ADEQ

A R K A N S A S
Department of Environmental Quality

June 30, 2015

The Honorable Randy Carney
Mississippi County Judge
200 West Walnut Street, RM 204
Blytheville, AR 72315

Re: Issuance of Final Permit for Mississippi County Class 1 Landfill, Treatment of Leachate, and Land Application System
Permit Number: 0136-S1-R4; AFIN: 47-00124
Document ID Number: 67766 Cross Reference ID Number(s): 59852

Dear Judge Carney:

Enclosed is a permit authorizing the construction, operation, and maintenance of the Mississippi County Class 1 solid waste landfill facility and Construction and Operation of Leachate Treatment System with Land Application of Treated Leachate as described in your application submitted on April 29, 2011 and subsequent documentation as referenced in the permit. The permit number for the facility is 0136-S1-R4. The decision to issue the permit is based upon 1) the information contained in the permit application; 2) other materials submitted by the applicant; 3) written comments received during the designated 30-day public comment period.

The permit is granted subject to the terms and conditions specified in the permit. The initial amount of financial assurance required is $3,387,360.00 for the facility. The purpose of the financial assurance is to ensure an environmentally sound closure of the site upon conclusion of disposal operations and acceptable post closure care. Please review all terms and conditions of the permit to ensure compliance with all applicable requirements.

All persons submitting written comments during the thirty (30) day public comment period, and all other persons entitled to do so, may request an adjudicatory hearing and Commission review on whether the decision of the Director should be reversed or modified. Such a request shall be in the form and manner required by Regulation 8.603, including filing a written Request for Hearing with the APC&E Commission Secretary at 101 E. Capitol Ave., Suite 205, Little Rock, Arkansas 72201 within thirty (30) calendar days of the date of issuance of this final permit decision as provided in Reg. 8.211(B)(1). If you have any questions about filing the request, please call the Commission Secretary at 501-682-7890.

Thank you for your cooperation on this matter. If you have any questions, or if we may be of service, please feel free to contact the Solid Waste Management Division at (501) 682-0602.

Sincerely,

Benjamin T. Jones
Chief - Solid Waste Management Division

Enclosures: Permit
Permit Summary and Rationale

cc: Paul Crawford, FTN Associates, Ltd.
Heidi Love, Inspector Supervisor, SWMD
Tobin Baker, District Field Inspector, SWMD
Susan Speake, Programs Branch Manager, SWMD
Ellen Carpenter, Chief, Water Division
John Bailey, Permits Branch Manager, Water Division

PERMIT

FOR THE CONSTRUCTION AND OPERATION OF A SOLID WASTE DISPOSAL FACILITY THAT INCLUDES TREATMENT AND LAND APPLICATION OF TREATED LEACHATE

ISSUED BY

STATE OF ARKANSAS
DEPARTMENT OF ENVIRONMENTAL QUALITY
SOLID WASTE MANAGEMENT DIVISION
AND WATER DIVISION

Class 1 Landfill

Permit Number	0136-S1-R4
AFIN	47-00124
Effective Date	June 30, 2015
Permit Owner & Address	Mississippi County 200 West Walnut, Room 204 Blytheville AR 72315
Facility Site Name & Address	Mississippi County 1695 East County Road 506 Luxora, AR 72358
Location	Western ½ of the Southeast ¼ of the Southeast ¼ of Section 1, Township 13 North, Range 10 East, Mississippi County, Arkansas
Permitted Landfill Area Property Area Land Application Area	+/- 96.5 acres +/- 320 acres +/- 13.0 acres
Financial Assurance	$3,387,360.00
Design Engineer/Consultant	FTN Associates, Ltd. 3 Innwood Circle, Ste. 220 Little Rock, AR 72211

This permit authorizes the operation of the solid waste disposal facility as set forth in permit applications prepared by FTN Associates, Ltd. for Mississippi County, hereinafter called "owner" or "permittee," and received by the Arkansas Department of Environmental Quality Solid Waste Management Division on April 29, 2011. The application was completed through a series of documents furnished to the Solid Waste Division by the applicant as referenced within this document.

Additionally an application was prepared by FTN Associates, Ltd. for Mississippi County and submitted to ADEQ – Water Division for the construction and operation of Leachate Treatment System, which will allow the facility to land apply treated leachate from Mississippi County Class 1 Landfill only. The application and related documents can be found at the following web address: http://www.adeq.state.ar.us/home/pdssql/p_permits_online_npdes_additonal.asp?PmtNbr=5091-WR-2&Category=PermitInformation&Title=Permit%20Information

This permit is issued pursuant to the provisions of the Arkansas Solid Waste Management Act (Arkansas Code Annotated 8-6-201 et seq.) as amended; Regulation Number 22, Solid Waste Management Rules, as adopted by the Pollution Control and Ecology Commission, hereinafter called Regulation 22; Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et *seq.*); and all other applicable rules and regulations administered by the Arkansas Department of Environmental Quality, hereinafter called "Department," and the following terms and conditions:

DESCRIPTION OF THIS PERMIT ACTION

This modification includes updates to plans and drawings to include a lateral expansion of the Mississippi County Class 1 Landfill. The permit will allow for the 69.5 acre expansion of the landfill disposal area and continued disposal of all wastes eligible for a Class 1 landfill as defined in APC&EC Regulation 22 and in accordance with the expansion design, construction, and operational materials supplied with the application. The modification contains additional design upgrades, updates to existing areas, and updates to facility plans and drawings necessary for continued compliance with applicable regulations.

Additionally a permit application was submitted for construction and operation of a Leachate Treatment System, which will allow the facility to land apply treated leachate collected from Mississippi County 1 Landfill only. The leachate treatment ponds and 13.0 acres for land application are located adjacent to the proposed landfill. The provisions approving the construction and operation of the Leachate Treatment System are included in this Class 1 landfill permit.

On the effective date, this permit supersedes all prior solid waste permits issued by the Department for this permitted Class 1 Solid Waste Disposal Facility.

PART I: Landfill Conditions

1. This permit includes an approximately 96.5 acre landfill disposal site as indicated on the approved plans. The final grades and elevations shall not be exceeded at any time or in the anticipation of settlement and consolidation of the waste mass. This permit shall expire when the authorized fill elevations have been attained and the facility is closed out in accordance with the provisions of Regulation 22, whichever occurs first.

    a. The Solid Waste Management Division shall be notified in writing upon construction of each landfill disposal area and upon facility closure in order that it may be inspected.

    b. Changes to or deviations from the construction, layout, fill progression and operation of the facility, as indicated on the approved facility plans indicated below and on the approved permit application documentation, are not authorized unless approved in writing by the Department.

    c. The approved application document is filed under the Document Identification Number 66829 and 67242. The only exceptions are referenced in following conditions.

2. The initial total amount of financial assurance is $3,387,360.00. Of this amount $2,634,000.00 will be required for financial assurance of closure costs and $753,360.00 (which is 20% of the total projected post-closure of $3,766,800.00 as allowed by Regulation 22) will be required as financial assurance for the post-closure costs. This amount shall be subject to annual review and adjustments, and may also be adjusted at the discretion of the Department based upon the estimated cost for a third-party to close the largest area requiring final cover during the active life of the facility and the cost for a third-party to perform post closure care.

a. Instruments used for establishing financial assurance must be in one of the forms set forth in Regulation 22 or as otherwise approved by the Department.

b. Within thirty (30) days of the effective date of this permit the permittee shall have established the financial assurance required by this condition. Operations allowed under this permit shall not commence until all financial assurance is satisfactorily filed with the Department.

c. A portion or all of the financial assurance may be held by the Department beyond the time of cessation of disposal operations at the site to ensure satisfactory closure and post closure care in accordance with Regulation 22.

d. No more than 38.3 acres of active landfill disposal area shall be open in the new landfill expansion area. Open landfill acreage shall be reported each year in the facility Annual Engineering and Inspection Report.

3. This permit contains provisions for the disposal of all waste eligible for a Class 1 sanitary landfill waste including all "special materials" as outlined in Regulation 22.701-708. Special Materials as identified in Regulation 22 do not require written authorization from the Department, provided the materials not specifically identified by the Special Materials section must be characterized by the generator of the waste prior to acceptance for disposal in the landfill in accordance with the facility written hazardous waste exclusion program.

4. Each landfill waste cell shall be constructed in the sequence indicated in the approved plans and specifications. See Condition 14 for approved landfill plans.

5. The bottom liner system for any newly constructed landfill waste cell must consist of a minimum 60 mil HPDE flexible membrane liner and a minimum of twenty-four inches of compacted clay exhibiting a maximum hydraulic conductivity of 1×10^{-7} centimeters per second (cm/s) and in accordance with approved plans. See Condition 14 for approved landfill plans.

a. Proper construction of the bottom clay liner of each waste cell shall be observed and certified to the Solid Waste Management Division by a Registered Professional Engineer in a Construction Certification Report in accordance with the approved CQA Plan whenever a cell is prepared for use.

b. The Construction Certification Report shall include CQA/QC test results as indicated in the approved CQA Plan; drawings indicating the location, designation, and extent of area(s) actually constructed for use; and test locations.

c. The Certification Report shall be submitted to the Solid Waste Management Division at least fourteen (14) days prior to waste placement in that cell.

6. A survey control system shall be established and maintained at the landfill site that complies with Regulations 22.426.

7. The permittee shall implement the Hazardous/Unauthorized Waste Exclusion Plan presented in Solid Waste Management Division Document Identifier (DIN) 66829. In addition to the implementation of the approved Hazardous/Unauthorized Waste Exclusion Plan, the facility shall fully meet all requirements of Reg.22.412 and Regulation, Chapter 7 regarding the exclusion of all unauthorized waste streams.

8. The permittee shall implement the Landfill Gas Monitoring Plan presented in Solid Waste Management Division DIN 66829. In addition to the implementation of the approved Landfill Gas

Monitoring Plan, the facility shall fully meet the requirements of Reg.22.415 regarding the control of explosive gases. The facility shall monitor each of the gas monitoring probes detailed in the approved Landfill Gas Monitoring Plan and within all structures at the facility on a quarterly basis. Initially, gas monitoring probes GMP-1 through GMP-10 and GMP-12 shall be installed. Probes GMP-11 and GMP-13 shall be installed when Cell 17 is constructed. Probes GMP-14 through GMP-16 shall be installed when Cell 23 is constructed.

9. The permittee shall implement the requirements detailed in the Operating Plan and Narrative presented in Solid Waste Management Division DIN 66829. In addition to the implementation of the approved Operating Plan and Narrative, the facility shall fully meet the requirements of Regulation 22.

10. The permittee shall implement the Construction Quality Assurance Plan presented in Solid Waste Management Division Document Identifier 66829. In addition to the implementation of the approved Construction Quality Assurance Plan, the facility shall fully meet all requirements of Reg.22.428 and 22.429.

11. The permittee shall implement the Closure and Post Closure Plan presented in Solid Waste Management Division DIN 67242. In addition to the implementation of the approved Closure and Post Closure Care Plan, the facility shall fully meet all requirements of Reg.22.1301 and Reg.22.1302. The post closure maintenance period for this facility shall be a minimum of 30 (thirty) years starting on the date the Department accepts closure of the facility. The length of the post closure period may be decreased or increased by the Director in accordance with Regulation 22.1302(c)(4). Closure Certification Reports for final cover construction shall be submitted to the Department in accordance with Regulation 22.1301 and in accordance with the approved closure plan.

12. Leachate collection removal and leachate storage systems shall be monitored and operated such that free flowing conditions are maintained in the leachate collection system. Leachate which is disposed in publicly owned treatment works (POTW) must comply with 40 CFR Part 403 (U.S. EPA Pretreatment regulations). Leachate shall otherwise be managed in accordance with the Leachate Management Plan found in Solid Waste Management Division DIN 66829. Any statements in the leachate management plan that conflict with Regulation 22, permit conditions herein, or applicable laws and regulations shall not be considered authorized by the Department.

13. At all times the disposal facility shall be maintained in good condition and operations shall be conducted by licensed, qualified on-site operators holding the appropriate license as required by Regulation Number 27, Certification of Sanitary Landfill Operators. Copies of the approved operating narrative, approved permit plans/specifications, operator licenses, stormwater pollution prevention plan (SWPPP), NPDES permit(s) for the facility, and this disposal permit shall be maintained at the site for reference.

