The BMP shall include at a minimum:
   a. Twice per week inspections of the area and removal of any leaked petroleum product;
   b. Immediate cleanup of spilled or leaked petroleum product during handling operations, including fueling; and
   c. All cleanup activities shall be conducted using dry sweep or other approaches that do not result in the creation of polluted wastewater or storm water runoff.
3. Records shall be maintained in the form of a log and shall contain the following information, at a minimum:
   a. Date and time of inspections;
   b. Any cleanup accomplished as a result of the inspection;
   c. Time the cleanup was initiated and the time it was completed;
   d. The signature of person making visual inspection and performing any cleanup; and
   e. Description of any spillage occurring during petroleum handling, which shall include the date and time of the spill, estimated volume of spill, name of the person observing the spill, date and time the spill was cleaned up, and name of the person cleaning up the spill.
4. Best Management Practices (BMP) are used in draining the diked area. BMP is defined as use of a portable oil skimmer or similar device or the use of absorbent material to remove oil and grease (as indicated by the presence of a sheen) immediately prior to draining.
5. Monitoring records for dike drainage shall be maintained in the form of a log and shall contain the following information, as a minimum:
   a. Date and time of discharge;
   b. Estimated volume of discharge;
   c. Initials of person making visual inspection and authorizing discharge.
6. The discharge shall have no sheen, and there shall be no discharge of visible oil, floating solids or visible foam in other than trace amounts.
7. The permittee shall submit an **Annual Certification DMR** by January 28th of each year (but no earlier than January 1st) that reports whether all discharges were in accordance with the conditions of this permit for the previous calendar year.

DMR Reporting Instructions

The Annual Certification DMR should be marked "0" (zero) if operations had not changed and all discharges were in accordance with the conditions of the permit. If conditions had changed or all discharges were not in accordance with the conditions of the permit, the DMR should be marked "1" and the facility should contact the department regarding any changes in conditions or discharge/permit noncompliance. Any noncompliance should also be reported in accordance with Part I.C.2.

A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's NOI:

DSN004: Discharges from vehicle and equipment exterior washing operations that DO NOT use solvents and have NOT come in direct contact with solid waste at the landfill facility. [3]

Such discharge shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	UNITS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS [1]	
		Daily Minimum	Daily Maximum	Measurement Frequency	Sample Type
Flow	gal/day	–	Monitor	1/month	Instantaneous [2]
pH	s.u.	6.0	8.5	1/month	Grab
Oil and Grease	mg/l	–	15	1/month	Grab
Phosphorus, Total	mg/l	–	1.0	1/month	Grab
Total Suspended Solids	mg/l	–	50	1/month	Grab

THERE SHALL BE NO DISCHARGE OF DEBRIS. THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS

Notes:

1 Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment.

2 If flows are intermittent, the flow volume may be estimated.

3 This permit does not allow for the discharge of landfill wastewater as defined by 40 CFR Part 445.2(f).

A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's NOI:

Discharge Monitoring Requirements applicable to all storm water discharges.

Monitoring of one storm water outfall within a designed drainage area as representative of the remaining outfalls, may be allowed if the applicant submits certification that the discharges are essentially the same. If at a later date the discharges are determined to be dissimilar or if pollutant concentrations are such that water quality standards are contravened, then monitoring of all discharges may be required.

This permit does not allow for the discharge of landfill wastewater as defined by 40 CFR Part 445.2(f).

B. DISCHARGE MONITORING AND RECORD KEEPING REQUIREMENTS

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge and shall be in accordance with the provisions of this permit.

2. Test Procedures

For the purpose of reporting and compliance, permittees shall use one of the following procedures:

a. For parameters with an EPA established Minimum Level (ML), report the measured value if the analytical result is at or above the ML and report "0" for values below the ML. Test procedures for the analysis of pollutants shall conform to 40 CFR Part 136 and guidelines published pursuant to §304(h) of the FWPCA, 33 U.S.C. §1314(h). If more than one method for analysis of a substance is approved for use, a method having a minimum level lower than the permit limit shall be used. If the minimum level of all methods is higher than the permit limit, the method having the lowest minimum level shall be used and a report of less than the minimum level shall be reported as zero and will constitute compliance, however, should EPA approve a method with a lower minimum level during the term of this permit the permittee shall use the newly approved method.

b. For pollutants parameters without an established ML, an interim ML may be utilized. The interim ML shall be calculated as 3.18 times the Method Detection Level (MDL) calculated pursuant to 40 CFR Part 136, Appendix B.

   Permittees may develop an effluent matrix-specific ML, where an effluent matrix prevents attainment of the established ML. However, a matrix specific ML shall be based upon proper laboratory method and technique. Matrix-specific MLs must be approved by the Department, and may be developed by the permittee during permit issuance, reissuance, modification, or during compliance schedule.

   In either case the measured value should be reported if the analytical result is at or above the ML and "0" reported for values below the ML.

c. For parameters without an EPA established ML, interim ML, or matrix-specific ML, a report of less than the detection limit shall constitute compliance if the detection limit of all analytical methods is higher than the permit limit. For the purpose of calculating a monthly average, "0" shall be used for values reported less than the detection limit.

   The Minimum Level utilized for procedures A and B above shall be reported on the permittee's DMR. When an EPA approved test procedure for analysis of a pollutant does not exist, the Director shall approve the procedure to be used.

3. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The facility name and location, point source number, date, time and exact place of sampling;

b. The name(s) of person(s) who obtained the samples or measurements;

c. The dates and times the analyses were performed;

d. The name(s) of the person(s) who performed the analyses;

e. The analytical techniques or methods used, including source of method and method number; and

f. The results of all required analyses.

4. Records Retention and Production

a. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the above reports or the NOI for this permit, for a period of at least three years from the date of the sample measurement, report or NOI. This period may be extended by request of the Director at any time. If litigation or other enforcement action, under the AWPCA and/or the FWPCA, is ongoing which involves any of the above records, the records shall be kept until the litigation is resolved. Upon the written request of the Director or his designee, the permittee shall provide the Director with a copy of any record required to be retained by this paragraph. Copies of these records shall not be submitted unless requested.

b. All records required to be kept for a period of three years shall be kept at the permitted facility or an alternate location approved by the Department in writing and shall be available for inspection. A complete copy of the permit, the Best Management Practices (BMP) Plan, most recent BMP inspection records, and, if applicable, a Spill Prevention, Control, and Countermeasures (SPCC) Plan shall be maintained at the facility. The past three years of DMRs, laboratory records, and historical BMP inspection and training records may be kept at an alternate Alabama location if approved by the Department.

5. Monitoring Equipment and Instrumentation

All equipment and instrumentation used to determine compliance with the requirements of this permit shall be installed, maintained, and calibrated in accordance with the manufacturer's instructions or, in the absence of manufacturer's instructions, in accordance with accepted practices. At a minimum, flow measurement devices shall be calibrated at least once every 12 months.

C. DISCHARGE REPORTING REQUIREMENTS

1. Reporting of Monitoring Requirements

a. This permit requires weekly, monthly, quarterly, semiannual, and annual self-monitoring. The permittee shall conduct the required monitoring in accordance with the following schedule:

MONITORING REQUIRED MONTHLY AND MORE FREQUENTLY THAN MONTHLY shall be conducted during the first full month following the effective date of initial coverage under this permit and every month thereafter.

QUARTERLY MONITORING shall be conducted at least once during each calendar quarter. Calendar quarters are the periods of January through March, April through June, July through September, and October through December. The permittee shall conduct the quarterly monitoring during the first full quarter following the effective date of initial coverage and each quarter thereafter.

SEMI-ANNUAL MONITORING shall be conducted at least once during the period of January through June and at least once during the period of July through December. The permittee shall conduct the semi-annual monitoring during the first complete six-month period following the effective date of initial coverage and each six-month period thereafter.

ANNUAL MONITORING shall be conducted at least once during the period of January through December. If six or more months are remaining in the first monitoring period after initial coverage the annual monitoring shall be conducted and then once each twelve month period thereafter.

b. The permittee shall submit discharge monitoring reports (DMRs) in accordance with the following schedule:

REPORTS OF MORE FREQUENTLY THAN MONTHLY, MONTHLY, QUARTERLY, AND SEMI-ANNUAL MONITORING shall be submitted on a semiannual basis. The semiannual reports shall be submitted so that they are received by the Department no later than the 28th day of July and the 28th day of January, unless otherwise directed by the Department. Each submittal shall report results of all testing performed during the six-month period preceding the reporting month. For example, the semiannual report due on January 28 should report the results of testing conducted during the months of July through December.

c. Except as allowed by Provision I.C.1.c.(1) or (2), the permittee shall submit all Discharge Monitoring Reports (DMRs) required by Provision I.C.1.b. by utilizing the Department's web-based system.

(1) If the permittee is unable to complete the electronic submittal of DMR data due to technical problems originating with the Department's web-based system (this could include entry/submittal issues with an entire set of DMRs or individual parameters), the permittee is not relieved of their obligation to submit DMR data to the Department by the date specified in Provision I.C.1.b., unless otherwise directed by the Department.

If the Department's web-based system is down on the 28th day of the month in which the DMR is due or is down for an extended period of time, as determined by the Department, when a DMR is required to be submitted, the permittee may submit the data in an alternate manner and format acceptable to the Department. Preapproved alternate acceptable methods include faxing, e-mailing, mailing, or hand-delivery of data such that they are received by the required reporting date. Within five calendar days of the Department's web-based system resuming operation, the permittee shall enter the data into the Department's web-based system, unless an alternate timeframe is approved by the Department.

(2) The permittee may submit a request to the Department for a temporary electronic reporting waiver for DMR submittals. The waiver request should include the permit number; permittee name; facility/site name; facility address; name, address, and contact information for the responsible official or duly authorized representative; a detailed statement regarding the basis for requesting such a waiver; and the duration for which the waiver is requested. Approved electronic reporting waivers are not transferrable.

Permittees with an approved electronic reporting waiver for DMRs may submit hard copy DMRs for the period that the approved electronic reporting waiver request is effective. The permittee shall submit the Department-approved DMR forms to the address listed in Provision I.C.1.e.

(3) If a permittee is allowed to submit a hard copy DMR, the DMR must be legible and bear an original signature. Photo and electronic copies of the signature are not acceptable and shall not satisfy the reporting requirements of this permit.

(4) If the permittee, using approved analytical methods as specified in Provision I.B.2, monitors any discharge from a point source for a limited substance identified in Provision I.A. of this permit more frequently than required by this permit, the results of such monitoring shall be included in the calculation and reporting of values on the DMR and the increased frequency shall be indicated on the DMR.

(5) In the event no discharge from a point source identified in Provision I.A. of this permit and described more fully in the permittee's NOI occurs during a monitoring period, the permittee shall report "No Discharge" for such period on the appropriate DMR.

d. All reports and forms required to be submitted by this permit, the AWPCA and the Department's Rules and Regulations, shall be electronically signed (or, if allowed by the Department, traditionally signed) by a "responsible official" of the permittee as defined in ADEM Administrative Code Rule 335-6-6-.09 or a "duly authorized representative" of such official as defined in ADEM Administrative Code Rule 335-6-6-.09 and shall bear the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

e. Discharge Monitoring Reports required by this permit, the AWPCA, and the Department's Rules that are being submitted in hard copy shall be addressed to:

Alabama Department of Environmental Management
Permits and Services Division
Environmental Data Section
Post Office Box 301463
Montgomery, Alabama 36130-1463

Certified and Registered Mail containing Discharge Monitoring Reports shall be addressed to:

Alabama Department of Environmental Management
Permits and Services Division
Environmental Data Section
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2400

f. All other correspondence and reports required to be submitted by this permit, the AWPCA, and the Department's Rules shall be addressed to:

Alabama Department of Environmental Management
Water Division
Post Office Box 301463
Montgomery, Alabama 36130-1463

Certified and Registered Mail shall be addressed to:

Alabama Department of Environmental Management
Water Division
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2400

2. Noncompliance Notification

a. If for any reason, the permittee's discharge (1) does not comply with any daily minimum or maximum discharge limitation for an effluent characteristic specified in Provision I. A. of this permit which is denoted by an "(X)", (2) threatens human health or welfare, fish or aquatic life, or water quality standards, (3) does not comply with an applicable toxic pollutant effluent standard or prohibition established under Section 307(a) of the FWPCA, 33 U.S.C. Section 1317(a), (4) contains a quantity of a hazardous substance which has been determined may be harmful to public health or welfare under Section 311(b)(4) of the FWPCA, 33 U.S.C. Section 1321(b)(4), (5) exceeds any discharge limitation for an effluent characteristic as a result of an unanticipated bypass, upset, (6) is an unpermitted direct or indirect discharge of a pollutant to a water of the state (unpermitted discharges properly reported to the Department under any other requirement are not required to be reported under this provision), the permittee shall orally report the occurrence and circumstances of such discharge to the Director within 24-hours after the permittee becomes aware of the occurrence of such discharge. In addition to the oral report, the permittee shall submit to the Director electronically a report (or if acceptable to the Department a written report) as provided in Provision I. C. 2. c. no later than five (5) days after becoming aware of the occurrence of such discharge.

b. If for any reason, the permittee's discharge does not comply with any limitation of this permit, the permittee shall submit to the Director a report as provided in Provision I. C. 2. c. below, such report shall be submitted with the next Discharge Monitoring Report required to be submitted by Provision I. C. 1. of this permit after becoming aware of the occurrence of such noncompliance.

c. Any electronic report (or if acceptable to the Department a written report) required to be submitted to the Director by Provision I. C. 2 a. or b. shall be submitted using a copy of the Department’s Noncompliance Notification Form and shall include the following information:

(1) A description of the discharge and cause of noncompliance;

(2) The period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue; and

(3) A description of the steps taken and/or being taken to reduce or eliminate the noncomplying discharge and to prevent its recurrence.

D. OTHER REPORTING AND NOTIFICATION REQUIREMENTS

1. Anticipated Noncompliance

The permittee shall give the Director written advance notice of any planned changes or other circumstances regarding a facility, which may result in noncompliance with permit requirements. This information must be submitted electronically unless acceptable to the Department to submit otherwise.

2. Termination of Discharge

The permittee shall notify the Director, when any point source discharges authorized by this permit have permanently ceased, by submitting a permit termination request electronically through the Department's web-based system. This notification shall serve as sufficient cause for instituting procedures for termination of the permittee's authority to discharge under this General Permit.

3. Updating Information

a. The permittee shall inform the Director of any change in the permittee's mailing address or telephone number or in the permittee's designation of a facility contact or office having the authority and responsibility to prevent and abate violations of the AWPCA, the Department's Rules and the terms and conditions of this permit, in writing, no later than ten (10) days after such change. Upon request of the Director or his designee, the permittee shall furnish the Director with an update of any information provided in the NOI.

b. If the permittee becomes aware that it failed to submit any relevant facts in the NOI, or submitted incorrect information in the NOI; or in any report to the Director, it shall promptly submit such facts or information with a written explanation for the mistake and/or omission. This information must be submitted electronically unless acceptable to the Department to submit otherwise.

4. Duty to Provide Information

a. Any permittee shall furnish to the Director, within a reasonable time, any information which the Director or his designee may request to determine whether cause exists for suspending or revoking the permittee's authorization to discharge under this General Permit, in whole or in part, or to determine compliance with this permit or to determine if the permittee should be required to apply for an individual permit.

b. Any or all permittees shall furnish to the Director, within a reasonable time, any information which the Director or his designee may request to determine whether cause exists for modifying or terminating this permit.

5. New or Increased Discharges

If there is an increase in pollution potential of the discharges from the permittee's facility the permittee must notify the Director in writing. The Director may at his discretion determine under Part II.F. of this permit what action if any will be taken.

E. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the discharge limitations specified in Provision I. A. in accordance with the following schedule:

COMPLIANCE SHALL BE ACHIEVED ON THE EFFECTIVE DATE OF COVERAGE UNDER THIS PERMIT

2. If required, no later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement. This information must be submitted electronically unless acceptable to the Department to submit otherwise.

PART II: OTHER REQUIREMENTS, RESPONSIBILITIES, AND DUTIES

A. REQUIREMENTS FOR COVERAGE UNDER THIS GENERAL PERMIT

1. Notice of Intent

Any person wishing to be permitted to discharge under this General Permit shall submit a Notice of Intent (NOI) to be covered by this General Permit at least 30 days prior to the date of desired coverage. No discharge authorized under this General Permit may commence until the discharger receives the Director's acknowledgement of the NOI and approval of the coverage of the discharge by this General Permit. The Director's acknowledgement shall include a copy of this General Permit.

The permittee must complete and submit all Departmental forms, including the NOI, utilizing the Department's web-based system unless the permittee submits in writing valid justification as to why the electronic submittal process cannot be utilized and the Department approves in writing utilization of hard copy submittals. For approved hard copy submissions, the Departmental forms are available on ADEM's webpage at http://adem.alabama.gov/DeptForms/default.cnt.

Any person discharging to a municipal storm sewer, sanitary sewer or combination sewer must notify the municipality by letter of the discharge.

2. Content of Notice of Intent

a. A description of the process generating the discharge for which coverage is desired. This description shall be in sufficient detail to allow the Director to determine that the discharge is included in the category permitted by this General Permit;

b. The latitude and longitude of the discharge points for each discharge and the name of the waterbody receiving each discharge for which coverage under this General Permit is desired; and

c. A contact person, address and phone number for the facility or activity to be covered under this General Permit;

(1) The NOI shall be electronically signed (or if acceptable to the Department traditionally signed) by a person meeting the requirements for signatories to permit application under ADEM Administrative Code Rule 335-6-6-.09 and the person signing the NOI shall make the certification required for submission of documents under ADEM Administrative Code Rule 335-6-6.09.

(2) Signatories to reports, discharge monitoring reports and any other submissions required by this General Permit shall be signed in accordance with the requirements of ADEM Administrative Code Rule 335-6-6.09.

B. OPERATIONAL AND MANAGEMENT REQUIREMENTS

1. Facilities Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities only when necessary to achieve compliance with the conditions of the permit.

2. Best Management Practices

a. Dilution water shall not be added to achieve compliance with discharge limitations except when the Director or his designee has granted prior written authorization for dilution to meet water quality requirements.

b. The permittee shall prepare, implement, and maintain a Spill Prevention, Control and Countermeasures (SPCC) Plan in accordance with 40 CFR Part 112 if required thereby.

c. The permittee shall prepare and implement a Best Management Practices (BMP) Plan according to Part IV of this permit.

3. Spill Prevention, Control, and Management

The permittee shall provide spill prevention, control, and/or management sufficient to prevent any spills of pollutants from entering a water of the state or a publicly or privately owned treatment works. Any containment system used to implement this requirement shall be constructed of materials compatible with the substance(s) contained and which shall prevent the contamination of groundwater and such containment system shall be capable of retaining a volume equal to 110 percent of the capacity of the largest tank for which containment is provided.

C. OTHER RESPONSIBILITIES

1. Duty to Mitigate Adverse Impacts

The permittee shall promptly take all reasonable steps to mitigate and minimize or prevent any adverse impact on human health or the environment resulting from noncompliance with any discharge limitation of this permit, including such accelerated or additional monitoring of the discharge and/or the receiving waterbody as necessary to determine the nature and impact of the noncomplying discharge.

2. Right of Entry and Inspection

The permittee shall allow the Director, or an authorized representative, upon the presentation of proper identification to:

a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under the permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the AWPCA, any substances or parameters at any location.

D. BYPASS AND UPSET

1. Bypass

a. Any bypass is prohibited except as provided in b. and c. below:

b. A bypass is not prohibited if:

(1) It does not cause any discharge limitation specified in Provision I. A. of this permit to be exceeded;

(2) It is necessary for essential maintenance of a treatment or control facility or system to assure efficient operation of such facility or system; or

(3) It is part of the storm water control system when the intention of the design, as approved by the Director, is to contain the first flush only.

c. A bypass is not prohibited and need not meet the discharge limitations specified in Provision I. A. of this permit if:

(1) It is unavoidable to prevent loss of life, personal injury, or severe property damage;

(2) There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime (this condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable

engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance); and

(3) The permittee submits a written request for authorization to bypass to the Director at least ten (10) days prior to the anticipated bypass (if possible), the permittee is granted such authorization, and the permittee complies with any conditions imposed by the Director to minimize any adverse impact on human health or the environment resulting from the bypass. This request must be submitted electronically unless acceptable to the Department to submit otherwise.

d. The permittee has the burden of establishing that each of the conditions of Provision II. D. 1. b. or c. have been met to qualify for an exception to the general prohibition against bypassing contained in a. and an exemption, where applicable, from the discharge limitations specified in Provision I. A. of this permit.

2. Upset

a. A discharge which results from an upset need not meet the discharge limitations specified in Provision I. A. of this permit if:

(1) No later than 24-hours after becoming aware of the occurrence of the upset, the permittee orally reports the occurrence and circumstances of the upset to the Director or his designee; and

(2) No later than five (5) days after becoming aware of the occurrence of the upset, the permittee furnishes the Director with evidence, including properly signed, contemporaneous operating logs, or other relevant evidence, demonstrating that (i) an upset occurred; (ii) the permittee can identify the specific cause(s) of the upset; (iii) the permittee's facility was being properly operated at the time of the upset; and (iv) the permittee promptly took all reasonable steps to minimize any adverse impact on human health or the environment resulting from the upset.

b. The permittee has the burden of establishing that each of the conditions of Provision II D. 2. a. of this permit have been met to qualify for an exemption from the discharge limitations specified in Provision I. A. of this permit.

E. DUTY TO COMPLY WITH PERMIT, RULES, AND STATUTES

1. Duty to Comply

a. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the AWPCA and the FWPCA and is grounds for: enforcement action, termination, or suspension of authorization under this permit; denial of a permit reissuance NOI; a requirement that permittee submit an NOI for an individual NPDES permit.

b. The necessity to halt or reduce production or other activities in order to maintain compliance with the conditions of the permit shall not be a defense for a permittee in an enforcement action.

c. The discharge of a pollutant from a source not specifically identified in the NOI to be covered under this General Permit and not specifically included in the description of an outfall in this permit is not authorized and shall constitute noncompliance with this permit.

d. The permittee shall take all reasonable steps, including cessation of production or other activities, to minimize or prevent any violation of this permit or to minimize or prevent any adverse impact of any permit violation.

2. Removed Substances

Solids, sludges, filter backwash, or any other pollutant or other waste removed in the course of treatment or control of storm waters and/or process water shall be disposed of in a manner that complies with all applicable Department Rules.

3. Loss or Failure of Treatment Facilities

Upon the loss or failure of any treatment facility, including but not limited to the loss or failure of the primary source of power of the treatment facility, the permittee shall, where necessary to maintain compliance with the discharge limitations specified in Provision I. A. of this permit, or any other terms or conditions of this permit, cease, reduce, or otherwise control production and/or all discharges until treatment is restored.

4. Compliance with Statutes and Rules

a. This permit has been issued under ADEM Administrative Code, Chapter 335-6-6. All provisions of this chapter, that are applicable to this permit, are hereby made a part of this permit. A copy of this chapter may be obtained on the Department's website or for a small charge from the Office of General Counsel, Alabama Department of Environmental Management, 1400 Coliseum Boulevard, Montgomery, AL 36110.

b. This permit does not authorize the noncompliance with or violation of any Laws of the State of Alabama or the United States of America or any regulations or rules implementing such laws. FWPCA, 33 U.S.C. Section 1319, and Code of Alabama 1975, Section 22-22-14.

F. PERMIT TRANSFER, MODIFICATION, SUSPENSION, REVOCATION, REISSUANCE, AND TERMINATION

1. Duty to Reapply or Notify of Intent to Cease Discharge

a. The permittee authorized to discharge under this General Permit, who wishes to continue to discharge upon the expiration of this permit, shall submit an NOI to request reissuance of coverage under the reissued General Permit. Such NOI shall be submitted at least 90 days prior to the expiration date of this General Permit. The permittee shall electronically submit the NOI utilizing the Department's web-based system, unless the permittee submits in writing valid justification as to why the electronic submittal process cannot be utilized, and the Department approves in writing the utilization of hard copy submittals.

b. Failure of the permittee to submit the appropriate NOI material for reauthorization under this permit at least 90 days prior to the permit's expiration will void the automatic continuation of the authorization to discharge under this permit as provided by ADEM Administrative Code Rule 335-6-6-.06. Should the permit not be reissued for any reason prior to its expiration date, permittees who failed to meet the 90-day submittal deadline will be illegally discharging without a permit after the expiration date of the permit.

2. Change in Discharge

a. The permittee shall give notice to the Director at least 90 days in advance of any facility expansion, production increase, process change, or other action that could result in:

(1) The discharge of additional pollutants;

(2) The increase in the quantity of any discharge such that existing permit limitations would be exceeded;

(3) Or that could result in an additional discharge point.

This requirement applies to pollutants that are or that are not subject to discharge limitations in this permit. No new or increased discharge may begin until the Director has reviewed the information and taken appropriate action to authorize the discharge under this General Permit, or until such time as an appropriate action has been taken to authorize the discharge under an individual permit.

b. The permittee shall notify the Director as soon as it is known or there is reason to believe:

(1) That any activity has occurred or will occur which would result in the discharge on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:

(a) One hundred micrograms per liter;

(b) Two hundred micrograms per liter for acrolein and acrylonitrile; five hundred micrograms per liter for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter for antimony;

(c) Five times the maximum concentration value reported for that pollutant in the permit NOI; or

(2) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:

(a) Five hundred micrograms per liter;

(b) One milligram per liter for antimony;

(c) Ten times the maximum concentration value reported for that pollutant in the permit NOI.

3. Transfer of Permit or Change in Name

This permit may not be transferred or the name of the permittee changed without notice to the Director and subsequent modification or revocation and reissuance of the permit to identify the new permittee and to incorporate any other changes as may be required under the FWPCA or AWPCA.

a. In the case of a change in ownership or control of the permittee's premises only, a request for permit transfer must be submitted electronically through the Department's web-based system at least 30 days prior to the change.

b. In the case of a change in ownership or control of the permittee's premises accompanied by a change or proposed change in effluent characteristics, a complete NOI is required to be submitted to the Director electronically through the Department's web-based system at least 90 days prior to the change.

c. In the case of a change in Permittee Name or Facility Name only, a request for permit name change must be submitted electronically through the Department's web-based system at least 30 days prior to the change.

Whenever the Director is notified of a change in ownership or control, he may decide not to modify the existing permit and require the submission of a new permit NOI.

4. Permit Modification, Revocation and Reissuance (of Modified General or Individual), and Termination

a. During the term of this General Permit the Director may, for cause, and subject to the public notice procedure of ADEM Administrative Code, Rule 335-6-6-.21, modify or revoke and reissue this General Permit, or terminate it and require all those authorized under it to apply for individual NPDES permits. The causes for this action include but are not limited to the causes listed below:

(1) There are material and substantial alterations or additions to the facility or activity generating the discharges which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit;

(2) When the Director receives any information that was not available at the time of permit issuance and that would have justified the application of different permit conditions at the time of issuance;

(3) When the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued;

(4) Upon the failure of the state to notify, as required by Section 402(b)(3) of the FWPCA, another state whose waters may be affected by a discharge;

(5) When the level of discharge of any pollutant which is not limited in the permit exceeds the level which can be achieved by the technology based treatment requirements appropriate to discharge under 40 CFR 125.3(c);

(6) To correct technical mistakes, such as errors in calculation, clerical errors or mistaken interpretations of law made in determining permit conditions;

(7) If the permit limitations are found not to be protective of water quality standards;

(8) To incorporate an applicable 307(a) FWPCA toxic effluent standard or prohibition;

(9) When required by the reopener conditions in this permit, and

(10)For any applicable cause set forth in ADEM Administrative Code Rule 335-6-6-.17.

b. Subject to the public notice procedures of ADEM Administrative Code Rule 335-6-6-.21, the Director may terminate this General Permit during its term for any of the causes for modification listed in Part II.F.4.a.

c. The Director may terminate authorization to discharge under this General Permit for cause. Cause shall include but not be limited to:

(1) Noncompliance with the permit;

(2) Noncompliance with Department Rules;

(3) A finding that this General Permit does not control the discharges sufficiently to protect water quality or comply with treatment based limits applicable to the discharge;

(4) The permittee's misrepresentation or failure to disclose fully all relevant facts in the permit NOI or during the permit issuance process or the permittee's misrepresentation of any relevant facts at any time;

(5) Materially false or inaccurate statements or information in the permit NOI or the permit;

(6) A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge;

(7) The permittee's discharge threatens human life or welfare;

(8) Permanent closure of the facility generating the wastewater permitted to be discharged by this permit or permanent cessation of wastewater discharge; and

(9) New or revised requirements of any applicable standard or limitation that is promulgated under Sections 301(b)(2)(C),(D),(E),and (F), and 307(a)(2) of the FWPCA that the Director determines cannot be complied with by the permittee.

d. If the permittee believes that any past or planned activity would be cause for modification or revocation and reissuance of this General Permit under ADEM Administrative Code Rule 335-6-6-.23 (7), or termination and issuance of an individual permit under ADEM Administrative Code Rule 335-6-6-.23 (9) the permittee must report such information to the Permit Issuing Authority. The submittal of a new NOI may be required of the permittee. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned change, anticipated noncompliance or application for an individual permit, does not stay any permit condition.

5. Issuance by the Director of an Individual NPDES Permit to a Person Eligible for Coverage or Covered by This General Permit.

a. The Director may require any person, otherwise eligible for coverage under this General Permit, to apply for an individual NPDES permit by notifying that person that an application is required. Notification shall consist of a written description of the reason(s) for the decision, appropriate permit application forms and directions, a statement informing the person that upon issuance of the individual permit coverage by this General permit shall automatically terminate. Reasons for this requirement may be:

(1) Noncompliance with the General Permit;

(2) Noncompliance with Department Rules;

(3) A change has occurred in the availability of demonstrated technology or practices for the control or abatement of pollutants applicable to the wastewater being discharged;

(4) Effluent guidelines are promulgated for a point source(s) covered by the General Permit;

(5) A water quality management plan applicable to the wastewater being discharged under this General Permit;

(6) Circumstances have changed since the time of the request to be covered so that the discharger is no longer appropriately controlled under this General Permit or either a temporary reduction or permanent reduction or elimination of the authorized discharge is necessary;

(7) Standards for sewage sludge use or disposal have been promulgated for the sludge use or disposal practice covered by this General Permit;

(8) The discharge(s) is a significant contributor of pollutants. In making this decision the Director may consider:

(a) the location of the discharges with respect to waters of the state,

(b) the size of the discharger, and

(c) the quantity and nature of the pollutants discharged to waters of the state.