14. The approved permit plans for the Class 1 Landfill are as follows:

Sheet 1 of 18 - General Information	66829
Sheet 2 of 18 – Site Map	66829
Sheet 3 of 18 - Survey Control Plan	66829
Sheet 4 of 18 - Excavation Plan	66829
Sheet 5 of 18 - Clay Liner Plan	66829
Sheet 6 of 18 – Drainage/Protective Cover Layer Plan	66829
Sheet 7 of 18 - Development Plan Cells 15 - 21	66829
Sheet 8 of 18 - Development Plan Cells 22 - 26	66829
Sheet 9 of 18 – Phase 1 Final Cover Plan	66829

Sheet 10 of 18 – Phase 2 Final Cover Plan	66829
Sheet 11 of 18 - Cross Section A-A'	66829
Sheet 12 of 18 - Cross Section B-B'	66829
Sheet 13 of 18 - Cross Section C-C'	66829
Sheet 14 of 18 - Liner and Final Cover Details	66829
Sheet 15 of 18 - Leachate Collection Details	66829
Sheet 16 of 18 - Stormwater Control Details	66829
Sheet 17 of 18 - Erosion Control Details	66829
Sheet 18 of 18 - Miscellaneous Details	66829

15. Disposal of bulk liquid waste in the landfill is prohibited. "Liquid waste" is waste which contains "free liquids" as defined by Methods 9095 (Paint Filter Test) as described in EPA Publication No. SW-846.

16. Measures to control and prevent storm water run-on from running through or into the active disposal area shall be constructed and maintained. Grading, dikes, diversion ditches, silt fencing, silt, traps, and other best management practices (BMP) for storm water control shall be provided as necessary to control/prevent off-site sediment accumulation from landfill related operations.

17. The permittee is required to maintain all appropriate erosion and sediment control devices and procedures in order to ensure that loss of soil at borrow sites and soil stockpiles and other potential erosion areas at the facility are mitigated to the extent possible.

18. The facility shall provide litter control fences to help control blowing litter, and the facility shall comply with 22.411(g).

19. The permittee must cover disposed waste with at least six inches of soil at the end of each operating day, or at more frequent intervals if necessary, to control disease vectors, fires, odors, blowing litter, and scavenging. No portion of the waste is to be left exposed at the end of the operating day. Alternative materials for daily cover, such as synthetic materials, shall only be used when specifically authorized in writing by the Department.

20. The final grades and elevations shown on the plans shall not be exceeded at any time or in anticipation of settlement and consolidation of the waste mass.

    a. Timely initiation and completion of closure of landfill cells or units shall be made in accordance with Regulation 22.1301(f) and (g).

    b. Proper construction of the final cover system shall be observed and certified in writing to the Solid Waste Management Division by a Registered Professional Engineer in a Construction Certification Report in accordance with the approved CQA Plan whenever a cell, area or phase of the landfill is closed-out.

    c. The Certification Report shall include CQA/QC test results as indicated in the approved CQA Plan; drawings indicating the location, designation and extent of closed area(s); and test locations.

    d. Before commencement of construction of the GCL final cover option, the permittee shall submit for Department review and approval an alternative final cover demonstration to address requirements of Regulation 22.1301(b) in consideration of the specific available materials selected for the planned closure event.

21. This permit authorizes one (1) active disposal area at the facility per Section 22.411 (c) of Regulation 22. Multiple working faces shall not be utilized at the facility unless the permittee can provide adequate justification for more than one working face and specific authorization for such is granted in writing by the Department. The landfill working face shall be confined to the smallest practicable area.

22. The permittee shall furnish the Solid Waste Management Division annual engineering inspection reports in accordance with Regulation 22.423. The annual engineering inspection report for Class 1 facilities is due on March 31 of each year and shall cover the preceding period beginning January 1 and ending December 31.

23. Untreated leachate screening and monitoring shall be in accordance with Section 22.429(l). Untreated leachate from the facility will be sampled from a location representing untreated leachate and will be sampled at a minimum of the same frequency and for the same parameters as groundwater monitoring except that turbidity is not a required parameter.

24. Prior to beginning the construction of any new cells and while the cell is being excavated, the certifying professional for construction of the landfill shall visually inspect the area for evidence of sand blows. Areas where sand blows exist must be over excavated to a depth of five feet below the proposed top of clay liner and at least two feet beyond the horizontal extents of the sand blow. The over excavated area will be filled with clay placed in no greater than 12 inch thick compacted lifts and shall have a maximum hydraulic conductivity of 1×10^{-5} cm/sec measure in-situ at a rate no less than one test per 40,000 square feet. The location, over excavation and filling of the sand blow shall be inspected by the certifying professional and documented in the Construction Quality Assurance Report.

PART II: Facility Groundwater Conditions

25. "Facility" is defined per Regulation 22 as: all contiguous land and structures, other appurtenances, and improvements on the land used for the disposal, treatment or processing of solid waste. This includes but is not limited to the landfill, leachate treatment ponds, and land application sites.

26. A groundwater monitoring system shall be established and maintained at the facility that consists of a sufficient number of wells or sampling points, installed at appropriate locations and depths to:

    a. Provide groundwater quality passing the relevant point of compliance downgradient of the solid waste unit, facility, or practice as defined by Regulation 22. The downgradient monitoring system must ensure detection of groundwater contamination in the uppermost aquifer.

    b. Provide background that has not been affected by any solid waste unit, facility, or practice as defined by Regulation 22.

27. Per the sampling and analysis plan, intrawell statistics will be performed for the groundwater data from the facility. Quarterly sampling is required at all monitoring wells south of Ditch 31 until enough data has been collected from the well to perform reliable intrawell statistical analysis per recommendations of the EPA Unified Guidance, [Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance by EPA dated March 2009 (EPA-530-R-09-007)].

28. Background concentrations used in statistical evaluations for the site groundwater monitoring reports cannot be based on data affected by any solid waste unit, facility, or practice as defined by Regulation 22. As such, groundwater concentrations from existing wells north of Ditch 31 cannot be used as to obtain background concentrations unless it can be shown that the data from the well is statistically the

same as concentrations known to be background that are not affected by the facility. The statistical calculations need to use appropriate methods from the Unified Guidance or the most current relevant EPA statistical guidance publication.

29. The groundwater monitoring system for this facility must at all times be properly maintained and sampled in accordance with the terms and conditions stipulated in this permit and comply with the monitoring requirements found in Regulation 22. Once established, the monitoring system shall be designed, installed, operated, and maintained to perform to design specifications throughout the active life of the facility and into the post-closure care period.

30. The initial groundwater monitoring system for the facility will consist of 21 monitoring wells. The monitor wells utilized for water quality sampling are designated as MW-1, MW-2, MW-3, MW-4R2, MW-5R, MW-6, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15R, MW-16, MW-17, MW-18, MW-19, MW-20, MW-21, MW-22, MW 23, and MW-24. All of these wells are considered Point of Compliance monitoring wells. The current monitor well locations are shown on Figure 2.1 in the Sampling and Analysis Plan, dated March 4, 2015 by FTN Associates, Ltd. found within SWMD DIN 67242. Monitoring wells MW-11, MW-12, MW-13, MW-14, MW-15R, MW-16, MW-21, MW-22, MW-23, and MW-24 have not been installed.

    All new and existing monitoring wells at the facility, listed above, will be considered as one monitoring system and included in the groundwater monitoring reports. The groundwater monitoring system for the facility includes wells monitoring: a) the existing landfill to the north of Ditch 31; b) the newly permitted landfill area south of Ditch 31, and c) the Storage and Treatment of Leachate and Land Application System from the ADEQ Water Division.

    After installation of the monitoring wells in this Permit Condition, all monitoring wells and piezometers (in the following Permit Condition) at the facility will be surveyed as a group under one survey by an Arkansas Professional Surveyor.

31. Additional piezometers to be utilized for water level measurements and the creation of potentiometric surface maps during groundwater monitoring events are FTN B-7, FTN B-11, and FTN B-15. The facility shall request to decommission these three piezometers as the construction moves to the cells in which the piezometers are located.

32. The facility will follow an approved Sampling and Analysis Plan. Any sampling and analysis plan shall comply with the requirements of Regulation 22. The currently approved sampling and analysis plan is within SWMD DIN 67242, dated March 4, 2015, from FTN Associates, Ltd.

33. During detection monitoring, water quality samples from this facility shall be analyzed for Regulation 22, Appendix 1 parameters, chloride, total dissolved solids, sulfate, total organic carbon, pH, specific conductance, iron, and manganese [Regulation 22.1204(d)].

34. Regulation 22.1103(f) requires that the work quality and construction methods of any new monitoring well(s) added to the groundwater monitoring system shall be certified by a supervising professional and must comply with Regulation 22.1202(c). Monitoring well certification shall confirm all monitoring well components have been constructed and installed in an acceptable manner following appropriate ASTM D 5092 or EPA-530-R-93-017 well construction protocols.

    After Department approval of a well installation or decommission workplan per Regulation 22.1103(f), reports of well installation or decommissioning wells shall be submitted to the Solid Waste Management Division and Water Division within 60 days of completion and shall be placed in the Operating Record.

35. The permittee shall comply with Regulation 22.1103(a) which requires, following construction, each well be developed to the degree necessary to restore formation hydraulic conductivity and ensure retrieval of samples that are representative of formation groundwater quality at this facility.

36. Per Regulation 22, the groundwater monitoring frequency at the facility shall be at least semi-annual during the active life of the facility and the post-closure period. For semi-annual monitoring, the monitoring events will be performed approximately six months apart. In addition, one monitoring event will be performed within the first six months of the year (January through June) and one monitoring event within the last six months of the year (July through December). A groundwater monitoring report will be submitted to the Solid Waste Management Division and Water Division within 90 days from the date of the monitoring event.

    When the facility is required to perform quarterly monitoring during the active life, closure, or post-closure period, the monitoring events will be performed approximately three months apart. In addition, one monitoring event will be performed during each quarter defined as: January through March, April through June, July through September, and October through December.

    The facility will be required to perform quarterly monitoring if it enters into assessment monitoring per Regulation 22.1205.

37. Each monitoring well shall be sampled by qualified personnel properly trained and familiar with appropriate procedures and techniques for the collection of groundwater samples. Prior to purging the monitor wells, static water level measurements shall be taken, recorded, and the data used to determine the rate and direction of groundwater flow in the upper most aquifer. Measurements are to be taken from the surveyed benchmark on the top rim of the well casing.

38. Sample analysis shall be performed by a laboratory that is properly certified by ADEQ to run the types of analyses required by Regulation 22. Analytical results shall be directly submitted from the contract or independent third party laboratory to the Solid Waste Management Division and the Water Division.

39. All parameter concentrations resulting from Condition 38 that are above the Method Detection Limit (MDL) must be reported.

40. The permittee must select a statistical method approved by the Department for evaluating water quality monitoring results for each constituent to determine whether a statistically significant increase (or decrease in the case of pH) occurs for each groundwater monitoring constituent in conformance with the requirements of Regulation 22.1203 (g), (h), and (i).

41. All statistical methodologies will be performed in a manner that complies with Regulation 22 and are consistent with recommendations for specific situations per the *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance* by EPA dated March 2009 (EPA 530-R-09-007) or the most current relevant EPA statistical guidance publication.

42. Groundwater monitoring reports shall be submitted to the Solid Waste Management Division and Water Division and comply with Regulation 22.1203(k). The report shall summarize the results of sampling and include a determination of whether a statistically significant increase over background values has occurred for each constituent required to be analyzed.

43. Detection of Statistically Significant Increase - If the owner or operator determines that there is a statistically significant increase (or decrease for pH) over background for one or more of the constituents listed in Appendix 1 of Regulation 22 at any point of compliance, the owner or operator:

a. Must, within fourteen (14) days of this finding, place a notice in the operating record indicating which constituents have shown statistically significant changes from background levels, and notify the Director that this notice was placed in the operating record; and

b. Must establish an assessment monitoring program meeting the requirements of Regulation 22.1205 within ninety (90) days except as provided for in Regulation 22.1204(c)(3).

c. The owner or operator may demonstrate that a source other than the facility caused the contamination or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. A report documenting this demonstration must be certified by a qualified groundwater scientist or approved by the Director and be placed in the operating record. If a successful demonstration is made and documented, the owner or operator may continue detection monitoring as specified in this section. If, after ninety (90) days, a successful demonstration is not made, the owner or operator must initiate an assessment monitoring program as required in Regulation 22.1205.

44. Statistically Significant Assessment Levels - If one or more assessment monitoring constituents are detected at statistically significant levels above the ground water protection standard in any sampling event, the owner or operator must within fourteen (14) days of this finding, place a notice in the operating record identifying the assessment monitoring constituents that have exceeded the ground water protection standard and notify the Director and all appropriate local government officials that the notice has been placed in the operating record. The owner or operator also:

a. Must characterize the nature and extent of the release by installing additional monitoring wells as necessary;

b. Must install at least one additional monitoring well at the facility boundary in the direction of contaminant migration and sample this well in accordance with Regulation 22.1205(d)(2);

c. Must notify all persons who own the land or reside on the land that directly overlies any part of the contaminant migration if contaminants have migrated off-site if indicated by sampling of wells in accordance with Regulation 22.1205(g)(1); and

d. Must initiate an assessment of corrective measures as required by Regulation 22.1206 within ninety (90) days; or

e. May demonstrate that a source other than the facility caused the contamination, or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in ground water quality. A report documenting this demonstration must be certified by a qualified ground water scientist or approved by the Director and placed in the operating record. If a successful demonstration is made the owner or operator must continue monitoring in accordance with the assessment monitoring program pursuant to Regulation 22.1205, and may return to detection monitoring if the assessment monitoring constituents are at or below background as specified in Regulation 22.1205(e). Until a successful demonstration is made, the owner or operator must comply with Regulation 22.1205(g) including initiating an assessment of corrective measures.