(9) A determination that the water of the state receiving the discharge is not meeting applicable water quality standards.

6. Request for an Individual NPDES Permit by a Person Covered Under This General Permit.

a. Any person covered by this General Permit may apply for termination of coverage by applying for an individual NPDES permit.

b. A permit NOI submitted voluntarily or at the direction of the Director for the purpose of termination of coverage by this General Permit shall be processed in accordance with the rules found in ADEM Administrative Code 335-6-6 applicable to individual permits.

c. Any person may petition the Director for withdrawal of this General Permit authority from a discharger. The Director shall consider the information submitted by the petitioner and any other information he may be aware of and may obtain additional information from the discharger and through inspections by Department staff and shall decide if coverage should be withdrawn. The petitioner shall be informed of the Director's decision and shall be provided a summary of the information considered.

7. Request for Permit Action Does Not Stay Any Permit Requirement

The filing of a request by the permittee for any permit action such as termination, or application for individual permit or any other action, does not stay any permit term or condition.

G. COMPLIANCE WITH TOXIC POLLUTANT STANDARD OR PROHIBITION

If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the FWPCA, 33 U.S.C. Section 1317(a), for a toxic pollutant discharged by the permittee and such standard or prohibition is more stringent than any discharge limitation on the pollutant specified in Provision I. A. of this permit, or controls a pollutant not limited in Provision I. A. of this permit, this permit shall be modified to conform to the toxic pollutant effluent standard or prohibition and the permittee shall be notified of such modification. If this permit has not been modified to conform to the toxic pollutant effluent standard or prohibition before the effective date of such standard or prohibition, the permittee shall attain compliance with the requirements of the standard or prohibition within the time period required by the standard or prohibition and shall continue to comply with the standard or prohibition until this permit is modified or reissued.

H. DISCHARGE OF WASTEWATER GENERATED BY OTHERS

The discharge of wastewater, generated by any process, facility, or by any other means not under the operational control of the permittee or not identified in the NOI for this permit or not identified specifically in the description of an outfall in this permit is not authorized by this permit.

PART III: OTHER PERMIT CONDITIONS

A. CIVIL AND CRIMINAL LIABILITY

1. Tampering

Any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained or performed under the permit shall, upon conviction, be subject to penalties as provided by the AWPCA.

2. False Statements

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be subject to penalties as provided by the AWPCA.

3. Permit Enforcement

a. Any NPDES permit issued or reissued by the Department is a permit for the purpose of the AWPCA and the FWPCA and as such any terms, conditions, or limitations of the permit are enforceable under state and federal law and as described under Rule 335-6-6-.18.

b. Any person required to have a NPDES permit pursuant to ADEM Administrative Code Chapter 335-6-6 and who discharges pollutants without said permit, who violates the conditions of said permit, who discharges pollutants in a manner not authorized by the permit, or who violates applicable orders of the Department or any applicable rule or standard of the Department, is subject to any one or combination of the following enforcement actions under applicable state statutes.

(1) An administrative order requiring abatement, compliance, mitigation, cessation, clean-up, and/or penalties;

(2) An action for damages;

(3) An action for injunctive relief; or

(4) An action for penalties.

4. Relief from Liability

Except as provided in Provision II. D. 1. (Bypass) and Provision II. D. 2. (Upset), nothing in this permit shall be construed to relieve the permittee of civil or criminal liability under the AWPCA or FWPCA for noncompliance with any term or condition of this permit.

B. OIL AND HAZARDOUS SUBSTANCE LIABILITY

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject under Section 311 of the FWPCA, 33 U.S.C. Section 1321.

C. PROPERTY AND OTHER RIGHTS

This permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to persons or property or invasion of other private rights, or any infringement of federal, state, or local laws or regulations, nor does it authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any waters of the state or of the United States.

D. AVAILABILITY OF REPORTS

Except for data determined to be confidential under Code of Alabama 1975, Section 22-22-9(c), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. Effluent data shall not be considered confidential.

E. COMPLIANCE WITH WATER QUALITY STANDARDS

1. The permittee may be required by the Director to apply for an individual permit, if the Director determines that discharge under this General Permit causes a violation of a water quality standard or stream use classification.

2. Compliance with permit terms and conditions notwithstanding, if the permittee's discharge(s) from point sources identified in Provision I. A. of this permit cause or contribute to a condition in contravention of state water quality standards, the Department may require the permittee to take abatement action or apply for an individual permit pursuant to the Department's Rules, or both.

3. If the Department determines, on the basis of a notice provided pursuant to this permit or any investigation, inspection or sampling, that a modification of this permit is necessary to assure maintenance of water quality standards or compliance with other provisions of the AWPCA or FWPCA, the Department may require such modification.

F. GROUNDWATER

Unless specifically authorized under this permit, this permit does not authorize the discharge of pollutants to groundwater. Should a threat of groundwater contamination occur, the Director may require groundwater monitoring to properly assess the degree of the problem and the Director may require that the permittee undertake measures to abate any such discharge and/or contamination.

G. DEFINITIONS

1. *Authorization* – means granted the privilege of discharging under the terms of this General Permit.

2. *Average monthly discharge limitation* - means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month (zero discharge days shall not be included in the number of "daily discharges" measured and a less than detectable test result shall be treated as a concentration of zero if the most sensitive EPA approved method was used).

3. *Average weekly discharge limitation* - means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week (zero discharge days shall not be included in the number of "daily discharges" measured and a less than detectable test result shall be treated as a concentration of zero if the most sensitive EPA approved method was used).

4. *AWPCA* - means the Alabama Water Pollution Control Act.

5. *Bypass* - means the intentional diversion of waste streams from any portion of a treatment facility.

6. *Daily discharge* - means the discharge of a pollutant measured during any consecutive 24 hour period in accordance with the sample type and analytical methodology specified by the discharge permit.

7. *Daily maximum* - means the highest value of any individual sample result obtained during a day.

8. *Daily minimum* - means the lowest value of any individual sample result obtained during a day.

9. *Day* - means any consecutive 24-hour period.

10. *Department* - means the Alabama Department of Environmental Management.

11. *Director* - means the Director of the Department.

12. *Discharge* - means "[t]he addition, introduction, leaking, spilling or emitting of any sewage, industrial waste, pollutant or other waste into waters of the state". Code of Alabama 1975, Section 22-22-1(b)(8).

13. *Discharge monitoring report (DMR)* - means the form approved by the Director to accomplish reporting requirements of an NPDES permit.

14. *EPA* - means the United States Environmental Protection Agency.

15. *FWPCA* - means the Federal Water Pollution Control Act.

16. *Landfill Wastewater*, as defined by 40 CFR Part 445.2 (f), means all wastewater associated with, or produced by, landfilling activities except for sanitary wastewater, non-contaminated storm water, contaminated ground water, and wastewater from recovery pumping wells. Landfill wastewater includes, but is not limited to, leachate, gas collection condensate, drained free liquids, laboratory derived wastewater, contaminated storm water and contact washwater from washing truck, equipment, and railcar exteriors and surface areas which have come in direct contact with solid waste at the landfill facility.

17. *Notice of Intent* – means forms and additional information that are required by ADEM Administrative Code Rule 335-6-6-.23 and applicable permit fees.

18. *Permit application* - means forms and additional information that is required by ADEM Administrative Code Rule 335-6-6-.08 and applicable permit fees.

19. *Point source* - means "any discernible, confined and discrete conveyance, including but not limited to any pipe, channel, ditch, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged." Section 502(14) of the FWPCA, 33 U.S.C. Section 1362(14).

20. *Pollutant* - includes for purposes of this permit, but is not limited to, those pollutants specified in Code of Alabama 1975, Section 22-22-1(b)(3) and those effluent characteristics specified in Provision I. A. of this permit.

21. *Qualified Credentialed Professiona*l or *QCP* means a professional engineer (PE), or a Certified Professional in Erosion and Sediment Control (CPESC) as determined by CPESC, Inc. Other registered or certified professionals such as registered landscape architect, registered land surveyor, registered geologist, registered forester, Registered Environmental Manager as determined by the National Registry of Environmental Professionals (NREP), or Certified Professional and Soil Scientist (CPSS) as determined by ARCPACS, and other Department accepted professional designations, certifications, and/or accredited university programs that can document requirements regarding proven training, relevant experience, and continuing education, that can enable recognized individuals to prepare CBMPP's to makes sound professional judgments regarding Alabama NPDES rules, the requirements of this chapter, planning, design, implementation, maintenance, and inspection of construction sites, receiving waters, BMPs, remediation/cleanup of accumulated offsite pollutants from the regulated site, and reclamation or effective stormwater quality remediation of construction associated land disturbances, that meet or exceed recognized technical standards and guidelines, effective industry standard practices, and the requirements of this chapter. The QCP shall be in good standing with the authority granting the registration or designation. The design and implementation of certain structural BMPs may involve the practice of engineering and require the certification of a professional engineer pursuant to Alabama law.

22. *Severe property damage* - means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

23. *Shock chlorination* – means the periodic use of chlorine in cooling water systems as a biocide.

24. *Upset* - means an exceptional incident in which there is an unintentional and temporary noncompliance with technology-based permit discharge limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

25. *Waters* - means "[a]ll waters of any river, stream, watercourse, pond, lake, coastal, ground or surface water, wholly or partially within the state, natural or artificial. This does not include waters which are entirely confined and retained completely upon the property of a single individual, partnership or corporation unless such waters are used in interstate commerce." Code of Alabama 1975, Section 22-22-1(b)(2). Waters "include all navigable waters" as defined in Section 502(7) of the FWPCA, 22 U.S.C. Section 1362(7), which are within the State of Alabama.

26. *Week* - means the period beginning at twelve midnight Saturday and ending at twelve midnight the following Saturday.

H. 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.

PART IV: ADDITIONAL REQUIREMENTS, CONDITIONS, AND LIMITATIONS

A. STORM WATER MEASUREMENT AND SAMPLING

1. Storm Water Measurement

a. All storm water samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches.

b. The storm water event must be monitored, including the date and rainfall (in inches) for the storm event(s) sampled. The duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event must be a minimum of 72 hours. This information must be recorded as part of the sampling procedure and records retained according to Part I.B.4.b. of this permit.

c. During the sampling storm event, rainfall must be reported and may be measured using a rain guage. This information must be recorded as part of the sampling procedure and records retained according to Part I.B.4.b. of this permit.

2. Storm Water Sampling

a. A grab sample, if required by this permit, shall be taken during the first thirty minutes of the discharge (or as soon thereafter as practicable); and a flow weighted composite sample, if required by this permit, shall be taken for the entire event or for the first three hours of the event.

b. All test procedures will be in accordance with Part I.B.2. of this permit.

B. BEST MANAGEMENT PRACTICES (BMP) PLAN

1. Plan Content for Landfill Activities

The permittee shall prepare (or as required have a QCP prepare) and implement a best management practices (BMP) plan which shall:

a. Provide control sufficient to prevent or control pollution of storm water by soil particles to the degree required to prevent violation of the turbidity water quality standard applicable to the waterbody receiving the discharge;

b. Prevent the spillage or loss of fluids, oil, grease, gasoline, etc. from vehicle and equipment maintenance and repair activities and thereby prevent the contamination of storm water from these substances;

c. Prevent or minimize the storm water contact with material stored on site;

d. Designate by position or name the person or persons responsible for the day to day implementation of the BMP;

e. Provide for at a minimum, two inspections a week, on days during which the facility is manned, of any structures that function to prevent storm water pollution or to remove pollutants from storm water and of the facility in general to ensure that the BMP is continually implemented and effective;

f. If spillage is a factor during loading and unloading of bulk material, provide for prevention of the mixing of spillage with discharged storm water;

g. Include a diagram of the facility showing the direction of the storm water flow, the discharge point(s), and the locations of any structures or other mechanisms intended to prevent pollution of storm water or to remove pollutants from storm water, the locations of any collection and handling systems. The site map should also identify the location, size, and contents of any tanks.

h. Prevent the pollution of storm water by animal wastes;

i. Bear the signature of the landfill manager or corporate official;

j. The permittee must implement measures to ensure permanent revegetation or cover of all disturbed areas. The permittee shall perform regular clean-up and proper disposal of floating or submerged trash and garbage resulting from activities authorized by this permit;

k. The permittee shall implement, as necessary, a system for the collection, storage, treatment, and disposal of sewage and other putrescible wastes;

l. Appropriate measures must be taken to prevent the deposition of airborne pollutants such as spray paint, herbicides, excessive road dust, etc. from entering any waterbody.

2. Plan Content for Construction Activities

a. A Qualified Credentialed Professional must prepare the BMP Plan that addresses the land disturbance activities. Permittee shall implement a BMP Plan describing structural and non-structural practices which will be implemented and maintained to prevent/minimize the discharge of all sources of pollution (i.e., sediment, trash, garbage, debris, oil & grease, chemicals, materials, etc.) to State waters in storm water runoff. The Plan must be designed to address the following goals: (1) to divert upslope water around the site; (2) to limit the exposure of disturbed areas to precipitation to the shortest amount of time possible; (3) to minimize the amount of surface area that is disturbed; and (4) to remove sediment, nutrients, and other pollutants from the storm water before it leaves the site.

b. The BMP Plan means implementation and continued maintenance of effective structural and non-structural practices and management strategies to prevent and minimize the introduction of pollutants to stormwater and to treat stormwater to remove pollutants prior to discharge. The Alabama Handbook for Erosion Control, Sediment Control, and Stormwater Management on Construction Sites and Urban Areas, Alabama Soil and Water Conservation Committee (ASWCC) March 2009 edition and current industry standards shall be used as necessary to maintain compliance.

c. Dilution water shall not be added to achieve compliance with discharge limitations except when the Director or his designee has granted prior written authorization for dilution to meet water quality requirements.

d. The permittee must implement measures to ensure permanent revegetation or cover of all disturbed areas. The permittee shall perform regular clean-up and proper disposal of floating or submerged trash and garbage resulting from activities authorized by this permit.

e. The permittee shall implement, as necessary, a system for the collection, storage, treatment, and disposal of sewage and other putrescible wastes.

f. All construction and worker debris (e.g., trash, garbage, etc.) must be immediately removed and disposed on in an approved manner. No rubbish, trash garbage, refuse, or other such materials shall be discharged into waters of the State of Alabama.

g. Appropriate measures must be taken to prevent the deposition of airborne pollutants such as spray paint, herbicides, excessive road dust, etc. from entering any waterbody.

h. All materials used as fill for construction purposes must be non-toxic, non-acid forming and free of solid waste or other debris unless approved by the Department.

i. Include a diagram of the facility showing the direction of the storm water flow, the discharge point(s), and the locations of any structures or other mechanisms intended to prevent pollution of storm water or to remove pollutants from storm water, the locations of any collection and handling systems. The site map should also identify the location, size, and contents of any tanks.

j. Bear the signature of the landfill manager or corporate official.

3. Compliance Schedule

The permittee shall have prepared and fully implemented the BMP upon the date coverage is granted.

4. Department Review

a. When requested by the Director or his designee, the permittee shall make the BMP available for Department review.

b. The Director or his designee may notify the permittee at any time that the BMP is deficient and require correction of the deficiency.

c. The permittee shall correct any BMP deficiency identified by the Director or his designee within 30 days of receipt of notification and shall certify to the Department that the correction has been made and implemented.

5. Administrative Procedures

a. A copy of the BMP shall be maintained at the landfill and shall be available for inspection by representatives of the Department.

b. A log of the twice per week inspections required above shall be maintained at the landfill and shall be available for inspection by representatives of the Department. The log shall contain records of all inspections performed and any corrective actions taken for the last three years and each entry shall be signed by the person performing the inspection.

c. The permittee shall provide training for any personnel required to implement the BMP and shall retain documentation of such training at the facility. This documentation shall be available for inspection by representatives of the Department. Training shall be performed prior to the date that implementation of the BMP is required.

d. BMP Plan Modification. The permittee shall amend the BMP plan whenever there is a change in the facility or change in operation of the facility which materially increases the potential for the ancillary activities to result in a discharge of significant amounts of pollutants.

C. DISCHARGE(S) TO IMPAIRED WATERS REQUIREMENTS

1. Requirements Applicable to a Facility Eligible for Coverage, or Covered, under this Permit with Discharge(s) to 303(d) Listed Waters

This permit does not authorize new sources or new dischargers of pollutants of concern to impaired waters unless consistent with an EPA-approved or EPA-established Total Maximum Daily Load (TMDL) and applicable State law. Impaired waters are those that do not meet applicable water quality standards and are identified by an EPA-approved or EPA-established TMDL and/or on the State of Alabama's 303(d) list. Pollutants of concern are those pollutants for which the water body is listed as impaired and which contribute to the listed impairment.

a. The facility eligible for coverage, or covered, under this permit must determine whether its discharge(s) contributes directly or indirectly to a waterbody that is included on the latest 303(d) list or otherwise designated by the Department as impaired or is included in an EPA-approved or EPA-established TMDL. If the facility has discharges meeting this criterion, it must comply with Part IV.C., if its discharge does not meet this criterion, Part IV.C. does not apply to the facility.

b. Facilities that discharge into a receiving water which is listed on the State of Alabama's 303(d) list of impaired waters, and with discharges that contain the pollutant(s) for which the waterbody is impaired, must by April 30th of the following year or within 6 months of such approval of the 303(d) list or applicable TMDL or establishment of TMDL by EPA (whichever is longer), document in its BMP plan how the BMPs will control the discharge of the pollutant(s) of concern, and must ensure that there will be no increase of the pollutants of concern. A monitoring plan to assess the effectiveness of the BMPs in achieving the allocations must also be included in the BMP plan.

c. If the facility discharges to a waterbody described above, it must also determine whether a total maximum daily load (TMDL) has been developed and approved or established by EPA for the listed waterbody. If a TMDL is approved or established during this permit cycle by USEPA for any waterbody into which the facility discharges, the facility must review the applicable TMDL to see if it includes requirements for control of storm water

discharges. By April 30th of the following year or within 6 months of such approval of the 303(d) list or applicable TMDL or establishment of TMDL by EPA (whichever is longer), the facility must notify the Department on how it will modify its BMP plan to include best management practices specifically targeted to achieve the allocations prescribed by the TMDL. Revised BMP plans must be submitted to the Department for review. The facility must include a monitoring component in the BMP plan to assess the effectiveness of the BMPs in achieving the allocations. If the facility cannot ensure its discharges will not cause or contribute to impairment, then the facility must apply for and obtain permit coverage under an individual permit.

2. Requirements Applicable to a Facility Eligible for Coverage, or Covered, under this Permit with Discharges into Waters with EPA-Approved or EPA-Established TMDLs

a. The facility must determine whether the EPA-approved or EPA-established TMDL is for a pollutant likely to be found in discharges from its facility.

b. The facility must determine whether the TMDL includes a pollutant allocation or other performance requirements specifically for discharges from its facility.

c. If, after the determinations above have been made and if it is determined that the facility must implement specific allocations provisions of the TMDL, then the facility must assess whether the allocations are being met through implementation of existing control measures or if additional control measures are necessary.

d. The facility must document all control measures currently being implemented or planned to be implemented, to include a schedule of implementation for all planned controls, and must document calculations or other evidence showing that the allocations will be met. Revised BMP plans must be submitted to the Department for review.

e. If a TMDL contains requirements for control of pollutants from the facility's discharges, then the BMP plan must include BMPs specifically targeted to achieve the allocations prescribed by the TMDL. A monitoring plan to assess the effectiveness of the BMPs in achieving the allocations must also be included in the BMP plan. Implementation of the monitoring plan in accordance with Part IV.C.2 will determine whether the controls are adequate to meet the TMDL allocations. If the facility cannot comply with the requirements of the TMDL, then the facility must apply for and obtain permit coverage under an individual permit.

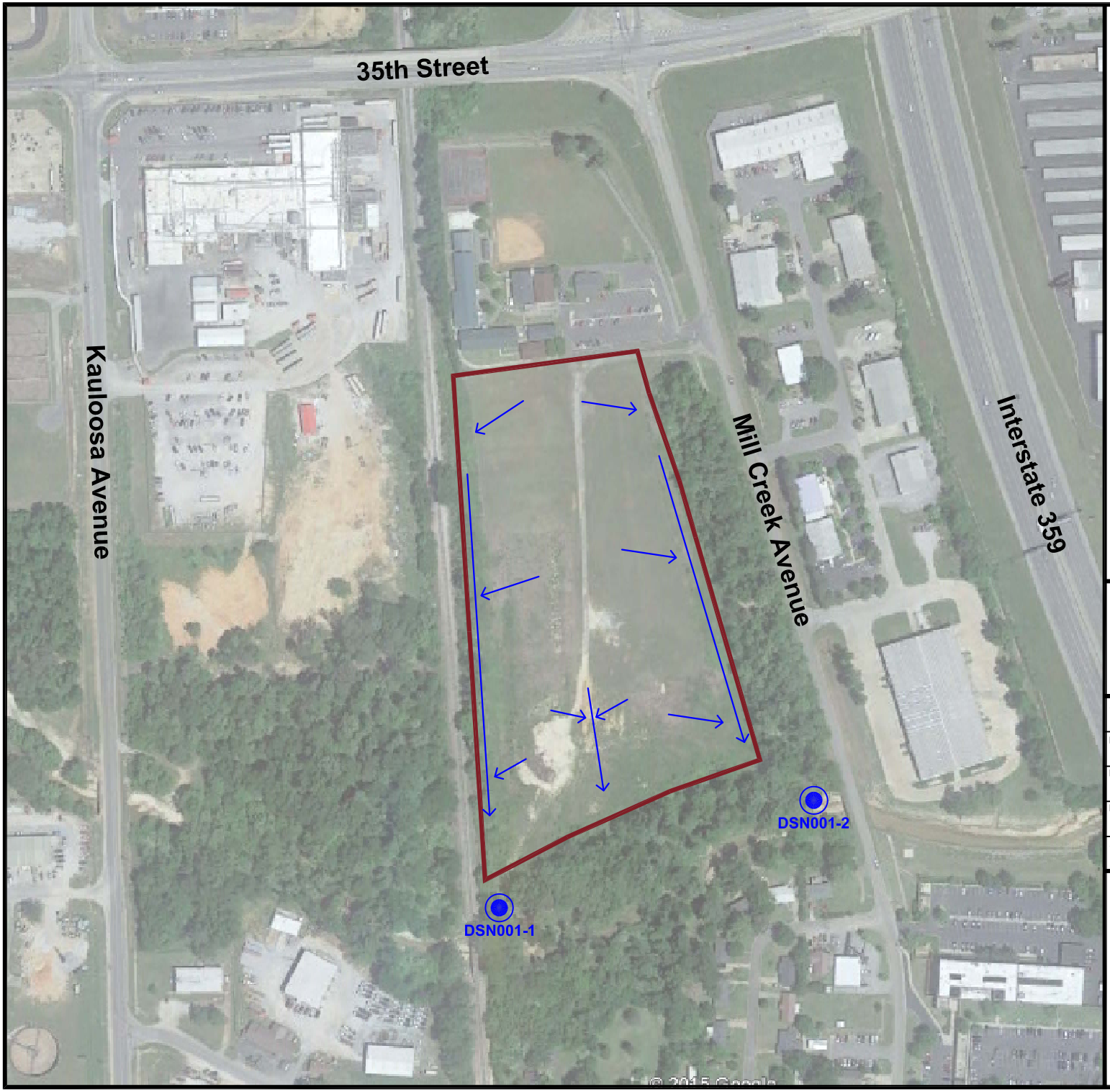
f. If the evaluation shows that additional or modified controls are necessary, the facility must describe the type and schedule for the control additions/revisions in the BMP plan. The facility must also continue Paragraphs IV.C.2.d.-f. until two continuous monitoring cycles, as defined in the monitoring plan in accordance with Part IV.C.2., show that the TMDL allocations are being met or that water quality (WQ) standards are being met.

3. Requirements for New or Revised BMP Plans

New or revised BMP plans developed in accordance with Parts IV.C.1 and IV.C.2 above must be submitted to the Department for review by April 30th of the year following EPA approval of the 303(d) list or EPA establishment/approval of applicable TMDL or within 6 months of such approval of the 303(d) list or applicable TMDL or establishment of TMDL by EPA (whichever is longer).

Attachment C.

Figure 2. Site Layout – NPDES General Permit ALG160005



LEGEND

N

Approximate Site Boundary

Stormwater Drainage Direction

Outfall Location

0′ 300′

TTL
3516 Greensboro Avenue ■ Tuscaloosa, Alabama 35401
205.345.0816 ■ Fax 205.345.0992

APPROXIMATE SCALE:	TTL PROJ. NO.:
1" = 300'	0600040

DRAWING PATH: P:\Archived Projects\2000\0600\040-phifer II\Figures\Phifer Fig 2 Site.dwg

DATE CREATED:	DATE REVISED:	REVISION NUMBER:
09/25/2012	08/18/2015	n/a

DRAWN BY:	CHECKED BY:
mjc	AGW

AERIAL SOURCE: Google Earth, May 2014

Figure 2. Site Layout

Stormwater Pollution Prevention Plan
and Best Management Practices Plan
Phifer Incorporated
Industrial Landfill Facility
3700 Mill Creek Avenue
Tuscaloosa, Tuscaloosa County, Alabama

HYDROGEOLOGIC INVESTIGATION

at

Phifer Wire Landfill

for

PHIFER WIRE PRODUCTS, INC.
TUSCALOOSA, ALABAMA

April 4, 1990

TTL, INC. PRACTICING IN THE GEOSCIENCES

3516 Greensboro Avenue ■ P.O. Drawer 1128 ■ Tuscaloosa, AL 35403 ■ Phone 205-345-0816 ■ Fax 205-345-0992

INTRODUCTION

TTL has completed a hydrogeologic evaluation of the solid-waste landfill operated by Phifer Wire Products of Tuscaloosa, Alabama. The investigation is in response to a July 16, 1989 letter wherein ADEM requested additional hydrogeologic information and plans for monitoring groundwater at the landfill. The ADEM request was based on a hydrogeologic review of a preliminary soil and hydrogeologic assessment that was prepared by Law Environmental, Inc. and submitted to ADEM in January, 1989.

LOCATION

The Phifer Wire Landfill is located between Kauloosa and Mill Creek Avenues in Tuscaloosa, Alabama. The landfill is in the SW¼ of Section 34, T21S, R10W of the Tuscaloosa 7 1/2 Minute Quadrangle Map (See Figure 1).

PHYSICAL FEATURES

The landfill is oriented in a north/south direction with fill advancement towards the south. The northern boundary of the landfill is adjacent to Green Acres, a recreational facility operated by Phifer Wire. Midsouth Corporation's railroad is immediately adjacent to the western boundary of the landfill. Cribbs Mill Creek, which is the southernmost boundary of the Phifer Wire property, also bounds the landfill. On the east, Mill Creek Avenue bounds the landfill. A 100-foot wide buffer zone is maintained between the fill boundaries of the landfill and the railroad, Mill Creek and Mill Creek Avenue.

The landfill lies within the floodplain of Mill Creek. The land surface across the site, before the landfill was developed, was relatively flat with an average elevation of about 150 feet, MSL. Surface water at the site drains to the south via ditches immediately outside the east and west boundaries of the landfill.

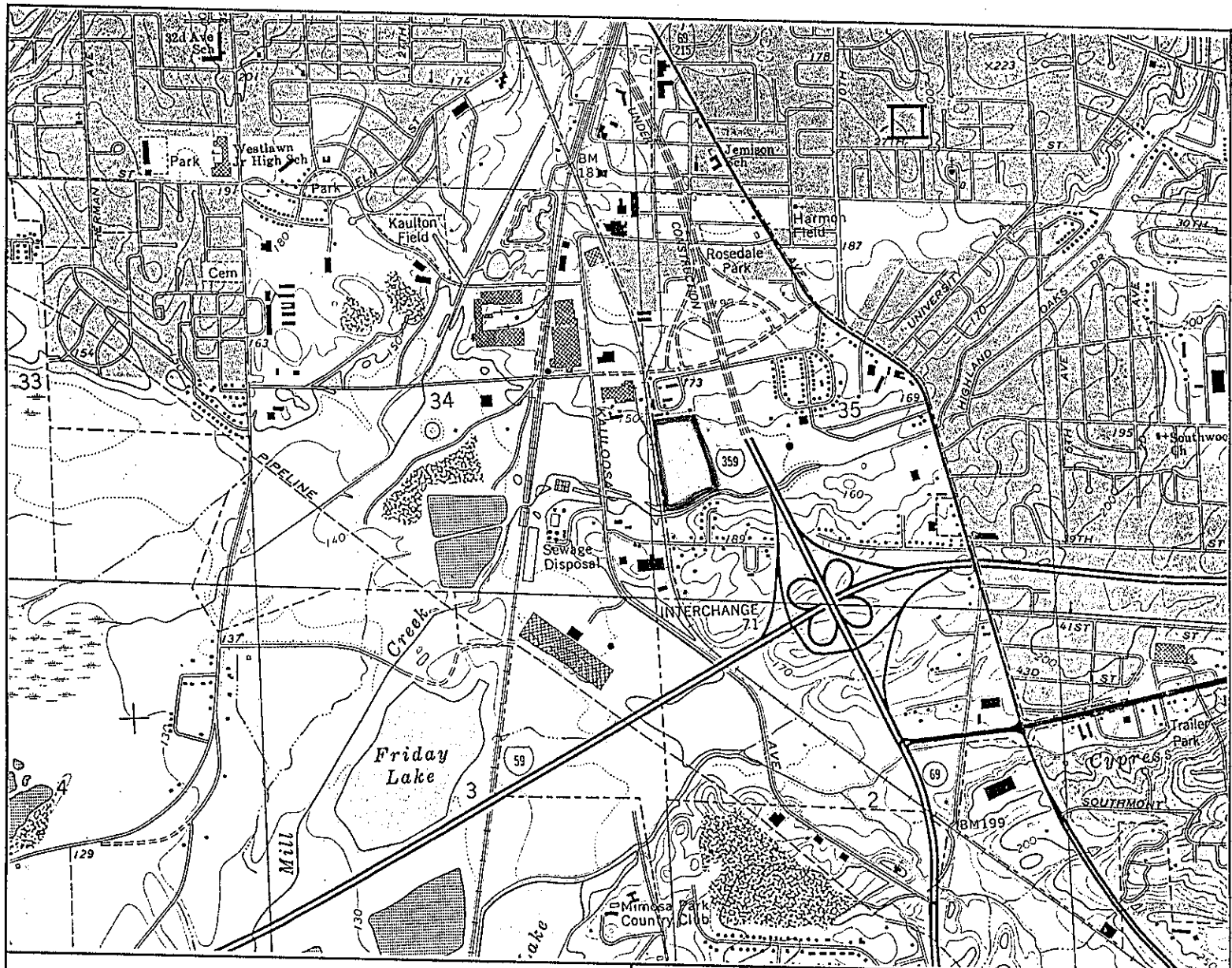


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Figure 1: Topographic Area Map
Phifer Wire Landfill
Phifer Wire Products
Tuscaloosa, Alabama
April, 1990