45. ~~a.~~ The permittee shall notify the Department within 5 days of a statistically significant increase (SSI) over established background concentration as required in this Part in any following wells: MW-17, MW-19, MW-21, MW-22, and MW-23. The Department will review the information and will notify the permittee in writing whether or not land application shall cease.

The permittee shall immediately cease all land application activities if at any time groundwater detection monitoring in any following wells: MW-17, MW-19, MW-21, MW-22, and MW-23, demonstrates contaminated ground water. Contaminated means:

i. the concentration in the ground water exceeds the maximum contaminant level (MCL) specified in the Primary Drinking Water Regulations (40 CFR 141);
ii. the concentration in the ground water exceeds Secondary Drinking Water Regulations (40 C.F.R. 143) for Chlorides of 250 mg/l; or
iii. an increase in the concentration in the ground water where the background concentration of any monitored constituents exceeds the MCL specified in the Primary Drinking Water Regulations (40 CFR 141).

46. If land application is required to cease under Condition 45 of Part II, any disposal of treated leachate shall be in accordance with the Contingency Plan identified in the March 13, 2015 WMP and the following actions must be taken:

a. Within 14 days of the findings, place a notice in the operating record indicating which constituents have shown SSI from backgrounds levels or an exceedance of the MCL for one or more of the monitored constituents, and notify the Director that this notice was placed in the operating records; and
b. The permittee shall proceed with Corrective Measure Assessment in accordance with Reg. 22.1206(c) and select a remedy that, at a minimum, meets the standards listed in Reg. 22.1207(b).
c. The permittee may establish an alternative source other than the land application activity caused the contamination of ground water or the SSI was the result of a sampling error, laboratory error, statistical error or a natural variation in ground water quality at the location. A report documenting this demonstration shall be certified by a qualified groundwater scientist or be approved by the Director and be placed in the operating record.
d. If, after 90 days, the permittee has not provided the Director a successful alternate source demonstration as required in paragraph c above, the permittee shall proceed with Corrective Measure Assessment.
e. The permittee must receive written permission from the Director prior to any resumption of land application.

PART III: Land Application and Leachate Treatment Ponds Requirements

The following Limitations and Conditions are for the construction and operation of a Leachate Treatment System, which will allow the permittee to land apply treated leachate collected from Mississippi County Class 1 Landfill only. This permit does not authorize land application of solids collected in the Leachate Treatment Ponds. The restriction of land applying solids does not apply to solids dissolved or suspended in the fluid at the time of land application that are conveyed through pumping and the sprinkler system.

1. The permittee's Waste Management Plan (WMP) shall be reviewed annually by the operator. An updated WMP shall be submitted to the Water Division when changes are made or as required by the Director. The WMP shall be submitted to the Water Division at a minimum of once every five years from the effective date of the permit for review to determine if additional requirements are necessary.

2. The permittee shall certify prior to the first application and annually thereafter that the treated leachate being land applied does not meet the characteristics of a hazardous waste in accordance with APC&EC

Regulation 23 Part 261. All supporting documentation demonstrating the above characterization shall be submitted to the Water Division with the certification for review and approval prior to beginning any land application activities. Any waste characterized as a hazardous waste shall be properly disposed of in accordance with state laws and regulations.

3. **Limitations And Monitoring Requirements for Land Application**

The following tables detail the constituent limits, monitoring frequencies, and the requirements for reporting results to the Water Division for each respective parameter listed in the table heading.

TABLE I
Leachate[1] Analysis, Reporting, and Record Keeping

Parameter	Maximum Concentrations (mg/l)	Cumulative Pollutant Loading Rate[4] (lb/ac)	Monitoring Frequency
Arsenic	5.0	37	Once every other month when land application is allowed (April 1st-October 31st)[2] with a minimum of 4 samples a year.
Cadmium	1.0	35	
Copper	1.3	1350	
Lead	5.0	270	
Mercury	0.2	15	
Nickel	0.4	378	
Selenium	1.0	90	
Zinc	5.0	2520	
Parameter	**Limits**	**Reporting Units**	**Monitoring Frequency**
Barium	100.0	mg/l	Once every other month when land application is allowed (April 1st-October 31st)[2] with a minimum of 4 samples a year.
Chromium	5.0		
Silver	5.0		
Total Solids	Report	Percentage (%)	
Electrical Conductivity		µmhos/cm	
Nitrate + Nitrite Nitrogen		mg/l	
Ammonia Nitrogen			
Total Kjeldahl Nitrogen			
Total Phosphorus			
Total Potassium			
Chloride			
pH	6.0-9.0	S.U.	
Sodium Absorption Ratio (SAR)	18.0	Unitless	
Total Volume of Treated Leachate Applied	Report	gallons/acre/year	Record, each application event
Nitrogen Application Rate	[3]Depends On Crop	lbs N/acre/year	[2]Calculate, prior to each application

[1] The treated leachate shall be sampled in accordance with Part III Condition No. 4.E.1 of the permit.
[2] Shall use the most recent analysis to calculate Nitrogen Application Rate, nutrient loading, and metal loading. Additional samples and analysis are not required prior to each application.
[3] The equation provided in Part III Condition No. 4.D.2 of the permit shall be used to calculate Plant Available Nitrogen.
[4] The equation provided in Part III Condition No. 4.D.3 of the permit shall be used to calculate the Cumulative Pollutant Loading Rate.

TABLE II
Soils Analysis, Reporting, and Record Keeping

Parameter	Limit (Reporting Units)	Monitoring Frequency
Electrical Conductivity	4.0[3] (mmhos/cm)	Annually, Prior to the 1st application of the calendar year per land application site.[2]
Cation Exchange Capacity	Report (meq/100g)	
pH[1]	Report (S.U.)	
Sodium Adsorption Ratio (SAR)	12.0[3] (unitless)	
Nitrate-Nitrogen	Report (mg/kg)	
Phosphorus		

Potassium		
Arsenic		
Cadmium		
Copper		
Lead		
Mercury		
Molybdenum		
Nickel		
Selenium		
Zinc		

[1] If the resulting pH is 5.7 or lower, lime shall be applied in accordance with recommendations from the University of Arkansas Cooperative Extension Service.
[2] Soils shall be sampled at each site in accordance with Part III Condition No. 4.E.4 of the permit.
[3] Refer to Part III Condition No. 4.E.5 of the permit.

4. SPECIFIC CONDITIONS

A. General Requirements

1. This permit includes provisions for the construction and operation of a Leachate Treatment System, which will allow the facility to land apply treated leachate from Mississippi County Class 1 Landfill only. The Leachate Treatment System consists of two (2) Leachate Treatment Ponds and 13.0 acres for land application. The Leachate Treatment Ponds are equipped with aerators and a lime dosing unit (an optional treatment to comply with concentration limits listed in Condition 3 Table I of Part III of the permit). Upon completion of treatment, the treated leachate will be land applied using a retracting water reel, piped or hauled to the City of Luxora WWTP, recirculated in the landfill (if a plan for leachate recirculation is submitted and approved by the Solid Waste Division), or hauled to another permitted off-site facility for disposal upon receipt of Water Division approval.

2. The two (2) Leachate Treatment Ponds and the land application sites shall be constructed and operated in accordance with the March 13, 2015 Waste Management Plan (WMP), the December 18, 2014 Addendum, and the June 26, 2015 Addendum. If the WMP or the Addendum is inconsistent with this permit, the treatment system and land application operation shall be managed in accordance with the terms of the permit and the WMP or Addendum shall be revised to conform to the permit conditions.

3. The operator of this Leachate Treatment System shall maintain at least a Basic Industrial license issued by the State of Arkansas in accordance with Arkansas Pollution Control & Ecology Commission (APC&EC) Regulation No.3.

4. Bypassing the Leachate Treatment Ponds is prohibited and may result in the revocation of this permit and other appropriate enforcement actions by the Department.

5. The permittee shall not cause or contribute to the taking of any endangered or threatened species of plant, fish or wildlife. The permittee shall not result in the destruction or adverse modification of the known critical habitat of endangered or threatened species as identified in 50 CFR Part 17. [APC&EC Reg. 22]

6. Treated Leachate shall not be discharged from this operation to the waters of the State or applied onto the land in any manner that may result in pooling, ponding, runoff to the waters of the State, or overland flow, even if the overland flow is entirely contained within the boundaries of the land application site. If any of the above conditions occur, land application shall cease immediately. Resumption of application activities cannot occur until Condition No. 4.D.10 of Part III of the permit

has been satisfied and all other conditions of the permit are met. *Note: Any evidence of a discharge must be reported within 24 hours to the Enforcement Branch of the Water Division in accordance with Facility Standard Condition 16 of Part IV of the permit.*

7. Untreated leachate shall not be land applied or discharged from this operation to the waters of the State. *Note: Any evidence of a discharge must be reported within 24 hours to the Enforcement Branch of the Water Division in accordance with Facility Standard Condition 16 of Part IV of the permit.*

8. The permittee shall keep current records of the leachate or solids associated with the Leachate Treatment System that are shipped from the Leachate Treatment Ponds. The records must include: type (liquid or solid), volume of liquid, mass of solids, name of the entity receiving the solids or liquids, and shipping date. It is the permittee's responsibility to ensure the receiving facility is properly permitted by the state to receive the waste being shipped. These records shall also be kept if solids from the Leachate Treatment Ponds are shipped to the permittee's permitted landfill and in accordance with Part I, Part II, and Part IV of the permit. These records shall be kept on site and made available to the Department upon request.

B. Construction of Leachate Treatment Pond

1. The permittee shall install and utilize a control structure that can restrict the flow of fluids from entering the Leachate Treatment Pond.

2. The clay used in constructing the Leachate Treatment Ponds (not including the seal) shall be relatively incompressible, tight, and compacted at or up to 4% above the optimum water content to at least 95% Standard Proctor Density. The compacted clay liner shall have a hydraulic conductivity no greater than 1.0×10^{-7} cm/sec and a thickness of at least 2 feet. [APC&EC Reg. 22]

3. The Leachate Treatment Ponds 60 mil HDPE geomembrane liner shall be installed and maintained per manufacturer's specifications. The geomembrane liner must be ventilated in order to protect the integrity of the liner and maintain capacity for proper operation of the Leachate Treatment Ponds. [APC&EC Reg. 22]

4. The Leachate Treatment Ponds shall contain a liner with a drainage layer with leak detection. The permittee shall record the daily estimated volume pumped to the Leachate Treatment Ponds from the leak detection sump. These records shall be kept onsite and shall be made available to the Department upon request.

5. The Leachate Treatment Pond shall be surrounded by a fence that is 8 feet high to keep out debris, wildlife, and trespassers.

6. A lockable gate shall be installed at the entrance of the leachate treatment system, and shall remain locked at all times when the treatment system is unattended or not in use.

7. There shall be a permanent sign posted at all entrances of the facility that lists the following information:

   a. Name of the facility;
   b. Name of the operator;
   c. Operator's address and phone number; and
   d. ADEQ permit number.

8. Prior to operation of the Leachate Treatment System the permittee shall obtain written approval from the Water Division. Within thirty (30) days of completion of construction, a Professional Engineer (PE) registered in Arkansas shall submit written certification to the Department (Permits Branch of the Water Division) that the Leachate Treatment Ponds have been constructed in accordance with the approved plans and specifications. The construction certification shall include documentation demonstrating, at a minimum, conformance with the permittee's design in the approved WMP.

9. Changes to or deviations from the construction or the layout of the Leachate Treatment System as indicated in the approved WMP are not authorized unless approved in writing by the Water Division.

C. Leachate Treatment Pond Requirements

1. If a leak (more than 500 gallons per day per acre) is detected, the permittee shall immediately cease the flow of fluids from entering the Leachate Treatment Ponds. The Leachate Treatment Ponds shall be emptied in a manner approved by the Water Division and the Solid Waste Division, and the permittee shall replace or retrofit the liner and provide a written report on the damage to the liners and the steps taken to repair or retrofit the liner. Resumption of activities shall only be authorized as provided in accordance with the requirements of Condition 4.C.6 of Part III.

2. The permittee shall maintain at all times a minimum of three (3) feet of freeboard. That includes the permittee preventing any leachate from entering the Leachate Treatment Ponds until the minimum freeboard has been achieved.

3. A staff gauge, liquid level board, or other appropriate device with a minimum 0.5 foot graduation shall be installed and maintained to monitor the elevation of the surface level and demonstrate compliance with the three (3) foot minimum freeboard limit.

4. The depth of the sludge in the Leachate Treatment Ponds shall be measured once a year after growing season and reported with the annual report. If the sludge depth is greater than one (1) foot, the Leachate Treatment Pond(s) shall be emptied and the sludge shall be removed in a manner that allows inspection of the liner. The sludge removed from the Leachate Treatment Ponds shall be properly disposed of in accordance with state laws and regulation and documented in accordance with Condition 4.A.7.

5. Upon completion of sludge removal in accordance with Condition 4.C.4 of Part III, the permittee shall inspect and report, in writing, any damage to the liner. The report must also include the steps taken to repair the liner, if any.

6. Upon completion of any liner inspection or repair, the permittee shall submit a certification signed and stamped by a registered professional engineer in the state of Arkansas that the liner is in good operating condition and is in compliance with Conditions 4.B.2 and 4.B.3 of Part III. The certification shall also include the liner inspection report required by Condition 4.C.5 of Part III. **Operation of the Leachate Treatment Ponds shall not commence until the Water Division has issued a letter of authorization to resume operation (See Condition 4.B.8 of Part III). If no notice to the contrary is received by the owner or operator within 14 days after receipt by the Department of the certification, the certification shall be deemed to be acceptable and treatment pond and land application may commence.**

7. The Leachate Treatment Pond's levees shall be maintained with adequate vegetation (100% coverage with minimum of 80% density) to prevent erosion. Any invasive vegetation (i.e. shrubs or trees) that would impact the integrity of the Leachate Treatment Pond's levees shall be removed.

8. The items below pertaining to the levees shall be inspected semi-annually. These records shall be kept on site and made available to the Department upon request.

   a. Adequate vegetation (100% coverage with a minimum of 80% density);
   b. Any erosion; or
   c. Invasive vegetation (i.e. trees or shrubs).

D. Land Application of Leachate

1. The licensed operator, as required by Part III Condition 4.A.3, shall be present during any land application event in order to ensure compliance with all applicable permit conditions, including but not limited to Condition 4.A.5, 4.A.6. and 4.D.7-9 of Part III of the Permit.

2. Plant Available Nitrogen (PAN) shall be calculated using the following equations:

PAN Equations	
For Surface applied leachate, PAN(mg/l)	$0.3(TKN - NH_3) + 0.5NH_3 + NO_3 + NO_2$
Conversion from PAN(mg/l) to PAN(lbs/1,000 gallons)	0.00834 * PAN (mg/l)

The treated leachate shall not be applied at a rate (in units of 1,000 gallons/acre) that exceeds the nitrogen uptake rate of the cover crop (lbs/acre) based on the calculated PAN (lbs N/acre) or at any rate that would result in a violation of any other condition of this permit (i.e. pooling, ponding, or hydraulic loading). See the table below for a list of Nitrogen uptakes for crops authorized for land application under this permit. Any crop not listed in the following table may be added to the permit as a permit modification.

Nitrogen Uptake of Cover Crops	
Crop Name	Uptake (lbs/acre)
Bermuda	300

3. Cumulative Pollutant Loading Rate shall be calculated using the following equation:

$$\frac{Pounds}{Day/Acre} = \frac{\text{Concentrations } \left(\frac{mg}{l}\right) * 8.34 * \text{Daily Volume of Leachate Applied (MGD)}}{\text{Acreage Applied}}$$

4. The treated leachate shall not be land applied at a rate that exceeds the hydraulic loading rate described in Section 6.1 of the approved March 13, 2014 WMP.

5. Land application sites shall maintain adequate vegetation (100% coverage with minimum of 80% density) to ensure the nitrogen uptake rate of the cover crop used to calculate the limit in Condition 4.D.2 of Part III is accurate.

6. The permittee shall comply with all conditions of the permit before, during, and after land application on the following sites. Acreage listed below is not meant as an approval of acreage that does not meet all conditions of the permit:

Land Application Sites							
Owner	**Field ID**	**Section**	**Township**	**Range**	**Acreage**	**Latitude**	**Longitude**
Mississippi County	Site 1	1	13 North	10 East	2.17	35° 46' 24.2" N	89° 57' 53.4" W
	Site 2				2.17	35° 46' 22.3" N	89° 57' 53.4" W
	Site 3				2.17	35° 46' 20.4" N	89° 57' 53.4" W
	Site 4				2.17	35° 46' 18.5" N	89° 57' 53.4" W
	Site 5				2.17	35° 46' 16.6" N	89° 57' 53.4" W
	Site 6				2.17	35° 46' 14.7" N	89° 57' 53.4" W

7. Application of treated leachate shall be evenly distributed over the area to be applied.

8. Treated leachate authorized by Condition 4.A.1 of Part III shall not be applied to the land application site with slopes greater than 6%.

9. Land application is prohibited when the soils are saturated; frozen; covered with ice or snow; during precipitation events; or when precipitation is imminent (greater than a 30% chance of precipitation predicted by the nearest National Weather Service station) within a 24-hour period. Compliance may be demonstrated by recording daily weather forecasts. These records shall be kept on site and made available to the Department upon request.

10. Prior to each application event, the permittee shall measure the soil moisture with an electronic soil moisture meter to determine if the application area, where treated leachate will be applied to the land, is saturated. The soil moisture shall be measured in accordance with the following guidelines:

    a. A minimum of two (2) samples per application site, which adequately determines the saturation of the entire application area where treated leachate will be applied, shall be collected;
    b. Coordinates of each sample location shall be collected and recorded; and
    c. If a soil moisture sample(s) determines an application area is saturated (soil moisture content above 8 from the electronic soil moisture meter), then land application shall not occur.
    d. The permittee shall maintain records showing compliance with items a, b, and c above. These records shall be kept on site and made available to the Department upon request.

11. Treated Leachate shall not be land applied within 100 feet of streams including intermittent streams, ponds, lakes, springs, sinkholes, rock outcrops, wells and water supplies; or 300 feet of extraordinary resource waters as defined by the Department's Regulation No. 2. Buffer distances for streams, ponds and lakes must be measured from the ordinary high water mark.

12. Treated Leachate shall not be land applied within 50 feet of property lines or 300 feet of neighboring occupied buildings existing as of the date of the permit. The restrictions regarding property lines or neighboring buildings may be waived if the adjoining property is also approved as a land application site under a permit issued by the Department or if the adjoining property owner consents in writing.

13. All setbacks, cited in Conditions 4.D.11 and 12 of Part III of the permit, shall be flagged prior to, and be present during, any land application event for all land application sites.

14. The following items pertaining to the land application equipment shall be inspected for proper operation once per week during the operating period for land application:

    a. Spray head(s)/nozzle(s) used;

b. Pump(s) used;
c. Piping to site(s) used; and
d. Any valves for evidence of leakage and proper operation

15. The following items pertaining to the land application sites shall be inspected before, during, and after land application activities:

    a. Check the placement of all flags required in Condition 4.D.13 above;
    b. Check drainage areas for evidence of runoff*;
    c. Indications of pooling, ponding, discharge to waters of the State, or overland flow;
    d. Indications of saturation; and
    e. Vegetative cover at 100% coverage with a minimum of 80% density.

    ****Note: Any evidence of runoff must be reported within 24 hours to the Enforcement Branch of the Water Division in accordance with Facility Standard Condition 16 of Part IV.***

16. The permittee shall develop checklists that will demonstrate compliance with Conditions 4.E.14 and 4.E.15 above. A checklist shall be completed for each monitoring period outlined in Conditions 4.E.14 and 4.E.15 above and contain the name of the person conducting the inspection, title, and date of inspection. Additional information may be added to the inspection report at the permittee's discretion. All checklists shall be kept on site and made available to the Department upon request.

17. No land application is to take place within a flood plain.

E. Sampling

1. Prior to the 1st application, the permittee shall sample the treated leachate for all parameters listed in Condition 3, Table I of Part III and the permittee shall provide the analyses to the Department for **review and approval.** Thereafter, the permittee shall sample the treated leachate for all parameters listed in Condition 3, Table I of Part III once every other month when land application is allowed (April 1st-October 31st) with a minimum of 4 samples a year and the April sample shall be collected prior to the 1st application of the calendar year. Land application shall not occur between November 1st-March 31st.

2. All treated leachate samples shall be representative of the treated leachate to be land applied.

3. If the analytical results for any parameter required to be sampled exceeds the maximum concentration or limit specified in Condition 3, Table I of Part III or exhibits any hazardous waste characteristic as determined Condition 2 of Part III, the permittee shall:

    a. Cease all land application of treated leachate;
    b. Submit a Remediation Plan and schedule to the Water Division for review and approval within 15 days;
    c. Address any deficiencies in the Remediation Plan and schedule within 15 days of receiving written notification of such from the Water Division; and
    d. Implement the approved Remediation Plan according to the schedule.

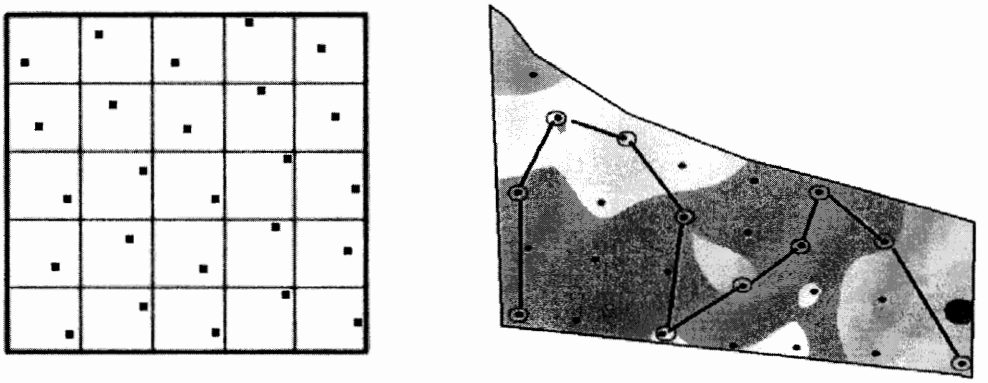
    Note: No land application of treated leachate shall resume prior to receiving written permission from the Water Division.

4. The land application sites shall have the soils tested for the parameters listed in Condition 3 Table II of Part III of the permit. Soil samples shall be collected according to the following method:

a. Identify representative sampling areas/zones that are uniform in soil and previous management history. Soils that are contained within the same soil association according to the USDA Soil Survey are considered uniform for the purposes of this permit. These areas shall be identified on a site map and approved by the Water Division. The areas shall remain the same between each sampling event.

b. Using a clean soil probe, soil auger, or spade, collect a minimum of 10 individual subsamples to a 4-inch depth per sample area in a random zigzag or grid pattern (see Fig 1 below) in accordance with the sampling locations on the site map. If using a spade, avoid wedge shaped samples. One composite sample must be taken for every land application site identified in condition 4.D.6 above.

c. Combine individual subsamples in a clean plastic bucket and mix thoroughly. Place a subsample of the mixed composite in a clean soil box and label with the field ID name, and permittee information. Subsamples shall be representative of each land application site.



Grid Pattern Zig Zag

Figure 1. Representative Soil Sampling of Land Application Area Patterns

5. If a land application site's soil analysis exceeds any limit listed in Condition 3 Table II of Part III of the Permit, the permittee shall:

   a. Cease all land application on the corresponding land application site;
   b. Submit a Remediation Plan and schedule to the Water Division for review and approval within 15 days of the reported exceedance;
   c. Address any deficiencies in the Remediation Plan and schedule within 15 days of receiving written notification of such from the Water Division; and
   d. Implement the approved Remediation Plan according to the schedule.
   e. The permittee must receive written permission from the Water Division prior to any resumption of land application on the corresponding land application site.

F. Reporting

1. Water Division Annual reports are due by March 31st of each year for the previous permitted months from January 1st to December 31st (i.e. Annual report is due on March 1st, 2016 for the 2015 calendar year). The annual reports shall include the following:

   a. depth of sludge in Leachate Treatment Ponds;
   b. land application dates;
   c. land application locations (identify land application sites);

d. quantities of treated leachate applied in gallons per acre per year;
e. methods of application;
f. amounts of nutrients applied;
g. total amount of PAN applied on each field (pounds/acre);
h. cover crop of each field;
i. total metals added (in that particular year) in lbs per acre;
j. total metals applied to date;
k. copies of the treated leachate, soil, and ground water analyses; and
l. Ground Water Monitoring Report Summary.

The Water Division annual reports shall be submitted to the following address:

Arkansas Department of Environmental Quality
Water Division, No-Discharge Section
5301 Northshore Dr.
North Little Rock, Arkansas 72118-

Or

Water-permit-application@adeq.state.ar.us

G. Closure Plan for the Leachate Treatment Ponds and the Land Application System

1. The permittee shall submit to the Water Division for approval a Closure Plan for the Leachate Treatment Ponds and Land Application System. The Closure Plan shall be stamped and signed by an Arkansas registered Professional Engineer and submitted to the Water Division in writing at least sixty (60) days prior to the proposed termination date. The Closure plan should include, but is not limited to, the following as necessary:

   a. The final disposal of all the leachate in the Leachate Treatment Ponds;
   b. The removal and disposal of all the sludge in the Leachate Treatment Ponds;
   c. The removal and disposal of the 60 mil HDPE geomembrane liner;
   d. Disconnection of the leachate influent pipe;
   e. The removal of all pumps and piping; and
   f. The regrading/seeding of the facility.
   g. Soils testing for all land application sites.
   h. Soils testing for the area underneath the Leachate Treatment Ponds.