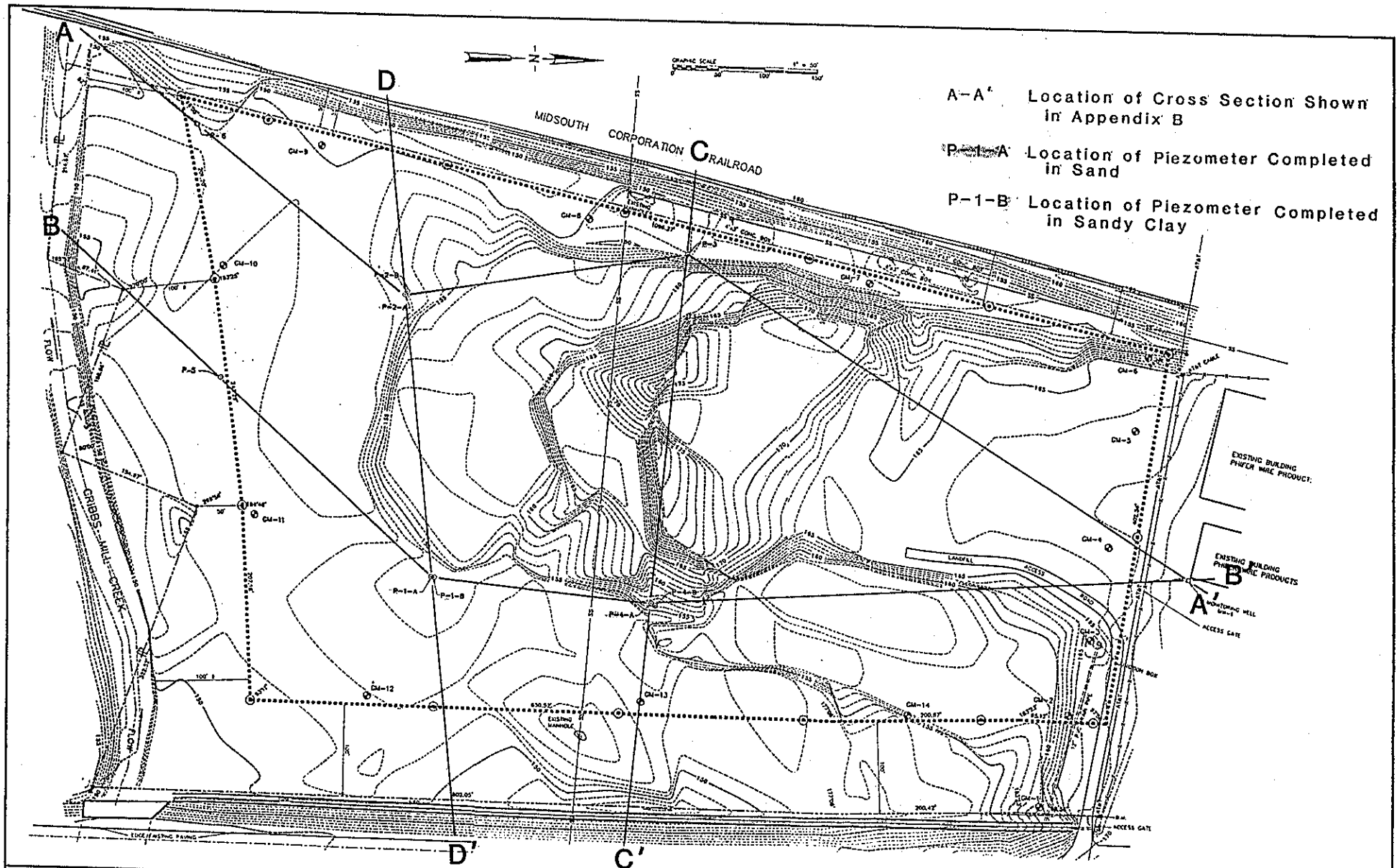
Wastes have previously been disposed by spreading them onto the existing land surface and then covering the wastes with a layer of soil. The wastes were not compacted prior to covering with a layer of soil. Trenching is not used for disposal of solid wastes at the landfill. Typical profiles of the landfill are provided in an Appendix (B) of this report.

Natural, virgin fill is currently transported to the landfill and used to raise the land surface so that it is at least five feet above the seasonal high water table. The solid wastes are then placed on the fill and consequently covered with a layer of soil.

BORING AND SAMPLING PROCEDURES

Six borings were installed during this investigation. Locations of these borings are shown on Figure 2 and on the water-table contour map that is contained in the pocket to this report. During boring, samples of soil were collected using a 2 1/2 foot split-spoon sampler passed through 3 1/4 inch ID Hollow Stem augers. Borings were terminated in the upper water table but at depths sufficient for placement of 5 feet of screen, below the water table, for the installation of temporary piezometers. No borings were drilled into the waste fill material as a precautionary measure.

Four soil borings (P-1, P-2, P-3 and P-4) were drilled on Jan. 10, 1990 and Jan. 11, 1990 at locations surrounding three sides of the present disposal area. Each boring was subsequently completed as a temporary piezometer. To accommodate drilling equipment, soil pads were constructed by pushing soils out from the waste fill area. The soils used to construct these pads had been hauled to the site for use as cover material and did not contain any waste. The soils used to construct the pads are indicated in the boring logs as the upper red silty fine to coarse sand with gravel and overly natural soils.



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PRACTICING IN THE GEOSCIENCES

Figure 2: Location of Profiles and Temporary Piezometers
Phifer Wire Landfill
Phifer Wire Products
Tuscaloosa, Alabama
April, 1990

At boring locations P-1, P-2 and P-4, nested piezometers were completed with screened intervals at varying depths to determine whether there is hydraulic interconnection between the upper clayey sand (SC) and lower fine to coarse sands with gravel (SM) that are separated by a fine sandy clay. Piezometers P-1A, P-2A and P-4A were screened within the fine to coarse sands (SM). Piezometers P-1B, P-2B and P-4B were screened within the clayey fine sand and fine sandy clay.

Two additional borings (P-5 and P-6) were drilled on March 3, 1990, between the landfill and Cribbs Mill Creek. These borings were also converted to piezometers for use in determining the direction of groundwater movement.

An up-gradient boring and piezometer, north of the site, was not drilled during this investigation. This boring, now monitoring well MW-1, which was installed by Law Environmental, Inc. during a previous investigation, was used to obtain groundwater measurements upgradient of the landfill.

CONSTRUCTION OF PIEZOMETERS

Piezometers were constructed at all six of the boring locations. Nested piezometers were constructed at the locations of borings P-1, P-2 and P-4.

Each piezometer was constructed of 2 inch flush joint PVC with .010 inch slotted screen. Locking caps were used to secure the piezometers from unauthorized entry. Five feet of screen was placed within the lower yellowish-orange, silty, fine to coarse sand with gravel (SM) encountered in each boring. The sand was allowed to collapse around the screen in each boring. Additional sand was added until the sand pack extended to about 2 feet above the top of the screen. Approximately 2 feet of bentonite pellets were placed above the sand pack. The annulus was then back-filled with soils to allow for removal of the piezometers at a later date when monitoring wells are installed. These piezometers are labeled with an "A" suffix on Figure 2 and on the plate in the pocket to this report.

The "B" piezometers, which are completed in the shallow sandy clay, were constructed similar to the "A" piezometers. Five feet of screen with sand pack and overlying bentonite seal were used in the construction of the shallower piezometers.

A summary of the construction of the piezometers is provided in Table 1.

GEOLOGY

Based upon the review of published information, Quaternary Alluvial Deposits, resulting from stream deposits of Mill Creek and the Black Warrior River, are exposed at the site. These deposits typically consist of very pale-orange to grayish-orange vari-colored fine to coarse quartz sand containing clay lenses and gravel in places. The alluvial deposits, which may be as great as 50 feet in thickness in some locations, overlie the Cretaceous Coker Formation.

The Coker Formation is typically a light-colored micaceous very fine to medium cross-bedded sand, varicolored micaceous clay with a few thin gravel beds containing quartz and chert pebbles. The Coker Formation, which is a major aquifer in this region, is generally in hydraulic connection with and receives recharge from alluvial deposits.

SITE HYDROGEOLOGY

Alluvial deposits were encountered during completion of borings at the site. At the original land surface (beneath the drilling pads), these deposits consisted of a dusky yellowish brown clayey silt with organics (OL). These deposits extended to a depth of approximately 1 foot below the original land surface. If borings P-1 through P-4, the "OL" deposits occurred at depths of about three to five feet below the tops of the pads constructed for placement of drilling equipment. A yellowish gray and grayish orange clayey fine sand (SC) and yellowish gray and grayish orange fine sandy clay (CL) immediately underlies the above surficial deposits. The clayey fine sand and fine sandy clay are similar in appearance but with differing sand/clay percentages. Below this sand and clay was a medium gray clayey

TABLE 1

DETAILS OF PIEZOMETER CONSTRUCTION
Phifer Wire Landfill

Piezometer Number	Elevation of Top of Casing (Feet MSL)	Elevation of Ground Surface (Feet MSL)	Bentonite Seal (Feet BLS)	Screened Interval (Feet BLS)
P-1A	159.7	157.3	9 - 11	13.0 - 18.0
P-1B	159.1	157.5	2 - 4	6.0 - 11.0
P-2A	157.6	155.7	9 - 11	13.0 - 18.0
P-2B	156.7	155.6	3 - 5	6.6 - 11.6
P-3	157.6	156.6	9 - 11	13.0 - 18.0
P-4A	159.1	156.7	9 - 11	12.7 - 17.7
P-4B	158.5	156.1	2 - 4	5.0 - 10.0
P-5	154.3	151.0	4 - 6	8.0 - 13.0
P-6	153.5	150.4	4 - 6	8.0 - 13.0

very fine sand (SC) with a thickness of one to two feet. A distinctive lower contact occurred with a dark yellowish orange silty fine to coarse sand with gravel (SM) at around 9 feet. With the exception of P-3, these lithologies were uniform in borings at the site. Due to the location of boring P-3 along the western drainage ditch, the upper clayey sand and sandy clay were not present; they had been removed by erosion or previous excavation.

During boring and sampling, soils were observed to be wet throughout the entire interval of penetration with a noticeable zone of saturation occurring in the more porous, lower, silty fine to coarse sand with gravel.

Due to the high water table in the floodplain of Cribbs Mill Creek and the seasonally high rainfall in the winter months of the year, water levels were within five feet of the ground surface at each piezometer location. Water-level elevations were about 147 feet MSL in piezometer P-6 (near Cribbs Mill Creek) and 152 feet at up-gradient monitoring well MW-1. The groundwater gradient, based on evaluation of surface topography, would normally have been assumed to be south and southwest towards Cribbs Mill Creek. Based on water-levels measured in the piezometers between January 12, 1990 to March 19,1990, (see Table 2), groundwater flows towards Cribbs Mill Creek. However, due to the high water table, the drainage ditches that parallel the east and west boundaries are sources of discharge of groundwater and influence movement of groundwater across the site. As shown by the contour map provided in the Appendix, groundwater was moving to the south, east and west on March 19, 1990.

Additional data are required to determine the depth to the water table during dry, summer months or during extended periods during which there is no rainfall. Information regarding seasonal variations of depths to groundwater will be obtained by implementation of the plan for monitoring that is proposed in a subsequent section of this report.

A test to determine hydraulic conductivity was reported by Law Environmental, Inc. in a previous investigation. The hydraulic conductivity was determined using a slug test method and was reported, by Law, to be 1.1 X10 -3 cm/sec at monitoring well MW-1.

TABLE 2

WATER-LEVEL MEASUREMENTS
Phifer Wire Landfill

Date of Measurement:		1/12/90		2/1/90		3/12/90		3/15/90		3/19/90	
Piezometer	MP Top of Casing	Depth of Water (Below MP)	Elevation of Water (MSL)	Depth of Water (Below MP)	Elevation of Water (MSL)	Depth of Water (Below MP)	Elevation of Water (MSL)	Depth of Water (Below MP)	Elevation of Water (MSL)	Depth of Water (Below MP)	Elevation of Water (MSL)
P-1A	159.7	7.59	152.11	9.30	150.40	9.56	150.14	9.61	150.09	9.09	150.61
P-1B	159.1	9.65	149.45	7.88	151.22	8.35	150.75	8.57	150.53	7.98	151.12
P-2A	157.6	8.53	149.07	8.09	149.51	8.36	149.24	8.45	149.15	7.89	149.71
P-2B	156.7	7.00	149.70	7.08	149.62	7.34	149.36	7.41	149.29	7.04	149.66
P-3	157.6	13.96	143.64	12.59	145.01	11.65	145.95	10.26	147.34	8.78	148.82
P-4A	159.1	8.88	150.22	8.54	150.56	8.87	150.23	8.78	150.32	8.46	150.64
P-4B	158.5	6.60	151.90	7.00	151.50	7.37	151.13	7.46	151.04	6.67	151.83
P-5	154.3							5.19	149.11	4.62	149.68
P-6	153.5							6.18	147.32	5.31	148.19
MW-1	169.7	18.22	151.48	16.9	152.80	17.26	152.44			16.79	152.91

At the nested piezometer locations, water-level measurements indicate similarity in fluctuations of water levels between the upper clayey sand and the lower fine to coarse sand with gravel that are separated by a sandy clay. Results were inconclusive regarding the extent of interconnection between the two units. Interpretation of lithologies penetrated during installation of borings at the site indicates that, in general, the units within the alluvial deposits are interconnected.

Profiles across the landfill site are shown in the profiles in the Appendix. The yellowish gray and grayish orange clayey sand and sandy clay (SC/CL) are shown as a unit and the medium gray clayey very fine sand and dark yellowish orange silty fine to coarse sand with gravel (SC/SM) are shown as a unit on the profiles. Contacts between these units have not been extended to monitoring well MW-1 due to the lack of lithologic information for the boring.

CONSTRUCTION OF MONITORING WELLS

Three monitoring wells should be installed at down-gradient locations outside the boundary of the landfills, but within the 100-foot buffer zone. The locations of these wells are indicated on the map provided in the Appendix. Two monitoring wells, MW-3 and MW-4, will be installed between the southern boundary of the landfill and Cribbs Mills Creek. The third monitoring well, MW-2, will be installed on the western boundary. The location of this third well was selected by evaluation of groundwater gradients on the contour map and by consideration of a probable gradient, based on topography, towards the south and southwest. Existing monitor well MW-1, located within the Green Acres recreational facility, is proposed as the up-gradient well at this time. The existing piezometers will be removed and the borings grouted at the time of installation of the monitoring wells.