2. Upon completion of closure activities, the permittee shall submit a closure certification, signed and stamped by an Arkansas registered Professional Engineer, to the Water Division stating that the Leachate Treatment Ponds and Land Application System were closed according to the Closure Plan approved by the Water Division.

PART IV: Facility Standard Conditions

1. This permit may be revoked in whole or in part or modified whenever, in the opinion of the Department, the facilities are no longer in compliance with the Arkansas Solid Waste Management Act, Regulation 22, Arkansas Water and Air Pollution Control Act, and the applicable rules and regulations. This permit shall not relieve the permittee, its agents or employees from compliance with all provisions of the applicable statutes, rules, and regulations.

2. The Department may issue modifications or amendments to this permit governing the design, operation, monitoring, reporting, maintenance, closure or post-closure of the facility during the term

of this permit. Such modifications or amendments shall be attached to this permit and shall be fully maintained and enforceable as a condition or conditions of this permit.

3. This permit is issued in reliance upon the statements and representations made in the application, operating narrative, plans, specifications and related documents and the Department has no responsibility for the adequacy or proper functioning of the disposal facility. Nothing herein contained shall be construed as releasing the permittee from any liability from damage to persons or property by reason of the installation, maintenance operation of the disposal facility.

4. An initial permit fee has been received by the Department. Annual fees due thereafter shall be assessed in accordance with Regulation Number 9, Fee System for Environmental Permits. The facility shall also be responsible for quarterly payments of other landfill disposal fees as required under Regulation 11, Regulations for Solid Waste Disposal Fees; Landfill Post Closure Trust Fees and Recycling Grants Program. Failure to pay annual fees or quarterly payments when due may result in revocation of this permit.

5. Any change in ownership or control of the operation of this landfill may be considered a permit modification and shall be fully disclosed to the Department. For purposes of this permit, ownership or control shall be determined by a change in the debt or equity of the permittee of five percent (5%) or more. Notwithstanding the above, the permittee is not required to disclose a change in ownership or control of the facility if the change is among the persons and/or entities previously disclosed to the Department in Section E of the Disclosure Statement or similar disclosure.

6. Appropriate NPDES storm water permit(s) shall be obtained for storm water discharges from the landfill site and borrow sites. A Storm Water Pollution Prevention Plan (SWPPP), which outlines erosion and sediment control measures, shall be prepared and implemented in accordance with applicable NPDES requirements. A copy of the SWPPP shall be maintained on-site for reference by operating staff.

7. The permittee shall comply with the air criteria requirements of Regulation 22.416. Those requirements include meeting the State Implementation Plan (SIP) pursuant to Section 110 of the Clean Air Act; prohibiting open burning of solid waste, unless authorized by the Department; and establishing fire safety procedures.

8. The Department's decision to issue this permit is final for purposes of appeal as of the date indicated in the Certificate of Service below. If any provision of these conditions or the application of these conditions thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of these conditions that can be given effect without the invalid provision or application. Therefore, to this end, the provisions of these conditions are declared to be severable.

9. Any statements in the operational narrative, specifications, groundwater sampling and analysis plans and engineering plans that conflict with Regulation 22, permit conditions herein, or other applicable laws and regulations shall not be considered authorized by the Department unless that statement is specifically authorized by this permit.

10. Duty to Comply - The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Arkansas Solid Waste Management Act (Ark. Code Ann. § 8-6-201 et seq.) or the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101et.seq.) and is grounds for civil and administrative enforcement action; for permit termination, revocation and reissuance, or modification.

11. 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 Clean Water Act and Section 106 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

12. State Laws - 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 established pursuant to any applicable State law or regulation.

13. Property Rights - The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

14. Proper Operation and Maintenance

A. 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 this permit. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

B. The permittee shall provide an adequate and trained operating staff which is duly qualified to carry out operation, maintenance and testing functions required to ensure compliance with the conditions of this permit.

15. Duty to Mitigate - The permittee shall take all reasonable steps to prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health, the environment, or the water receiving the discharge.

16. Reporting of Violations and Unauthorized Discharges

A. Any violations to this permit must be reported to the Enforcement Branch of the Water Division immediately (within 24-hours). Any leaks or seeps shall be reported to the Enforcement Branch of the Water Division and appropriately corrected. Any discharge from the fluids storage system such as an overflow, broken pipe, etc., shall be immediately reported to the Enforcement Branch of the Water Division.

B. The operator shall visually monitor and report immediately (within 24 hours) to the Enforcement Branch of the Water Division any unauthorized discharge from any facility caused by dike or structural failure, equipment breakdown, human error, etc., and shall follow up with a written report within five (5) days of such occurrence. The written report shall contain the following:

i. A description of the permit violation and its cause;
ii. The period of the violation, including exact times and dates;
iii. If the violation has not been corrected, the anticipated time expected to correct the violation; and
iv. Steps taken or planned to reduce, eliminate, and prevent the recurrence of the violation.

C. Reports shall be submitted to the Enforcement Branch at the following address:

Arkansas Department of Environmental Quality
Water Division, Enforcement Branch
5301 Northshore Dr.
North Little Rock, Arkansas 72118
Fax (501) 682-0880

Or

Water-enforcement-report@adeq.state.ar.us

17. Penalties for Tampering - The Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.) provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under the Act shall be guilty of a misdemeanor and upon conviction thereof shall be subject to imprisonment for not more than one (1) year or a fine of not more than ten thousand dollars ($10,000) or by both such fine and imprisonment.

18. Retention of Records - The permittee shall retain records of all monitoring information, copies of all reports required by this permit, and records of all data used to complete the application for this permit for the life of the permit

19. Record Contents - Records and monitoring information shall include:

A. The date, exact place, time, and methods of sampling or measurements, and preservatives used, if any;
B. The individuals(s) who performed the sampling or measurements;
C. The date(s) the analyses were performed;
D. The individual(s) who performed the analyses;
E. The analytical techniques or methods used; and
F. The measurements and results of such analyses.

20. Inspection and Entry - The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, 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 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; and
D. Sample, inspect, or monitor at reasonable times, for the purposes of assuring permit compliance any substances or parameters at any location.

21. Anticipated Noncompliance - The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

22. Duty to Provide Information - The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying; revoking and reissuing or terminating this permit; or to determine compliance with this permit. The permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit. Information shall be submitted in the form, manner and time frame requested by the Director.

23. Availability of Reports - Except for data determined to be confidential under the Arkansas Trade Secrets Act (Ark. Code Ann. § 4-75-601 *et seq.*), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department of Environmental Quality. The name and address of any permit applicant or permittee, permit applications, permits, and waste data shall not be considered confidential.

24. Penalties for Falsification of Reports - The Arkansas Air and Water Pollution Control Act provides that any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under this permit shall be subject to civil penalties and/or criminal penalties under the authority of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).

25. Applicable Federal, State, or Local Requirements - Permittees are responsible for compliance with all applicable terms and conditions of this permit. Receipt of this permit does not relieve any operator of the responsibility to comply with any other applicable Federal, State, or local statute, ordinance policy, or regulation.

PART V: DEFINITIONS

"APC&EC" means the Arkansas Pollution Control and Ecology Commission.

"Available Acreage" means total acreage minus buffer zones.

"Facility" means all contiguous land and structures, other appurtenances, and improvements on the land used for the disposal, treatment or processing of solid waste. This includes but is not limited to the landfill, leachate treatment ponds, and land application sites.

"Department" means the Arkansas Department of Environmental Quality (ADEQ).

"Director" means the Director of the Arkansas Department of Environmental Quality.

"s.u." means standard units.

'Twenty-five (25) year, twenty-four (24) rainfall event" means precipitation events with a probable recurrence interval of once in twenty five years as defined by the National Weather Service in Technical Paper No. 40, "Rainfall Frequency Atlas of the State," May, 1961, or equivalent regional or State rainfall probability information developed from this source.

APPROVED BY: **Arkansas Department of Environmental Quality**
5301 Northshore Drive
North Little Rock, Arkansas 72218

Benjamin T. Jones, Chief, SWMD

6/30/2015
Date

CERTIFICATE OF SERVICE

I, Barbara J. Mathews, hereby certify that a copy of this permit has been mailed by first-class mail to The Honorable Randy Carney, Mississippi County Judge, 200 West Walnut Street, RM 204, Blytheville, AR 72315, on or before this 30th day of June, 2015.

Permit Modification Application Summary and Rationale

Mississippi County Class 1 Landfill,
Treatment of Leachate,
and Land Application System
Permit No. 0136-S1-R4; AFIN No. 47-00124

Permit Application Summary

This summary form consists of information submitted during the permitting process. It represents basic information from the administrative record utilized in forming recommendations from the Solid Waste Management Division and the Water Division. The entire file for the solid waste permit application and water permit application specified below should be reviewed for complete details on the proposed facility.

Permit Application Summary	
Name of Applicant:	Mississippi County
Type of Facility:	Class 1 Landfill, Treatment of Leachate, and Land Application System
Engineering Firm:	FTN Associates, Ltd.
Application Date:	Solid Waste - Submitted on April 29, 2011 Water – Submitted on October 23, 2014
Site Location	General: 1695 East County Road 506, Luxora, Arkansas 72358 Specific: Western ½ of the Southeast ¼ of the Southeast ¼ of Section 1, Township 13 North, Range 10 East, Mississippi County, Arkansas
Permit Area:	Total Property Area: 320± acres Permitted Landfill Area: 96.5± acres Land Application Area: 13.0± acres
Residences Within 2 Miles:	The approximate number of dwellings within two miles of the site is presented in the aerial photo provided as Figure 2.7 in the Permit Modification Application, SWMD document number 66829.
Water Supplies Within 2 Miles:	The approximate number of water wells within two miles of the facility is 20, as documented in Section 2.13 of the Permit Modification Application, SWMD document number 66829.
Wetlands:	There are no known wetlands as documented in Section 2.3 of the Permit Modification Application and as verified in correspondence by the Army Corps of Engineers provided in Appendix E, both in SWMD document number 66829.
Geology	This landfill facility is located within the Mississippi Embayment of the Gulf Coastal Plain Physiographic Province. The Mississippi Embayment is in part underlain by alluvial deposits of Quaternary age and gently dipping unconsolidated and semi-consolidated Cretaceous and Tertiary sediments (sand, silt and clays) that form a southward plunging syncline. The axis of the syncline follows approximately the channel of the Mississippi River. Within the Mississippi River Alluvial Plain, the pre-Quaternary sediments are truncated and blanketed by Quaternary Alluvium except on Crowley's Ridge. The Quaternary deposits in the embayment can be sub-divided into two units, a lower sand and gravel unit that grades into an upper unit that is primarily silt and clay. The basal portion of the sand and gravel unit generally is a coarse sand with varying amounts of coarse gravel. In places, it is predominantly gravel. The thickness of the alluvium varies greatly but generally ranges from 100 to 200 feet thick. This landfill is located within a major seismic impact zone referred to

Permit Application Summary	
	as the New Madrid Seismic Zone.
Soils:	The site is underlain by Quaternary-age alluvium and terrace deposits. Based on published documents in the vicinity of the site, the Quaternary deposits are approximately 100 ft in thickness at the site (Pugh et al. 1997). A simplified stratigraphic profile was developed by grouping similar materials shown on borings logs into the general strata described below. Stratum 1 – Interbedded Clay and Silt (Quaternary) In the expansion area, this stratum is approximately 17 to 31 ft thick and generally consists of lean to fat clay interbedded with silt and fine-grained sand lenses. The unit is typically brownish grey with mottled oxidation and grades to dark grey at approximately 13 ft bgs to 18 ft bgs. Occasional calcareous gravel and white calcitic deposits occur through the unit. Stratum 2 – Poorly Graded Sand with Silt (Quaternary) Stratum 2 generally consists of light brown to grey, poorly graded fine-grained sand with silt, with occasional fine-grained gravel. The top of this unit occurs at approximate depths ranging from 17 ft bgs to 31 ft bgs in the expansion area. Based on published material this unit grades to coarser grained sands and gravels in its basal portion and is approximately 100 ft thick (Peterson 1985, Pugh et al. 1997). Sand blows or sand-filled fissures may be associated with the site being located in a seismic impact zone associated with the New Madrid seismic zone (NMSZ). The USGS Professional Paper 1336-B contains a map indicating the landfill property is located in an area showing 10 to 15% percent of land area covered by evidence of sand blows (Obermeier, 1989). In addition, sand-filled fissures can be an inch or less in width. Investigations documented in Al-Shukri, et.al., 2005 and Cox, et.al, 2007 found numerous, small sand-filled fissures in trenches associated with sand blows and liquefaction events in eastern and even southeastern Arkansas. Given the setting of the Mississippi County landfill relative to sand blows and seismic activity and given the sand found at the surface in many of the borings across the expansion site, a similar condition could be present.
Ground Water:	The major source of groundwater in the landfill area is the Mississippi River Valley alluvial aquifer which is composed of Quaternary sediments deposited in river and river-proximal environments. The aquifer is composed of unconsolidated materials ranging from clay and silt in the upper part and grading downward to coarse sand and gravel at the base (Hosman and Weiss, 1991). The aquifer effectively can be divided into two distinct units based on lithologies: a lower unit that contains the primary aquifer consisting of coarse sands and gravels derived from alluvial and terrace deposits that coarsen downward, and an upper unit that consists of fine sand, silt, and clay that serves as a confining unit of varying competency (Kresse, et al, 2014). Water supply wells within the sand and gravel aquifer are generally high-yielding and capable of producing hundreds to thousands of gallons per minute (Kresse, et al, 2014).

Permit Application Summary	
Surface Drainage Sequence:	The Landfill, Leachate Treatment Ponds, and Land Application Sites lies within Stream Segment 5A of the St. Francis Basin. Surface water from the proposed expansion area empties into US Army Corps of Engineers (USACE) Ditches 31 and 40, along the site's northern and southern boundaries, respectively. Both ditches flow westward towards the St. Francis River. Surrounding areas were evaluated to determine if any Extraordinary Resource Waters (ERWs), Ecologically Sensitive Waterbodies (ESWs), Natural and Scenic Waterways (NSWs), or impaired streams in the 2008 ADEQ 303(d) List of Impaired Waterbodies in the State of Arkansas are near the Landfill, Leachate Treatment Ponds, and Land Application Sites. The waterbody review determined that the Landfill, Leachate Treatment Ponds, and Land Application Sites are more than 10 miles away from any impacted waterway. The Landfill, Leachate Treatment Ponds, and Land Application Sites meet the required setbacks; therefore, no additional permit requirements are necessary.
Waste Streams:	Class 1 Municipal Solid Waste as defined in Arkansas Regulation 22.
Capacity:	Total Capacity = 9,655,000 cubic yards
Disposal Rate	140,000 cubic yards per year (approximately may vary)
Projected Active Life after this modification	63.5 years (approximately, will vary with waste received)
Leachate Storage and Land Application	The permittee will be treating and land applying treated leachate. The leachate will be transported or pumped to system that utilizes two (2) treatment ponds in series with a total volume of 4.29 million gallon. The 1st treatment pond is equipped with one air jammer aeration unit and the lime treatment system. The 2nd treatment pond is equipped with three (3) air jammer aeration units. A leak detection system is installed beneath the secondary clay liner for both ponds. The treated leachate will be pumped from the treatment ponds and land applied using a retracting water reel. The facility will move the retracting water reel to the six (6) different land sites. Per the Waste Management Plan any surplus of the treated leachate will be transferred to the town of Luxora. Sludge in the treatment ponds will be removed by vacuuming or pumping and dewatered using a dewatering box or similar equipment. Once the sludge is dewatered, the sludge will be transported to an appropriate disposal facility. As an alternative to sludge management, the permittee may use bio-augmentation with the addition of selected bacteria to reduce the depth of the sludge in the treatment ponds.
Maximum Limits to Land Application	The land application of treated leachate is limited by 40 C.F.R. Part 503 cumulative pollutant loading rate on metals, maximum concentrations and limits on metals from APC&EC Regulation 23 Part 261, sodium adsorption ratio (SAR), pH, the plant available nitrogen (PAN) equation (refer to Condition No. 4.D.2 of Part II of the permit), and the nitrogen uptake rate of the cover crop.
Landfill's Bottom Liner System:	• Prepared Subgrade • 2 ft compacted clay liner with maximum hydraulic conductivity of $1*10^{-7}$ cm/s • 60 mil HPDE flexible membrane liner • Geocomposite • 12 inches of leachate drainage/protective cover layer

Permit Application Summary	
Leachate Treatment Pond's Bottom Liner System:	• Prepared Subgrade • Double-sided Geocomposite Leak Detection System • 2 foot compacted clay liner with maximum hydraulic conductivity of $1*10^{-7}$ cm/s • 60 mil HPDE flexible membrane liner
Final Cover:	Option 1: • 12 inches of interim cover • 18 inches of compacted clay with maximum hydraulic conductivity of $1*10^{-7}$ cm/s • 40 mil textured HPDE or LLDPE flexible membrane liner • Geocomposite • 12 inches of top soil (erosion layer) • Vegetative cover Option 2: • 12 inches of interim cover • A geosynthetic clay liner (GCL) with maximum hydraulic conductivity of $5*10^{-9}$ cm/s • 40 mil textured HPDE or LLDPE flexible membrane liner • Geocomposite • 18 inches 2 of top soil (erosion layer) • Vegetative cover

References

Al-Shukri, Haydar, Robert E. Lemmer, Hanan H. Mahdi, and Jeffrey B. Connelly, 2005, "Spatial and Temporal Characteristics of Paleoseismic Features in the Southern Terminus of the New Madrid Seismic Zone in Eastern Arkansas" *Seismological Research Letters,* July/August 2005, v. 76, p. 502-511.

Cox, R.T., A.A. Hill, D. Larsen, T. Holzer, S.L. Forman, T. Noce, C. Gardner, J. Morat, 2007, "Seismotectonic Implications of Sand Blows in the Southern Mississippi Embayment" *Engineering Geology*, 89, pp 278-299.

Obermeier, S.F., 1989, The New Madrid earthquakes - An engineering-geologic interpretation of relict liquefaction features: U.S. Geological Survey Professional Paper 1336-B, 114 p.

Kresse, Timothy M., Phillip D. Hays, Katherine R. Merriman, Jonathan A. Gillip, D. Todd Fugitt, Jane L. Spellman, Anna M. Nottmeier, Drew A. Westerman, Joshua M. Blackstock, and James L. Battreal, 2014, Aquifers of Arkansas—Protection, Management, and Hydrologic and Geochemical Characteristics of Groundwater Resources in Arkansas, USGS Scientific Investigations Report 2014–5149, 334p.

Hosman, R.L., and Weiss, J.S., 1991, Geohydrologic units of the Mississippi embayment and Texas coastal uplands aquifer systems, South-Central United States: U.S. Geological Survey Professional Paper 1416–B, 19 p.

Peterson, J.C., M.E. Broom, and W.V. Bush. 1985. Geohydrologic Units of the Gulf Coastal Plain in Arkansas, USGS Water Resources Investigations Report 85-4116, 20 p.

Pugh, A.L., P.W. Westerfield, and D.T. Poynter. 1997, Thickness of the Quaternary alluvial and terrace deposits comprising the Mississippi River Valley alluvial aquifer in eastern Arkansas, USGS Water Resources Investigations Report 97-4049, 1 plate.

Water Sources

The following Sources were used to draft the permit:

A. APC&EC Regulation No. 2, Establishing Water Quality Standards for Surface Waters of the State of Arkansas, as amended.
B. APC&EC Regulation No. 5, Liquid Animal Waste Management Systems, as amended.
C. APC&EC Regulation No. 8, Administrative Procedures, as amended.
D. APC&EC Regulation No. 22, Solid Waste Management Rules, as amended.
E. APC&EC Regulation No. 23, Hazardous Waste Management, as amended.
F. 40 C.F.R. Part 122
G. 40 C.F.R. Part 141 for the Primary Drinking Water Standards
H. 40 C.F.R. Part 503 for land application of sewage sludge.
I. Ark. Code Ann. § 8-4-101 et seq., Arkansas Water and Air Pollution Control Act.
J. Ark. Code Ann. § 4-75-601 et seq., Arkansas Trade Secrets Act.
K. Ark. Code Ann. § 17-32-301 et seq.,
L. Integrated Water Quality and Assessment Report (305(b) Report).
M. 2009 ADEQ Landfarm Study.
N. *Practical Handbook of Disturbed Land Revegetation*, Munshower, 1994.
O. *Wastewater Engineering: Treatment and Reuse: 4th Edition* Table 14-51.
P. UAEX Self-Study Guide 8: Soil Fertility Management in Pastures essential Nutrient for Plant Growth
Q. *Soils: An Introduction to Soils and Plant Growth*: 4th Edition; Donahue, Miller, & Shickluna; 1977.
R. USDA Part 651, Animal Waste Management Field Handbook.
S. USDA Natural Resource Conservation Service, *Indicators for Soil Quality Evaluation*, April 1996.
T. U.S. Geological Survey, Water Supply Paper 2220: Basic Ground-water Hydrology, rev. 2004.
U. EPA handbook of Suggested Practices for the Design and Installation of Ground-Water Monitoring Wells, 1991.
V. Recommended Standards for Wastewater Facilities: 2004 Edition (Ten State Standards).
W. EPA, Protecting Ground Water – Designing a Land Application Program
X. Minnesota Pollution Control Agency, Land Treatment of Landfill Leachate, April 2011.
Y. Tennessee's Design Guidelines for Wastewater Treatment Systems Using Spray Irrigation.
Z. Application No. 5091-WR-2 was received on 10/23/2014.
AA. Additional information submitted 10/23/2014, 11/14/2014, 11/18/2014, 12/18/2014, and 1/20/2015.
BB. Groundwater Monitoring Plan submitted 11/6/2014.
CC. An Addendum to the Groundwater Monitoring Plan submitted 2/6/2015.
DD. Additional information for the Groundwater Monitoring Plan submitted 2/6/2015.
EE. Additional information for the revised WMP that discuss the leak detection system was received on 3/13/ 2015.

Landfill Permit Summary and Rationale

The following information was considered during the preparation of a permit for the proposed landfill:

- Permit Pre-Application dated January 12, 2007.
- This Class 1 Landfill permit modification application was completed through a series of correspondence and documents furnished by the applicant on January 12, 2007 (DIN 42248), through March 4, 2015 (DIN 67242). The correspondence and documents consist of the following SWMD database documents:

67242	03/04/15	Permittee Submittal of Response to NODs for the Major Permit Modification Application
66829	12/09/14	Permittee Submittal of Revised Major Permit Modification Application
66791	11/24/14	Permittee Submittal of Revised Geotechnical and Hydrogeological Investigation Report
66670	10/29/14	Certificate of Need from Judge Carney
66264	07/18/14	Email from Paul Crawford of FTN for new Groundwater Monitoring System Layout
65781	04/02/14	SWMD Review of Ambient Groundwater Chemistry and Alternate Source Demonstration (ASD) Memo
65677	03/18/14	SWMD Review of the proposed Revise Groundwater Sampling and Analysis Plan
65329	12/17/13	Memo from FTN regarding Ambient Groundwater Chemistry and ASD Sampling
65277	11/27/13	Permittee Submittal of Revised Groundwater Sampling and Analysis Plan
65409	05/02/13	Email from Benjamin Jones, Chief of SWMD, to Paul Crawford of FTN Regarding Responses to NODs
63984	02/28/13	SWMD Letter Regarding Ambient Groundwater Chemistry and ASD
63981	02/27/13	SWMD NOD Letter for Revised Major Modification Permit Application
63016	08/15/12	Letter from ADEQ Director to Permittee Regarding Seasonally High Groundwater
63011	08/14/12	Permittee Submittal of Revised Permit Modification Application
62215	04/17/12	SWMD Follow-up Letter to Initial NOD Letter for Permit Modification Application
61773	02/13/13	Permittee Proof of Publication of the Notice of the Permit Modification Application
61604	01/25/12	SWMD Email to Paul Crawford of FTN Concerning Shallow Groundwater Investigation
61640	01/23/12	Permittee Response to Initial NOD for Major Modification Permit Application
61304	12/01/11	SWMD NOD for Major Modification Permit Application
61075	10/19/11	SWMD Letter Stating that the Permit Application is Administratively Complete
59852	05/02/11	Initial Submittal of Major Modification Permit Application from Permittee
54637	02/11/09	Email from SWMD to Paul Crawford of FTN Regarding Seasonally High Groundwater
54055	11/04/08	SWMD Review of Modified Workplan for Determining Shallow Groundwater Conditions at the Mississippi County Landfill Class1 and Class 4 Expansion Areas

54027	10/31/08	Permittee Submittal of Modified Workplan for Investigation of Shallow Groundwater for the landfill expansion at Mississippi County
53902	10/09/08	Permittee Submittal of Discussion Topics for Meeting with ADEQ for the Mississippi County Class 1 Landfill
53254	07/17/08	SWMD Approval of Revised Proposed Workplan for Determining Shallow Groundwater Conditions
53241	07/11/08	Permittee Submittal of Revised Workplan for Investigating Shallow Groundwater Conditions at the Expansion Area for the Class1 and Class 4 Landfills at Mississippi County
53065	06/24/08	SWMD Comments on Proposed Workplan for Determining Shallow Groundwater Conditions
52997	06/20/08	Permittee Submittal of Workplan for Investigating Shallow Groundwater Conditions at the Expansion area for the Class1 and Class 4 Landfills at Mississippi County
44671	02/28/07	SWMD Pre-Site Evaluation Report for Mississippi County Class 1 LandfillProposed Lateral Expansion Area
42584	01/24/07	SWMD Notice of Submittal of Administratively Complete Pre-Application for Class 1 and Class 4 Landfill Expansions at Mississippi County
42594	01/24/07	SWMD Approval of the Proposed Workplan for the Geotechnical and Hydrogeologic Investigation of the Mississippi County Class1 and Class 4 Landfill.
42461	01/19/07	Permittee Submittal of Workplan for Geotechnical and Hydrogeological Investigation for Expansion of Mississippi County Class 1 Landfill
42248	01/12/07	Permittee Submittal of Pre-Application for Permit Modification for Mississippi County Class 1 Landfill

Condition No.	Part I: Landfill Permit Conditions Rationale
1	This is a general summary of the permit provisions, authorizations, and procedures. The permit may be placed in void status when the facility is closed out and has completed post-closure care in accordance with the provisions of approved plans and Regulation 22. [Regulation 22.309]
2	Financial assurance is required based on updated closure cost estimates. [Regulation 22.1402 and Regulation 22.1403]
3	Class 1 landfills may only accept eligible waste as defined by 22.102 and include special materials outlined by Regulation 22.701-708.
4	Construction sequences must be followed to ensure accuracy of facility plans and schedules. Importantly, fill progression must be followed to ensure accuracy of facility closure cost estimates used for establishment of financial assurance.
5	This permit condition establishes minimum standards and certification requirements of the approved bottom liner system configuration for the landfill. Site specific design specifications must also be followed.
6	Regulation 22.426 requires establishment and maintenance of survey control system at the landfill site.
7	This permit condition identifies the approved Hazardous/Unauthorized Waste Exclusion Plan for the landfill as required by Regulation 22.412 and Regulation 22 Chapter 7.