Monitoring wells will be constructed as indicated in Figure 3. For proposed monitoring wells MW-3 and MW-4, ten feet of 4-inch, 0.010 slot, PVC well screen will be installed within the lower, silty fine to coarse sand with gravel so that the top of the screen terminates in the gray and grayish orange fine sandy clay that lies above the lower sand. The third monitoring well, MW-2, will be constructed similar to that of the other two wells. Because of the probable absence of the sandy clay at the proposed location of MW-2, actual construction will be determined by examination of samples from an exploratory borehole. Boreholes for the monitoring wells will be drilled and the monitoring wells constructed using continuous-flight hollow-stem augers. Soil samples will be collected and a detailed drilling log recorded. A 20/30 filter sand will be place around each well screen, by tremie, as the augers are pulled from the borehole. The sand pack will be brought to a height of 2 feet above the well screen and a 2 foot bentonite pellet plug will be placed on top of the sand. The annulus will be sealed from the top of the bentonite to the ground surface using a cement/bentonite grout. A lockable, steel stand-up protective casing will be installed over the PVC riser to prevent unauthorized entry. To assure collection of representative samples of groundwater, all new monitoring wells and the existing monitoring well, MW-1, will be developed prior to sampling. After installation, locations of the wells and elevations of measuring points will be surveyed.

SAMPLING AND ANALYSIS OF GROUNDWATER

Every six months, samples of water will be collected, for laboratory analysis, from the monitoring wells. Prior to sample collection, five well volumes of water will be removed, by bailer, from each monitoring well. Specific conductance and pH will be measured and recorded during purging of each well. Water samples will be collected and analyzed for lead. After allowing time for levels to stabilize, water levels will be measured in all monitoring wells.

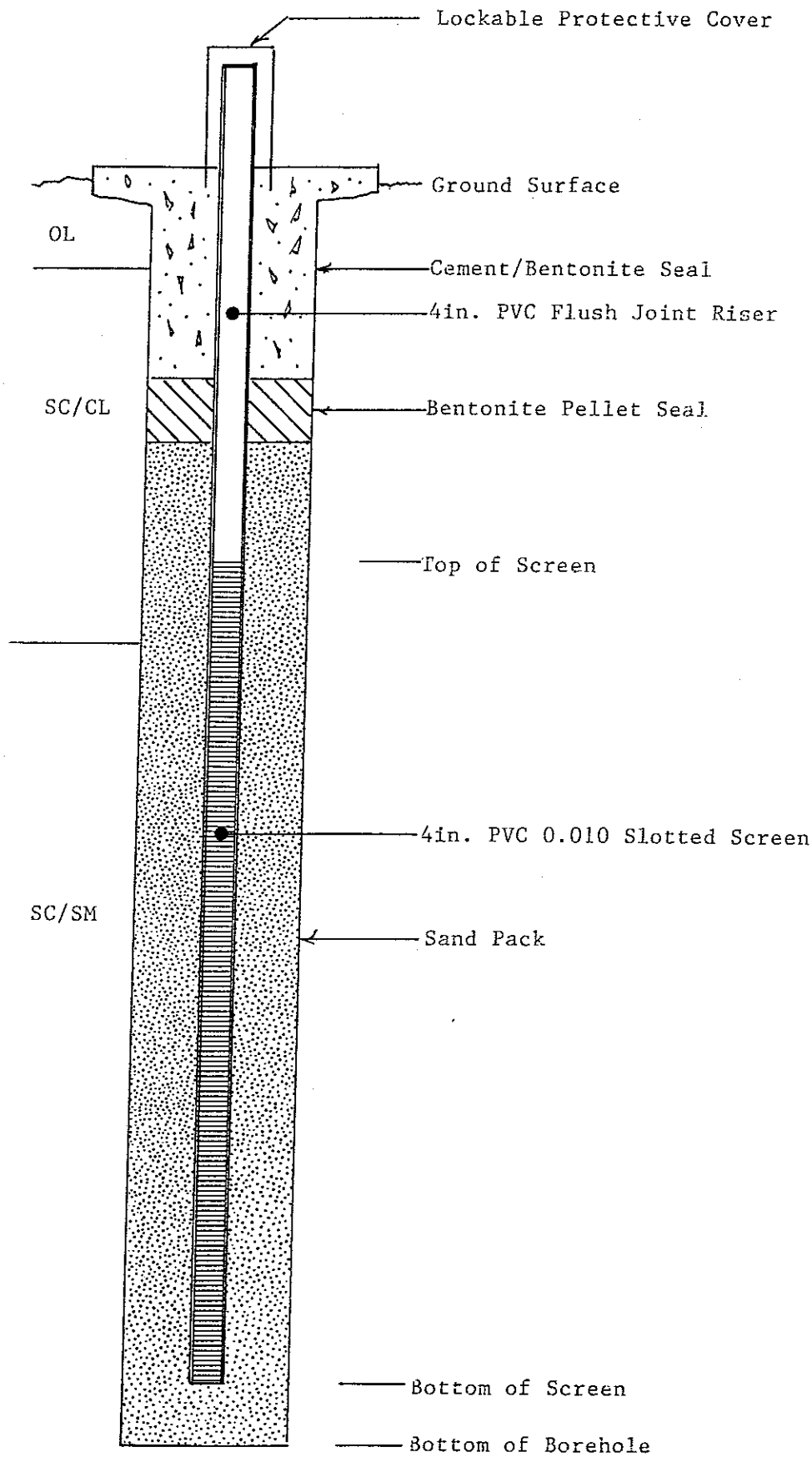

Figure 3: Proposed Monitoring Well Construction Diagram
Phifer Wire Landfill
Phifer Wire Products
Tuscaloosa, Alabama
April, 1990

TTL, Inc.
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Results of laboratory analyses of water samples, as well as field measurements of pH and specific conductance, will be provided to ADEM within one month of collection of water samples.

Results of this investigation will be provided to ADEM in six weeks of installation of the additional monitoring wells. The results will be provided in a report that will include logs and description of borings, well-construction diagrams, results of laboratory analyses of water samples, depths to and elevations of water levels in wells, and interpretation of directions of groundwater movement. The report will include a contour map of groundwater levels in the monitoring wells.

Subsequent to transmittal of the above report, results of analyses of water samples, (collected every six months) values determined by field measurement of pH and specific conductance, and depths to and elevations of water levels in monitoring wells will be provided to ADEM. Results will be transmitted within one month of collection of water samples. Results will be transmitted in a letter report, which will include interpretation of results of laboratory analyses of water samples and direction of movement of groundwater at the site.

APPENDICES

APPENDIX A

BORING LOGS

LEGEND

GW		Well graded gravels or gravel-sand mixtures, little or no fines.
GP		Poorly graded gravels or gravel-sand mixtures, little or no fines.
GM		Silty gravels, gravel-sand-silt mixtures.
GC		Clayey gravels, gravel-sand-clay
SW		Well graded sands or gravelly sands, little or no fines.
SP		Poorly graded sands or gravelly sands, little or no fines.
SM		Silty sands, sand-silt mixtures.
SC		Clayey sand, sand-clay mixtures.
CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
CH		Inorganic clays of high plasticity fat clays.
ML		Inorganic and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity

MH		Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
OL		Organic silts and sand and organic silt-clays or low plasticity.
OH		Organic clays of medium to high plasticity, organic silts.
PT		Peat and other highly organic soils.
		Quartzite
		Sandstone
		Siltstone
		Shale
		Schist
		Limestone
		Dolomite

DESCRIPTIVE TERMINOLOGY INCLUDED ON BORING LOGS

MOISTURE CONDITIONS

	Fine-Grained Soils	Coarse-Grained Soils
Dry	Seems dry, but contains some moisture	Contains no noticeable moisture
Moist	Moisture below the plastic limit	Contains a noticeable amount of moisture, but no appreciable free water
Very Moist	Moisture above the plastic, but below the liquid limit	
Wet	Moisture may approach the liquid limit	Contains free water, but voids are not waterfilled
Saturated	Moisture is frequently at or above the liquid limit	Soils voids are waterfilled or or nearly so

STANDARD PENETRATION RESISTANCE (N)[1]

Sands (Cohesionless Soils)		Silts and Clays (Cohesive Soils)	
# of Blows, N	Relative Density	# of Blows, N	Relative Consistency
0 - 4	Very Loose	0 - 1	Very Soft
5 - 10	Loose	2 - 4	Soft
11 - 30	Firm (Medium)	5 - 8	Firm (Medium)
31 - 50	Dense	9 - 15	Stiff
Over 50	Very Dense	16 - 30	Very Stiff
		31 - 50	Hard
		Over 50	Very Hard

[1]Measured with 2 inch OD, 1 3/8 inch ID sampler driven 1 foot by 140 lb. hammer falling 30 inches. See Standard Methods for Penetration Test and Split Barrell Sampling of Soils ASTM D 1586.

BORING LOG-S PHIFER WIRE 96-010 SHEET 1 OF 1 SHEETS

1. PROJECT: LANDFILL PIEZOMETERS	10. SIZE AND TYPE OF BIT: 3¼"ID HOLLOW STEM w/ 2½SPS
2. LOCATION (Coordinates or Station): SEE BORING LOCATION SCHEMATIC	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
3. DRILLING AGENCY: TTL, INC.	12. MANUFACTURER'S DESIGNATION OF DRILL: CME-55
4. HOLE NO. (As shown on drawing title and file number): P-1	13. TOTAL NO OF OVERBURDEN SAMPLES TAKEN: DISTURBED / UNDISTURBED
5. NAME OF DRILLER: CURTIS LEE AND CREW	14. TOTAL NUMBER CORE BOXES
6. DIRECTION OF HOLE: ☐ VERTICAL ☐ INCLINED ____ DEGREE FROM VERTICAL	15. ELEVATION GROUND WATER: 150.6
7. THICKNESS OF OVERBURDEN	16. DATE HOLE: STARTED 1/10/90 / COMPLETED 1/10/90
8. DEPTH DRILLED INTO ROCK	17. ELEVATION TOP OF HOLE: 157.3
9. TOTAL DEPTH OF HOLE: 19 FEET	18. TOTAL CORE RECOVERY FOR BORING: %
	19. SIGNATURE OF INSPECTOR: DEWEY TRAPP

W/C %	DEPTH	SYM	CLASSIFICATION OF MATERIALS (DESCRIPTION)	FIELD HARD-NESS	% CORE REC.	BOX OR SMPL NO.	REMARKS
			MODERATE REDDISH BROWN CLAYEY SAND WITH GRAVEL (SC) (FILL FOR PAD)				
	3.0		DUSKY YELLOWISH BROWN CLAYEY SILT WITH ORGANICS (MOIST) (OL)				
	6.0		YELLOWISH GRAY AND GRAYISH ORANGE CLAYEY VERY FINE SAND (SC)				
	9.0		YELLOWISH GRAY AND GRAYISH ORANGE MOTTLED FINE SANDY CLAY (CL)				
	12.0		MEDIUM GRAY CLAYEY VERY FINE SAND (SC)				
	15.0		DARK YELLOWISH ORANGE SILTY FINE TO COARSE SAND WITH GRAVEL (SM)				
	18.0		BORING TERMINATED AT 19 FEET				
	21.0						
	24.0						
	27.0						

HOLE NO.

BORING LOG-S PHIFER WIRE 96-010 SHEET 1 OF 1 SHEETS

1. PROJECT: LANDFILL PIEZOMETERS	10. SIZE AND TYPE OF BIT: 3¼"ID HOLLOW STEM w/2½'SPS
2. LOCATION (Coordinates or Station): SEE BORING LOCATION SCHEMATIC	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
3. DRILLING AGENCY: TTL, INC.	12. MANUFACTURER'S DESIGNATION OF DRILL: CME-55
4. HOLE NO. (As shown on drawing title and file number): P-2	13. TOTAL NO OF OVERBURDEN SAMPLES TAKEN: DISTURBED / UNDISTURBED
5. NAME OF DRILLER: CURTIS LEE AND CREW	14. TOTAL NUMBER CORE BOXES
6. DIRECTION OF HOLE: ☐ VERTICAL ☐ INCLINED ____ DEGREE FROM VERTICAL	15. ELEVATION GROUND WATER: 149.7
7. THICKNESS OF OVERBURDEN	16. DATE HOLE: STARTED 1/10/90 / COMPLETED 1/10/90
8. DEPTH DRILLED INTO ROCK	17. ELEVATION TOP OF HOLE: 155.7
9. TOTAL DEPTH OF HOLE: 19 FEET	18. TOTAL CORE RECOVERY FOR BORING: %
	19. SIGNATURE OF INSPECTOR: DEWEY TRAPP

W/C %	DEPTH	SYM	CLASSIFICATION OF MATERIALS (DESCRIPTION)	FIELD HARD-NESS	% CORE REC.	BOX OR SMPL NO.	REMARKS
			MODERATE REDDISH BROWN CLAYEY SAND WITH GRAVEL (SC) (FILL FOR PAD)				
	3.0						
			DUSKY BROWN CLAYEY SILT WITH ORGANICS (OL)				
	6.0		YELLOWISH GRAY AND GRAYISH ORANGE CLAYEY VERY FINE SAND (SC)				
	9.0		YELLOWISH GRAY AND GRAYISH ORANGE MOTTLED FINE SANDY CLAY (CL)				
	12.0		MEDIUM GRAY CLAYEY FINE TO MEDIUM SAND (SC)				
			DARK YELLOWISH ORANGE SILTY FINE TO COARSE SAND WITH GRAVEL (SM)				
	15.0						
	18.0		BORING TERMINATED AT 19 FEET				
	21.0						
	24.0						
	27.0						

HOLE NO.

BORING LOG-S PHIFER WIRE 96-010 SHEET 1 OF 1 SHEETS

1. PROJECT: LANDFILL PIEZOMETERS	10. SIZE AND TYPE OF BIT: 3¼" ID HOLLOW STEM w/2½' SPS
2. LOCATION (Coordinates or Station): SEE BORING LOCATION SCHMETIC	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
3. DRILLING AGENCY: TTL, INC.	12. MANUFACTURER'S DESIGNATION OF DRILL: CME-55
4. HOLE NO. (As shown on drawing title and file number): P-3	13. TOTAL NO OF OVERBURDEN SAMPLES TAKEN: DISTURBED / UNDISTURBED
5. NAME OF DRILLER: CURTIS LEE AND CREW	14. TOTAL NUMBER CORE BOXES: 148.8
6. DIRECTION OF HOLE: ☐ VERTICAL ☐ INCLINED ____ DEGREE FROM VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF OVERBURDEN	16. DATE HOLE: STARTED 1/10/90 / COMPLETED 1/10/90
8. DEPTH DRILLED INTO ROCK	17. ELEVATION TOP OF HOLE: 156.6
9. TOTAL DEPTH OF HOLE: 19 FEET	18. TOTAL CORE RECOVERY FOR BORING: %
	19. SIGNATURE OF INSPECTOR: DEWEY TRAPP

W/C %	DEPTH	SYM	CLASSIFICATION OF MATERIALS (DESCRIPTION)	FIELD HARD-NESS	% CORE REC.	BOX OR SMPL NO.	REMARKS
	0		MODERATE REDDISH BROWN CLAYEY SAND WITH GRAVEL (SC) (FILL FOR PAD)				
	3.0		DUSKY YELLOWISH BROWN CLAYEY SILT WITH ORGANICS (OL)				
	6.0		DARK GRAY CLAYEY FINE SAND (SATURATED) (SC)				
	9.0		LIGHT OLIVE GRAY SILTY FINE TO COARSE SAND (SM)				
	12.0		WITH GRAVEL				
	15.0						
	18.0		BORING TERMINATED AT 19 FEET				
	21.0						
	24.0						
	27.0						

HOLE NO.

BORING LOG-S PHIFER WIRE 96-010 SHEET 1 OF 1 SHEETS

1. PROJECT: LANDFILL PIEZOMETERS	10. SIZE AND TYPE OF BIT: 3¼"ID HOLLOW STEM w/2½'SPS
2. LOCATION (Coordinates or Station): SEE BORING LOCATION SCHEMATIC	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
3. DRILLING AGENCY: TTL, INC.	12. MANUFACTURER'S DESIGNATION OF DRILL: CME-55
4. HOLE NO. (As shown on drawing title and file number): P-4	13. TOTAL NO OF OVERBURDEN SAMPLES TAKEN — DISTURBED: — UNDISTURBED:
5. NAME OF DRILLER: CURTIS LEE AND CREW	14. TOTAL NUMBER CORE BOXES
6. DIRECTION OF HOLE: ☐ VERTICAL ☐ INCLINED _____ DEGREE FROM VERTICAL	15. ELEVATION GROUND WATER: 150.6
7. THICKNESS OF OVERBURDEN	16. DATE HOLE — STARTED: 1/11/90 — COMPLETED: 1/11/90
8. DEPTH DRILLED INTO ROCK	17. ELEVATION TOP OF HOLE: 156.7
9. TOTAL DEPTH OF HOLE: 19 FEET	18. TOTAL CORE RECOVERY FOR BORING: %
	19. SIGNATURE OF INSPECTOR: DEWEY TRAPP

W/C %	DEPTH	SYM	CLASSIFICATION OF MATERIALS (DESCRIPTION)	FIELD HARD-NESS	% CORE REC.	BOX OR SMPL NO.	REMARKS
			MODERATE REDDISH BROWN CLAYEY SAND WITH GRAVEL (SC)				
			(FILL FOR PAD)				
	3.0		DUSKY YELLOWISH BROWN CLAYEY SILT WITH ORGANICS (OL)				
			DARK GRAY CLAYEY VERY FINE SAND (SC)				
	6.0		YELLOWISH GRAY AND GRAYISH ORANGE MOTTLED FINE SANDY CLAY (CL)				
	9.0						
			MEDIUM GRAY CLAYEY VERY FINE SAND (SC)				
			DARK YELLOWISH ORANGE SILTY FINE SAND (SM)				
	12.0		DARK YELLOWISH ORANGE SILTY FINE TO COARSE SAND WITH GRAVEL				
	15.0						
	18.0		BORING TERMINATED AT 19 FEET				
	21.0						
	24.0						
	27.0						

HOLE NO.

BORING LOG-S | PHIFER WIRE 96-010 | SHEET 1 OF 1 SHEETS

1. PROJECT: LANDFILL PIEZOMETERS	10. SIZE AND TYPE OF BIT: 3¼"ID HOLLOW STEM w/2½'SPS
2. LOCATION (Coordinates or Station): SEE BORING LOCATION SCHEMATIC	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
3. DRILLING AGENCY: TTL, INC.	12. MANUFACTURER'S DESIGNATION OF DRILL: CME-55
4. HOLE NO. (As shown on drawing title and file number): P-5	13. TOTAL NO OF OVERBURDEN SAMPLES TAKEN: DISTURBED / UNDISTURBED
5. NAME OF DRILLER: CURTIS LEE AND CREW	14. TOTAL NUMBER CORE BOXES
6. DIRECTION OF HOLE: ☐ VERTICAL ☐ INCLINED ____ DEGREE FROM VERTICAL	15. ELEVATION GROUND WATER
7. THICKNESS OF OVERBURDEN	16. DATE HOLE: STARTED 3/14/90 / COMPLETED 3/14/90
8. DEPTH DRILLED INTO ROCK	17. ELEVATION TOP OF HOLE
9. TOTAL DEPTH OF HOLE: 13 FEET	18. TOTAL CORE RECOVERY FOR BORING %
	19. SIGNATURE OF INSPECTOR: DEWEY TRAPP

W/C %	DEPTH	SYM	CLASSIFICATION OF MATERIALS (DESCRIPTION)	FIELD HARD-NESS	% CORE REC.	BOX OR SMPL NO.	REMARKS
			DUSKY YELLOWISH BROWN CLAYEY SILT WITH ORGANICS (OL)				
	3.0		YELLOWISH GRAY AND GRAYISH ORANGE FINE SANDY CLAY (CL)				
	6.0		LIGHT OLIVE GRAY CLAYEY FINE SAND (SC)				
	9.0		DARK YELLOWISH ORANGE SILTY FINE TO COARSE SAND (SM)				
			WITH GRAVEL				
	12.0		BORING TERMINATED AT 13 FEET				
	15.0						
	18.0						
	21.0						
	24.0						
	27.0						

HOLE NO.

BORING LOG-S PHIFER WIRE 96-010 SHEET 1 OF 1 SHEETS

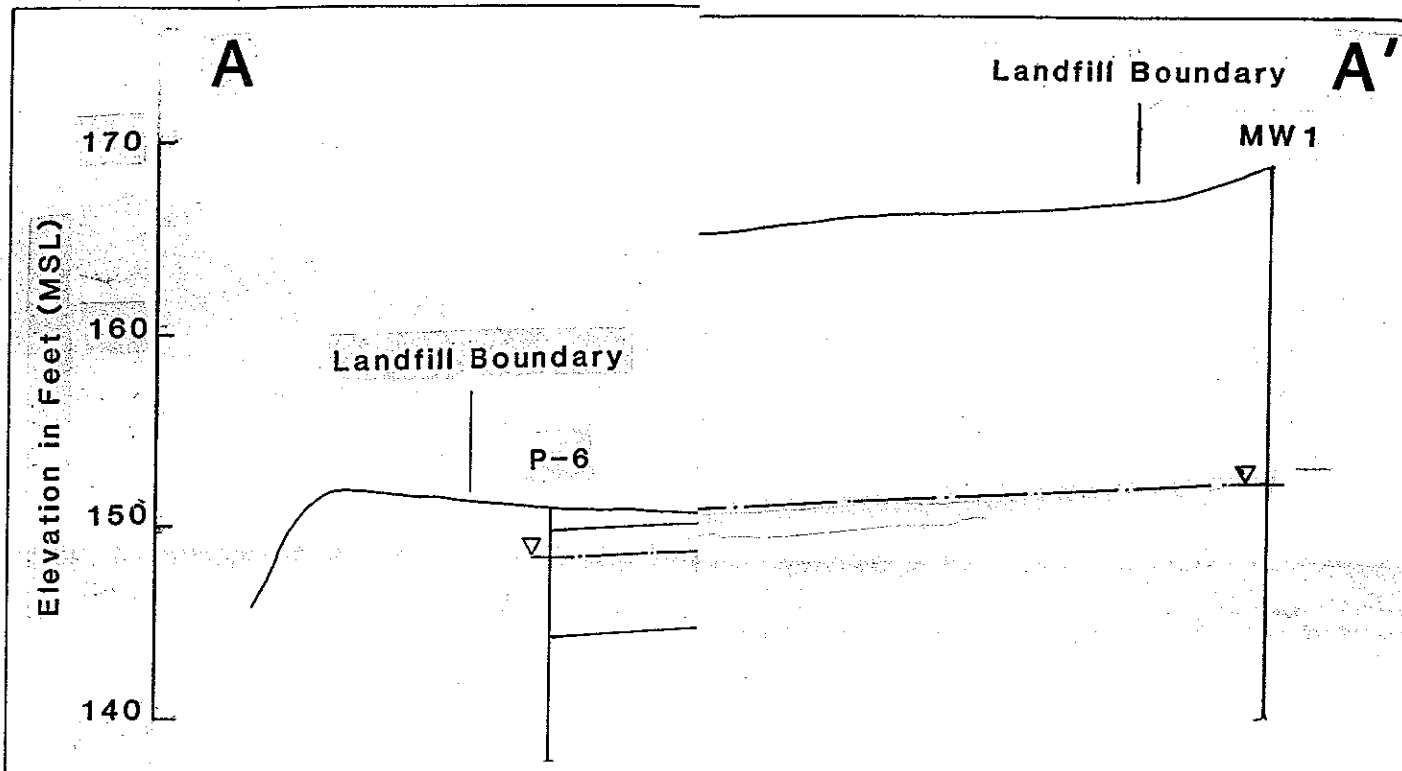
1. PROJECT: LANDFILL PIEZOMETERS	10. SIZE AND TYPE OF BIT: 3¼"ID HOLLOW STEM w/2½'SPS
2. LOCATION (Coordinates or Station): SEE BORING LOCATION SCHEMATIC	11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MSL
3. DRILLING AGENCY: TTL, INC.	12. MANUFACTURER'S DESIGNATION OF DRILL: CME-55
4. HOLE NO. (As shown on drawing title and file number): P-6	13. TOTAL NO OF OVERBURDEN SAMPLES TAKEN: DISTURBED / UNDISTURBED
5. NAME OF DRILLER: CURTIS LEE AND CREW	14. TOTAL NUMBER CORE BOXES
6. DIRECTION OF HOLE: ☐ VERTICAL ☐ INCLINED ____ DEGREE FROM VERTICAL	15. ELEVATION GROUND WATER
	16. DATE HOLE: STARTED 3/14/90 / COMPLETED 3/14/90
7. THICKNESS OF OVERBURDEN	17. ELEVATION TOP OF HOLE
8. DEPTH DRILLED INTO ROCK	18. TOTAL CORE RECOVERY FOR BORING %
9. TOTAL DEPTH OF HOLE: 13 FEET	19. SIGNATURE OF INSPECTOR: DEWEY TRAPP

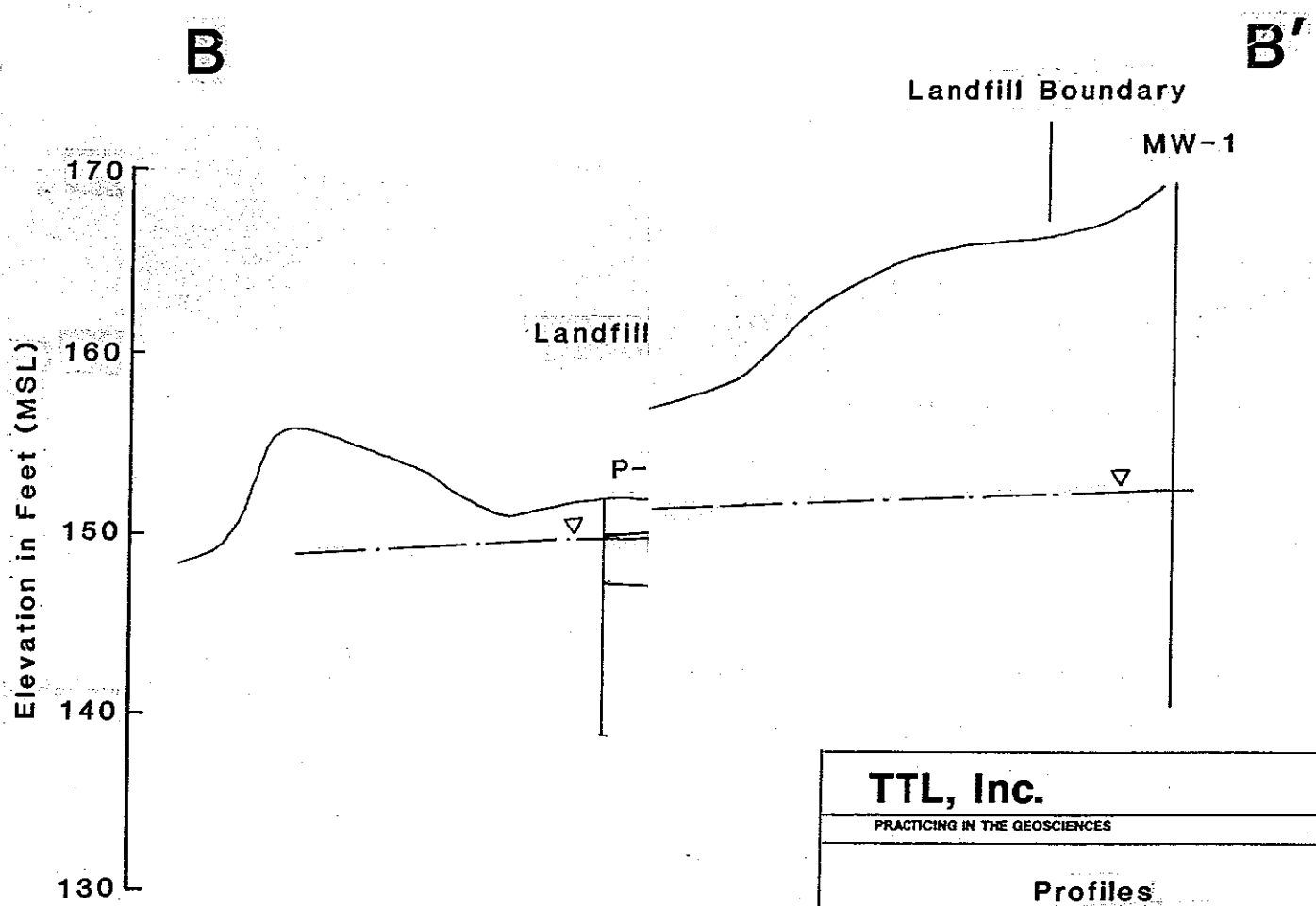
W/C %	DEPTH	SYM	CLASSIFICATION OF MATERIALS (DESCRIPTION)	FIELD HARD-NESS	% CORE REC.	BOX OR SMPL NO.	REMARKS
			DUSKY YELLOWISH VROWN CLAYEY SILT WITH ORGANICS (OL)				
			OLIVE GRAY CLAYEY VERY FINE SAND (SC)				
	3.0		YELLOWISH GRAY AND GRAYISH ORANGE FINE SANDY CLAY (CL)				
	6.0		LIGHT GRAY CLAYEY FINE SAND (SC)				
			DARK YELLOWISH ORANGE SILTY FINE TO COARSE SAND WITH GRAVEL (SM)				
	9.0						
	12.0		BORING TERMINATED AT 13 FEET				
	15.0						
	18.0						
	21.0						
	24.0						
	27.0						

HOLE NO.