Condition No.	Part I: Landfill Permit Conditions Rationale
8	This permit condition identifies the approved Explosive Gas Monitoring System and Plan as required by Regulation 22.415.
9	This permit condition identifies the approved Operating Plan and Narrative for the landfill as required by Regulation 22.
10	This condition identifies the approved CQA Plan for the landfill.
11	This permit condition identifies the approved Closure and Post Closure Care Plan for the landfill as required by Regulation 22.1301 and 22.1302.
12	This condition specifies the leachate collection removal and leachate storage systems shall be monitored and operated such that free flowing conditions are maintained based on the citations provided. [22.429]
13	In accordance with Section 22.411 of Regulation 22 and with Regulation 27 licensed on-site landfill operators shall be provided.
14	This permit condition details the approved landfill plans for the facility. Any changes to the plans listed may require a modification to the facility permit according to provisions of Regulation 22 Chapter 3 or 4.
15	This condition restricts the disposal of bulk liquid waste at the facility. [22.420]
16	Measures to control and prevent storm water run-on through or into the active disposal area must be provided and the facility shall comply with water division permits. [22.418,419, 427]]
17	Concerns the use of appropriate erosion and sediment control measures to mitigate the borrow sites and soil stockpiles and other potential erosion areas to the extent possible. [22.411(h)]
18	This permit condition requires the use of litter control fences or other litter control measures to be implemented for the control of blowing litter. [22.411(h)]
19	Daily or more frequent cover to prevent vectors, odors, fire, litter and scavenging is required by 22.413. Alternative daily cover must comply with Department guidelines and include specific written operating procedures.
20	In accordance with 22.309 the final grades and elevations shown on the plans shall not be exceeded at any time. Requirements for a timely closure, proper construction of the final cover system and Certification Report in accordance with 22.1301.
21	This permit condition authorizes one (1) active disposal area in accordance with cited regulation. Authorization for a second working face may be granted provided adequate justification.
22	Annual Engineering Inspection Reports (AEIRs) are required by Regulation 22.423.

Condition No.	Part I: Landfill Permit Conditions Rationale
23	Requires untreated leachate from the landfill to be sampled, at a minimum, at the same frequency and for the same parameters as ground water monitoring except that turbidity is not a required parameter per Regulation 22.429(l). Quarterly sampling is required by Regulation 22.1205(d)(2) and an expanded list of sampling parameters during assessment monitoring is required by Regulation 22.1205(b). This permit condition supersedes any language within the Operating Plan, Leachate Management Plan, or the Closure and Post-Closure Care plan which may limit sampling frequency and constituents should the facility enter assessment monitoring. The wording used to describe the frequency and parameters for leachate sampling in the Leachate Management Plan is not the same as the wording which describes the frequency and parameters for leachate sampling in the Operating Plan, and the wording in the Leachate Management Plan does not include any potential changes in frequency or parameters which may be required should the facility enter assessment monitoring. The wording used in the Operating Plan is more comprehensive; as it includes the potential change of frequency and parameters should the facility enter assessment monitoring and includes guidance references to Regulation 22.
24	Requires the permittee to visually inspect the expansion area for sand blows prior to the construction of each new cell.

Condition No.	Part II: Facility Groundwater Permit Conditions Rationale
25	Defines "facility" per Regulation 22.
26	The groundwater monitoring system at the facility will be established, maintained, and monitored per the standard provisions of Regulation 22. A general summary of Regulation 22.1202(a). Requires the permittee to utilize and maintain a ground water monitoring system to adequately monitor potential impacts on local ground water supplies from facility operations.
27	The condition requires the permittee to perform quarterly sampling for the establishment of background based on conformance with statistical procedures. [Regulation 22.1203(f)]. This is consistent with Reg. 22.1203(e) which states a **minimum** of four (4) samples from each well. Background concentration are not to be affected by leakage from the facility per Regulation 22.1202(a)(1).
28	The current sampling and analysis plan states that the facility will be performing intrawell statistics. The facility will not be allowed to use the data from monitoring wells north of Ditch No. 31 as background unless it can be shown that the data from the well is statistically the same as concentrations known to be background that are not affected by the facility. The statistical calculations need to use appropriate methods from the Unified Guidance or the most current relevant EPA statistical guidance publication. See Regulation 22.1202(a)(1) and Regulation 22.1203(g)(6&7).
29	The ground water monitoring program at the facility shall follow the provisions of Regulation 22.

Condition No.	Part II: Facility Groundwater Permit Conditions Rationale
30	References to the proposed well identification numbers and well locations for this facility (Regulation 22.1202(a)). Point of Compliance is defined in Regulation 22.424(d). Survey of all monitoring wells and piezometers is required due to small differences in groundwater levels across the site. The EPA Solid Waste Disposal Facility Criteria (EPA530-R-93-017) states that wells need to be resurveyed ever 5 years. New wells required to be surveyed by Regulation 1103(g).
31	Requires the facility to retain piezometers, FTN B-7, FTN B-11, and FTN B-15 for the use of groundwater level measurements for potentiometric surface maps for groundwater monitoring reports. Groundwater levels around the Mississippi County landfill are very flat - due to high permeability. The three piezometers will help define groundwater elevations and flow directions at the site due to variable flow directions. Regulation 22.1203(d) and 1203(k) requires the measurement of groundwater elevations in each well to determine direction of groundwater flow. Regulation 22.1202(d) allows for a site-specific design of the monitoring systems based on groundwater flow direction including seasonal and temporal fluctuations in groundwater flow.
32	The facility must follow an approved ground water sampling and analysis plan that complies with Regulation 22.1203.
33	States detection monitoring parameters per Regulation 22.1204(a) and (d).
34	Requires the ground water monitoring wells to be installed according to appropriate ASTM standards or EPA-530-R-93-017 per Regulation 22.1103(a) and work quality and construction methods to be certified by the supervising professional as required by Regulation 22.1103(f). Requires Department approval of workplans for well installation and decommission and submission of reports upon completion of workplans per Regulation 22.1103(f).
35	Requires the permittee, following monitoring well installation, to re-establish hydraulic conductivity to ensure retrieved water samples are representative of formation ground water quality at this site [Regulation 22.1103(a)].
36	Requires the permittee to sample at least semi-annually per Regulation 22.1204(b). Requires submittal of a ground water monitoring report within 90 days from date of monitoring event per Regulation 22.1203(k). Specifies semi-annual and quarterly monitoring intervals. Quarterly sampling during background sampling is required by Regulation 22.1203(e). Quarterly sampling during assessment monitoring is required by Regulation 22.1205(d)(2). This permit condition supersedes any language in the Closure and Post Closure Care Plan which may limit the facility to semi-annual groundwater sampling should the facility enter assessment monitoring during that time.
37	Requires the permittee to have qualified personnel trained in the proper sampling and measuring techniques to take water samples and water level readings. Water level measurements must be taken prior to purging and sampling the monitoring wells, and uses the resulting data to determine the rate and direction of ground water flow in and around the facility as required by Regulation 22.1203(d).
38	Requires sample analyses to be completed by an ADEQ approved third-party laboratory per the "State Environmental Laboratory Certification Program Act (Ark. Code Ann. § 8-2-201 et Seq.)." Requires direct submittal of all analytical results from the contract or independent third party laboratory to the Department per Regulation 22.1203(j)(4).
39	Parameter concentrations above the MDL must be reported [Regulation 22.1203(h)(5)].

Condition No.	Part II: Facility Groundwater Permit Conditions Rationale
40	The permittee must select a statistical method approved by the Department for evaluating ground water monitoring data in conformance with the requirements of Regulation 22.1203(g), (h), and (i).
41	Statement that all groundwater statistical methodologies will comply with Regulation 22. In addition, the methodologies will be consistent with the EPA "Unified Guidance" or the most current, relevant EPA statistical guidance publication - see Regulation 22.1203(g)(6&7). The statistical methods and techniques used in the statistical evaluation must be clearly explained and referenced as part of the GWMR documentation and discussion in Regulation 1203(k).
43	Requires the facility to submit groundwater monitoring reports that comply with Regulation 22.1203(k).
43	Summary of Regulation 22.1204(c).
44	Summary of Regulation 22.1205(g).
45	This permit authorizes the permittee to construct and operate a solid waste disposal facility and a Leachate Treatment System, which allows the facility to land apply treated leachate collected from Mississippi County Class 1 landfill. All ground water monitoring requirements for this facility are regulated by Chapter 12 of APC&EC Regulation 22 (Reg. 22.12). However, the land application sites do not rely on liners, as required by Reg. 22 for landfill and leachate storage ponds, to prevent known pollutants from entering ground water. Therefore, if the permittee determines that there is a SSI (or decrease for pH) over background values for one or more of the constituents or contamination of groundwater beyond the solid waste boundary at any monitoring well for the land application sites, the facility shall cease all land application activities and abide by Condition 46 of Part II of the permit.
46	In order to protect ground water (waters of the State), additional measures must be taken when a SSI or an exceedance of the MCLs of Primary Drinking Water Standards, as listed in 40 C.F.R. Part 141, has been determined from the land application activities. This requirement was adapted from Reg. 22.1204(c).

PART III: Construction and Operation of Leachate Treatment System with Land Application of Treated Leachate Permit Conditions Statement of Basis

Condition No.	Permit Requirements
III.1	This condition was added to the permit in order to ensure that treatment processes and land application methods described in the permittee's WMP are consistent with the facility's activities.
III.2	In order to ensure the treated leachate that is being land applied does not meet the characteristics of a hazardous waste in accordance with APC&EC Regulation 23 Part 261, the permittee shall certify the treated leachate prior to the first application and annually thereafter.