APPENDIX B

PROFILES



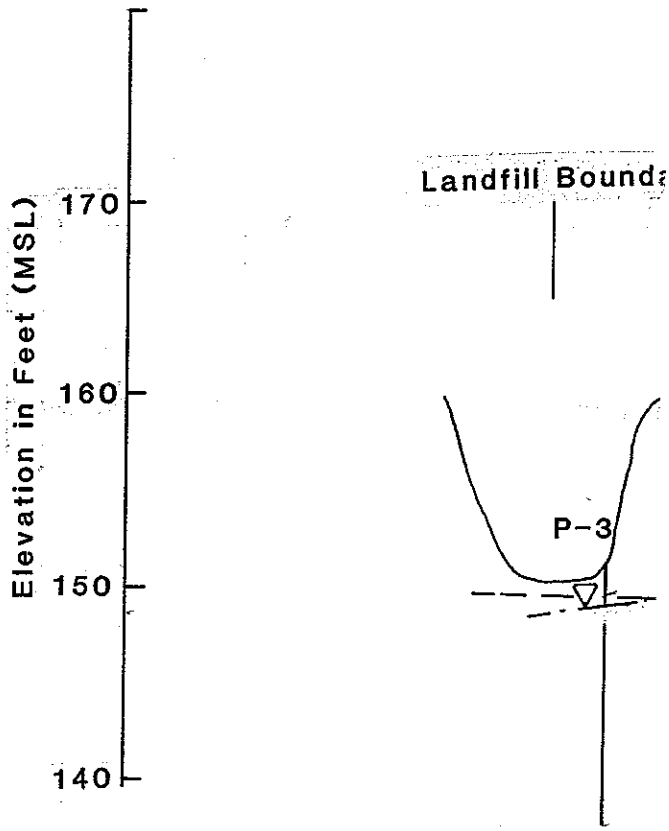


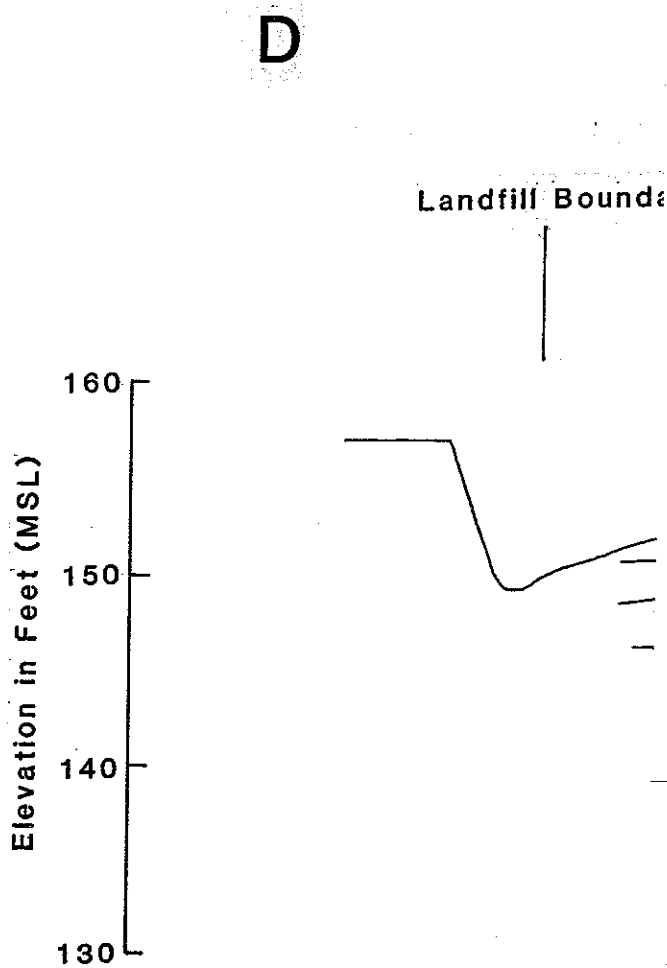
TTL, Inc.

PRACTICING IN THE GEOSCIENCES

Profiles
A-A' and B-B'

Phifer Wire Landfill
Phifer Wire Products
Tuscaloosa, Al.
April, 1990





Horz. Scale
0 100'

w Orange
vel

TTL, Inc.
PRACTICING IN THE GEOSCIENCES

Profiles
C–C' and D–D'

Phifer Wire Landfill
Phifer Wire Products
Tuscaloosa, Al.
April, 1990

"INDUSTRIAL"

N

GRAPHIC SCALE 1" = 50'
0' 50' 100' 150'

TOP CASING ELEVATION FOR TEMPORARY PIEZOMETER	
P-3	157.6
P-2-A	157.6
P-2-B	156.7
P-1-A	159.7
P-1-B	159.1
P-4-A	159.1
P-4-B	158.5
P-5	154.3
P-6	153.5

MIDSOUTH CORPORATION RAILROAD

"RESIDENTIAL"

GRIBBS MILL CREEK

FLOW

PROPOSED MONITORING WELL MW-3

PROPOSED MONITORING WELL MW-2

PROPOSED MONITORING WELL MW-4

EXISTING MANHOLE

EXISTING BUILDING PHIFER WIRE PRODUCTS

EXISTING MONITORING WELL MW-1

ACCESS GATE

LANDFILL ACCESS ROAD

JUNCTION BOX

B.M.

EXISTING BOX CULVERT

EDGE/EXISTING PAVING

EDGE EXISTING PAVING

MILL CREEK AVENUE

"COMMERCIAL"

LEGEND

- INDICATES EXISTING MANHOLE
- MW — INDICATES WATER MONITORING WELL
- INDICATES GAS MONITORING WELL
- INDICATES TEMPORARY PIEZOMETER
- INDICATES IRON PIPE FOUND
- INDICATES IRON PIPE PLACED
- INDICATES CONC. MONUMENT FOUND
- INDICATES PROPERTY LINE
- INDICATES EXISTING FENCE
- INDICATES UNDERGROUND UTILITY
- 160 — INDICATES EXISTING SURFACE CONTOUR LINE
- INDICATES RED & WHITE 4" PVC BOUNDARY MARKER
- SS — INDICATES EXISTING SANITARY SEWER
- INDICATES LAND FILL BOUNDARY
- 150 — INDICATES GROUND WATER CONTOUR LINE.
- 152.9 — INDICATES WATER ELEVATION AS OF 3/19/90

WATER TABLE CONTOUR MAP
WITH PROPOSED MONITORING WELLS

PHIFER WIRE PRODUCTS, INC.
SOLID WASTE LANDFILL SITE
TUSCALOOSA COUNTY ALABAMA

REVISION		
DATE	DESCRIPTION	BY

SCALE 1"=50' | FIELD BOOK: 1082 | DRAWN BY: L H L | DWG. No. 75-90
DATE MARCH 90 | JOB NO. 89-2680 | PAGE: 1-23 | FILE NAME: PIFRWTR | CHECKED BY: W D M

McGiffert & Associates Civil Engineers Tuscaloosa, Alabama

CLOSURE PLAN
PHIFER INCORPORATED LANDFILL
TUSCALOOSA COUNTY, ALABAMA

I. Final Cover System

A final cover system will be designed and installed to minimize infiltration and erosion. The cover system will be comprised of an erosion layer underlain by an infiltration layer as follows:

1. The infiltration layer will be comprised of a minimum of 18 inches of earthen material that has a permeability of less than or equal to the permeability of the natural subsoils present, or a permeability no greater than 1X10 cm/sec, whichever is less.

2. The erosion layer will consist of a minimum of 6 inches of earthen material that is capable of sustaining native plant growth.

A final contour map is attached which depicts final elevations of the landfill at closure.

II. Methods and Procedures to Install Cover System

1. The infiltration cover material will be placed and compacted to a minimum of 18 inches. Following compaction of the infiltration cover, a minimum 6-inch erosion cover will be placed.

2. The erosion cover will be graded in such a manner to prevent surface water from ponding over the disposal facility.

3. The final grade of the 2 foot soil cover must not exceed a maximum grade of 25 percent or minimum of 5 percent. Phifer Incorporated received state approval of the 2 percent slope as an exception to the 5 percent slope rule because post closure use of the site will be a ball field.

4. Slopes longer than 25 feet shall require horizontal terraces of sufficient width for equipment operation, for every 20 foot rise in elevation or utilize other erosion control measures.

5. Final grading shall be completed within 60 days after landfilling has reached the final approval elevations.

6. Within 30 days of completed final grading the soil cover shall be prepared for the establishment of cover to minimum erosion and maximize evapotrans-piration.

7. Preparation of this vegetative cover shall include:
   a. Placement of appropriate species of grass seed (fescue)
   b. Application of fertilizer and mulch, and
   c. Watering and maintenance necessary for the germination of grass.

III. Estimate of Largest Area Requiring a Final Cover

Phifer Landfill encompasses approximately 10 acres. This is the largest area that will require a final cover.

IV. Estimate of Maximum Inventory of Wastes On-site

Approximately 565,000 cubic yards of waste is estimated to ever be on-site over the active life of the landfill facility. This figure is based on a 35 foot maximum height times 10 acres.

V. Closure Schedule

Approximately 180 days is estimated to complete all closure activities necessary to satisfy the closure criteria in 40 CFR 258.60. The estimated timetable to be as follows:

1*	Notify ADEM that Notice of Intent to close is in operating record
30	Begin closure by applying infiltration layer
45	Erosion layer applied
60	Final grading completed
90	Vegetative cover planted
180**	Certification by P.E. of closure

Notes to timetable:

* Prior to beginning closure of the landfill unit, the owner will notify ADEM's Director that a Notice of Intent to close the landfill has been placed in the landfill operating record. The owner will begin closure activities no later than 30 days after the date on which the landfill unit receives the known final receipt of wastes. However, if the landfill unit has remaining capacity and there is reasonable likelihood that the landfill unit will receive additional wastes, closure procedures will begin no later than one year after the most recent receipt of wastes.

The owner may request an extension of the one-year deadline for beginning closure, if it is demonstrated that the landfill unit has the capacity to receive additional wastes and the owner will take steps necessary to prevent threats to human health and the environment from the unclosed landfill unit

VI. Notation on Deed

The owner will record a notation on the deed (and by some other legal instrument that is normally examined during a title search to the landfill facility property) within 90 days of closure and notify ADEM's Director that

the notation has been recorded and a copy placed in the operating record. The notation will in perpetuity notify potential buyers that:

1. The land has been used as a solid waste landfill;

2. Its post closure use must never be allowed to disturb the integrity of the final cover, liner(s), or any other component of the contaminant system, or the function of the monitoring systems unless ADEM determines that:

   a. The activities will not increase the potential threat to human health or the environment; or

   b. The activities are necessary to reduce a threat to human health or the environment;

3. The locations and dimensions of the disposal facility with respect to permanently surveyed benchmarks and sections corners will be on a plat prepared and sealed by a land surveyor;

4. Phifer Incorporated operated an industrial solid waste disposal facility with the beginning and closure dates of the disposal activity noted;

5. Certification by a registered P.E. that all closure requirements have been completed

VII. Closure Cost

Phifer Incorporated has prepared a detailed written estimate, in current dollars, of the cost of hiring a third party to close the largest area of the Landfill with a final cover as required under 40 CFR 258.60. Phifer Incorporated will notify ADEM's Director that the estimate has been placed in the operating record. The Phifer Incorporated Landfill's estimated closure cost is a follows:

Final Cover (18") placed and compacted:	$216,500.00
Topsoil (6") placed, graded and seeded:	$ 99,500.00
Total Final Cover Estimate:	$316,000.00

VIII. Post Closure Care

Post closure maintenance of the facility will include regular scheduled inspections by Phifer Incorporated unless all solid waste is removed and no unpermitted discharge to waters have occurred. The following shall be maintained:

1. Eroded areas shall be filled with suitable soil cover, compacted, graded and appropriate cover established as described in Section II.

2. Areas which provide for ponding of surface water due to settling shall be filled, graded and an appropriate cover established as described in Section II.

3. Landfilled areas with extensive surface cracks in soil cover shall be corrected as necessary, or as determined by ADEM, to prevent infiltration of surface water.

4. An appropriate cover shall be maintained on the facility at all times as described in Section II.

5. Any waste dumped at the disposal facility following closure will be removed to an approved disposal facility by the permittee, operating agency, or owner.

6. Monitoring devices and pollution control equipment such as groundwater monitoring wells, erosion, and surface water control structures, and leachate facilities shall be maintained. Monitoring requirements shall continue in effect throughout the active life and postclosure care period as determined by ADEM unless all solid waste is removed and no unpermitted discharges to waters have occurred.

7. Other deficiencies such as vector control which may be observed by ADEM or Phifer Incorporated personnel will be corrected.

8. Post closure will never be allowed to disturb the integrity of the final cover, liner(s), or any other component of the containment system, or the functioning of the monitoring system unless ADEM determines:

    a. Use will not increase the potential threat to human health or the environment; or

    b. Use is necessary to reduce a threat to human health or the environment.

9. If Phifer Incorporated, or any subsequent owner wishes to remove waste, waste residues, the liner if any, or any contaminated soils, approval from ADEM must be requested. The notation in Section VI may be removed and no unpermitted discharges to waters have occurred.

Barnes

EXCAVATING COMPANY, INC.
PO BOX 470
NORTHPORT, ALABAMA 35476
205-752-6822 AL. GC LICENSE #: 15128

TO: PHIFER, INC.
PO BOX 1700
TUSCALOOSA, AL 35403

SCOPE: GRADING / EROSION CONTROL

PROJECT: PHIFER LANDFILL CLOSURE

PROPOSAL

ITEM #	QUANTITY	UNIT	ITEM DESCRIPTION	UNIT PRICE	UNIT TOTAL
101	1	LS	TO PROVIDE EQUIPMENT, LABOR AND MATERIAL TO PLACE 18" OF CLAY AND COMPACT ON 10 ACRES	338800.00	$338,800.00
102	1	LS	TO PROVIDE EQUIPMENT, LABOR AND MATERIAL TO PLACE 6" OF TOPSOIL, GRADE AND SEED	141050.00	$141,050.00
			TOTAL:		***$479,850.00***

We propose to furnish materials and labor in complete accordance with the above specifications, for the sum of:

FOUR HUNDRED SEVENTY-NINE THOUSAND EIGHT HUNDRED FIFTY DOLLARS AND 00/100***

All material is guaranteed to be as specified. All work to be completed in a workmanlike manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents or delays beyond our control. Owner to carry fire, tornado and other necessary insurance. Our workers are fully covered by Workmen's Compensation Insurance.

Prepared by: Fletcher Barnes **Date:** 8/9/2022

Phifer Incorporated
4400 Reese Phifer Ave.
Tuscaloosa AL 35401
205-750-4835

DECEMBER 20, 2023

Hunter Baker
Environmental Engineer Specialist, Sr.
Solid Waste Branch
Land Division
P.O. Box 301463
Montgomery, AL 36130-1463
RE: Phifer Landfill Permit 63-08 renewal application

Dear Hunter,

It was a pleasure to see you again and show you around our small landfill. I believe in our permit renewal application we did not include petition to extend the existing variances granted by the department in the expiring permit.

Therefore, with this letter I am petitioning to extend the three variances which were granted previously. Those variances are as follows:

1. **A variance is granted for Rule 335-13-4-.23(1)(a)(1) relating to the weekly cover for the active face of the landfill. The permittee shall be required to cover the active face of the landfill at least monthly with a minimum of 6 inches of soil. The monthly cover should be applied on the last Friday of each month during normal working hours of the landfill.**
2. **A variance is granted from Rule 335-13-4-.12(8) concerning the 100 foot buffer zone for the West and North side of the landfill. However, the 100 buffer is still in effect for the South and East portion of the landfill.**
3. **A variance was granted from the Rule 334-13-4-.20(2)(f) and (g) stating that the landfill unit must begin closure activities of each landfill unit no later than 30 days after the date of which the landfill unit receives the known final receipt of wastes, and the landfill unit must complete closure activities of each unit no later than180 days following the last know receipt of waste. This variance allows the landfill to remain active without accepting waste until the expiration of the permit provided that the landfill unit has the capacity to receive additional waste and that the permittee takes all steps necessary to prevent threats to human health and the environment.**

Phifer Incorporated respectfully requests that these variances be extended to the renewed Landfill Permit 63-08.

Warm regards,

John Stumpff

SAFETY AND ENVIRONMENTAL ENGINEER
Phifer Incorporated