Table I Condition 3 of Part III	Leachate Limits and Monitoring Requirements

Table I Condition 3 of Part III	Leachate Limits and Monitoring Requirements
Monitoring Frequency	The monitoring frequency of once every other month when land application is allowed (April 1st-October 31st) with a minimum of 4 samples to be collected per year is to ensure that a representative sample of treated leachate being land applied is measured and recorded. In order to ensure over application of contaminates does not occur, all loading rates (nitrogen application rate, nutrient loading rate, and metal loading rate) shall be calculated and recorded with each application event. The parameters measured on a monthly basis can be compared to the soil parameters if a problem arises to determine if the land application is the pollutant source. In order to ensure the permittee knows the amount of plant available nitrogen applied and to prevent over application of nutrients to the land, the Water Division will require the total volume of treated leachate applied and the nitrogen application rate to be measured and recorded prior to each application.
Maximum Concentrations	Based on the analysis submitted to ADEQ Solid Waste Division and Water Division leachate is known to contain these parameters. Maximum concentration limits and reporting requirements for the treated leachate have been included to ensure the treated leachate being land applied does meet the characteristics of a hazardous waste in accordance with APC&EC Regulation 23 Part 261. Any treated leachate characterized as a hazardous waste shall be properly disposed of in accordance with state laws and regulations. APC&EC Regulation 23 Part 261 does not have a limit for copper, nickel, or zinc. Therefore, the maximum concentration limits for copper and zinc are adapted from the National Secondary Drinking Water Regulation and the maximum concentration limit for nickel is adapted from Tennessee's Design Guidelines for Wastewater Treatment Systems Using Spray Irrigation.
Metal Limits	Based on the analysis submitted to ADEQ Solid Waste Division and Water Division leachate is known to contain these parameters. In order to protect the environment the Water Division adapted these limits from MPCA Land Treatment of Landfill Leachate: April 2011. In accordance with MPCA Land Treatment of Landfill Leachate: April 2011, these limits are considered to be high range values for the corresponding parameters and intended to limit application to prevent a potential groundwater issue.
Cumulative Pollutant Loading Rate	Based on the analysis submitted to ADEQ Solid Waste Division and Water Division leachate is known to contain the listed parameters. In order to minimize the potential for the accumulation of metals in soils to concentrations that could have adverse effects on the environment, the Water Division adapted the Cumulative Pollutant Loading Rates (CPLRs) from EPA's risk assessment Title 40 of the Code of Federal Regulations (C.F.R.) Part 503. This assessment considered 14 different pathways of exposure to highly exposed individuals, including humans, animals (including small organisms) and plants. These limits minimize the potential for the accumulation of metals in soils to concentrations that could have adverse effects on the environment.
Total Solids	This parameter is required to convert effluent analysis values between a wet and dry basis. Also, this parameter is required to ensure the permittee is not land applying waste that is considered to be solid material.
Electrical Conductivity	The analysis of electrical conductivity is the measurement of the salinity of the treated leachate. Over application of salt could affect plant growth. According to *Wastewater Engineering Treatment and Reuse, 4th Edition*, salts tend to concentrate in the root zone. With an increase in soil salinity in the root zone, plants expend more of their available energy on adjusting the salt concentration within the tissue to obtain needed water from the soil. Consequently, less energy is available for plant growth. Monitor and Report of the

Table I Condition 3 of Part III	Leachate Limits and Monitoring Requirements
	treated leachate will be used as a comparison to the soils electrical conductivity limit. This data may be used to establish a limit on the leachate if necessary.
Nitrogen Compounds	These concentrations are required to calculate the plant available nitrogen to comply with Condition 4.D.2 of Part III of the permit.
Phosphorus and Potassium	These constituents are required for plant growth and are monitored to ensure crop nutrients are provided. The phosphorus should be monitored in order to determine whether nutrients are at risk of runoff the site.
pH	The limit was added to the pH of the treated leachate to ensure that it will not negatively impact the pH of the soil in order to prevent the leaching of metals to groundwater. If the treated leachate is sufficiently acidic or alkaline to move the soil pH, the land applied treated leachate could hamper the cover crop's growth. Acidic treated leachate promotes leaching of metals, because most metals are more soluble under acidic conditions. Once in solution, the metals would be available for plant uptake or could migrate to groundwater. Alkaline conditions inhibit movement of most metals. However, extreme alkalinity impairs the growth of most soil microorganisms and can increase the mobility of some metals. These limits were adapted from APC&EC Reg. 2 and EPA document Protecting Ground Water - Designing a Land Application Program. Additional justification can be found for soil pH.
Sodium Adsorption Ratio (SAR)	SAR is a measure of sodicity hazard commonly used to evaluate irrigation water and soils for agricultural use. Because the treated leachate will be land applied, the SAR needs to be evaluated to show the treated leachate is acceptable for use. According to the *Practical Handbook of Disturbed Land Revegetation* (Munshower, 1994), when the SAR rises above 18 in the waste, serious physical soil problems arise and plants have difficulty absorbing water. The Water Division has decided to require the limit of 18 for the treated leachate to reduce the risk of a single application from SAR exceeding the soil limits.
Volume of Treated Leachate Applied	The total volume of treated leachate applied shall be measured and recorded daily in order to calculate the loading rates.
Nitrogen Application Rate	Land application of the treated leachate covered under this permit is restricted by the nitrogen application rate. The nitrogen application rate is the amount of nitrogen applied to the land in pounds/acre/year. Using the nitrogen components of the treated leachate analysis and the volume of treated leachate applied, the nitrogen application rate shall be calculated using the equations provided in Condition 4.D.2 of Part III of the permit. In order to ensure the application of treated leachate will not exceed the Plant Available Nitrogen (PAN) limit for the cover crop identified in Condition No. 4.D.2 of Part III of the permit, the nitrogen application rate must be calculated prior to each application.

Table II Condition 3 of Part II	Soil Limits and Monitoring Requirements
Electrical Conductivity	The measurement of the electrical conductivity (EC) of the soil is used to determine the salinity or the amount of salts in the soil. In *Soils: an Introduction to Soils and Plant Growth*, an EC of 4 mmhos/cm or less is considered normal. Once the EC exceeds 4 mmhos/cm, the soil becomes Saline. Saline soils are known to reduce plant growth and affect soil permeability. If results indicate that soil concentrations have increased, the Water Division may require cessation of land application activities, further testing, or remediation activities.

Table II Condition 3 of Part II	Soil Limits and Monitoring Requirements
pH	The acidic limit of 5.7 was adapted from the University of Arkansas Cooperative Extension Service (UAEX) Self-study Guide 8: Soil Fertility Management in Pastures Essential Nutrient for Plant Growth to maintain an optimal pH for plant growth. Also when the pH becomes too low, heavy metals are more soluble and therefore more susceptible to leaching to the groundwater.
Sodium Adsorption Ratio (SAR)	In addition to evaluating SAR in the treated leachate, the SAR should be monitored in the soils of the application sites. According to the *Practical Handbook of Disturbed Land Revegetation* (Munshower, 1994), when the SAR rises above 12 to 15 in the soil serious physical soil problems arise and plants have difficulty absorbing water. According to the 2009 ADEQ Landfarm Study, University of Arkansas soil scientist, Dr. Kristofor Brye, recommends that the SAR in soil be less than 12. SAR values above this range are considered undesirable conditions for plant growth. High sodium content disperses the soil and causes it to crust. Sodium also negatively influences the ability of water to infiltrate the soil. If results indicate that soil concentrations have increased, the Water Division may require cessation of land application activities, further testing, or remediation activities
Cation Exchange Capacity, Nitrate-Nitrogen, Phosphorus, and Potassium	These parameters are indicators of soil quality. The chemical condition of soil affects soil-plant relations, water quality, buffering capacities, availability of nutrients and water to plants and other organisms, mobility of contaminants, and some physical conditions. (USDA Natural Resources Conservation Service "Indicators for Soil Quality Evaluation" April 1996.) Reporting requirements are included to verify that problems from over-application of treated leachate are not occurring.
Metals	The list of metal cations was adapted from 40 C.F.R. Part 503 for the land application of sewage sludge. Limits were not established due to the variability of analyzing the concentrations of these metals. Reporting requirements are included to verify that metals from land application of treated leachate is not being applied at a rate that causes accumulation of metals to levels that could have adverse effects on the environment. If results indicate that soil concentrations have increased, the Water Division may require cessation of land application activities, further testing, or remediation activities.

Condition No.	Specific Conditions – General Requirements
III.4.A.1	Mississippi County Landfill is only authorized to use an irrigation system (retracting water reel) to land apply treated leachate from Mississippi County Class 1 Landfill only. No other waste has been reviewed and authorized by this permit.
III.4.A.4	In order for the leachate to received adequate treatment, the leachate shall be properly treated prior to land application. This permit only allows the land application of treated leachate. Bypassing treatment would be a violation of this permit.
III.4.A.6	Any activity occurring under this permit shall not discharge to the waters of the State. A discharge from this site may result in pollutants entering the waters of the State, which is a violation of Ark. Code Ann. § 8-4-217. In order to prevent a discharge from the permitted operation, the facility shall control the rate of application to prevent pooling, ponding, overland flow, or runoff.
III.4.A.7	In order to maintain complete records of the disposal of the treated leachate or solids associated with the leachate system, the facility shall maintain records of any type of material that is shipped from the facility.

Condition No.	Specific Conditions – Construction of Leachate Treatment Pond
III.4.B.1	The Water Division will require the permittee to install an inlet control structure for

Condition No.	Specific Conditions – Construction of Leachate Treatment Pond
	maintenance of the ponds or in case of a pond failure. This requirement was adapted from MPCA Land Treatment of Landfill Leachate: April 2011.
III.4.B.4	The Water Division will require the permittee to install a drainage layer with leak detection in order to ensure the Leachate Treatment Pond Liners are operating properly and to be protective of the groundwater, which is consider waters of the State. This requirement was adapted from MPCA Land Treatment of Landfill Leachate: April 2011. See 6.B.iii.a for more information.
III.4.B.5 and 6	An 8 foot high fence and lockable gate shall be installed in order to protect the Leachate Treatment Ponds liners in order to keep out debris, wildlife, and trespassers. This requirement was adapted from Recommended Standards for Wastewater Facilities: 2004 Edition (Ten State Standards) and MPCA Land Treatment of Landfill Leachate: April 2011.
III.4.B.7	The Water Division will require the permittee to display a permanent sign at all entrances of the facility to identify the nature of the facility and who to contact with concerns. This requirement was adapted from Recommended Standards for Wastewater Facilities: 2004 Edition (Ten State Standards).
III.4.B.8	This condition is added to the permit in order to ensure the Leachate Treatment Ponds are built in accordance with the facility's Waste Management Plan.

Condition No.	Specific Conditions – Leachate Treatment Pond Requirements
III.4.C.1	Monitoring of the leak detection is required to ensure the Leachate Treatment Ponds' liners are not leaking more than the allowable rate in accordance with for Wastewater Facilities: 2004 Edition (Ten State Standards). If the ponds are leaking at a higher rate than 500 gallons per day per acre, which would be exceeding the acceptable leakage rate that can be found in for Wastewater Facilities: 2004 Edition (Ten State Standards), the permittee will be required to repair any damage to the Leachate Treatment Ponds' liners.
III.4.C.2	Freeboard is required to protect the integrity of the levee, in addition, ensure the Leachate Treatment Ponds have adequate storage available to prevent the waters overflowing the embankments during rainfall events. The limit of three (3) feet was adapted from the Recommended Standards for Wastewater Facilities: 2004 Edition (Ten State Standards) Section 93.415 and from MPCA Land Treatment of Landfill Leachate: April 2011.
III.4.C.3	The staff gauge is required to prevent the waste level from exceeding the freeboard limit and for the Leachate Treatment Ponds have adequate storage available to prevent the waters overflowing the embankments during rainfall events and to monitor the pond's freeboard level. Also, the pond level gauge is required to determine the volume of fluids in the holding pond at any point in time. This requirement was adapted from the Recommended Standards for Wastewater Facilities: 2004 Edition (Ten State Standards) Section 93.56.
III.4.C.4	The depth of the sludge shall be measured on a quarterly basis to ensure the Leachate Treatment Ponds have sufficient capacity for treatment of the leachate. The Leachate Treatment Ponds design and calculations in the March 13, 2015 WMP only allowed for one foot of storage for the sludge; therefore, the sludge shall be removed when the depth is greater than one foot. The depth shall be reported with the annual report to ensure the sludge is being properly managed by the permittee. This requirement was adapted from MPCA Land Treatment of Landfill Leachate: April 2011.
III.4.C.5	Upon removal of the sludge, the Water Division will require the permittee to inspect the Leachate Treatment Ponds' liners for damage in order to prevent a leak in the future.
III.4.C.6	In order to ensure the Leachate Treatment Ponds' liners are being properly maintained and inspected, the Water Division will require the liner inspection to be certified by a professional engineer.

Condition No.	Specific Conditions – Leachate Treatment Pond Requirements
III.4.C.7	This requirement was adapted from Recommended Standards for Wastewater Facilities: 2004 Edition (Ten State Standards) Section 93.417.
III.4.C.8	In order to ensure the levees are being properly maintained, the Water Division will require the levees to be inspected semi-annually.

Condition No.	Specific Conditions – Land Application of Leachate
III.4.D.1	Conditions of the permit require a visual inspection (i.e. no pooling or ponding) that can only be verified with an operator that is present during the application. This is done in order to ensure the irrigation system is operating properly and to protect waters of the State, the Water Division will require the permittee to be present during all application events.
III.4.D.2	The Water Division has provided the proper Plant Available Nitrogen (PAN) equation in order to ensure the permittee does not exceed the nitrogen uptake of the cover crop. Land application of treated leachate is limited by the nitrogen uptake of the cover crop and the PAN. The application rate is designed to provide the amount of nitrogen needed by the crop or vegetation and reduce the risk of nutrients running off into the waters of the State.
III.4.D.3	The Water Division has provided the proper Cumulative Pollutant Loading Rate equation in order to ensure the permittee does not exceed the metal loading rate. Land application of treated leachate is limited by the metal loading on the soils. The application rate is designed to be protective of the environment and has been adapted from 40 C.F.R. Part 503.
III.4.D.4	In order to ensure the permit does not exceed the hydraulic loading capacity of the land application sites, the application rate shall not exceed the hydraulic loading rates provided in the permittee's WMP.
III.4.D.5	In order to ensure proper uptake of nitrogen, the land application site shall maintain 100% vegetative coverage with a minimum of 80% density. Furthermore, the vegetative coverage and density is also used for stabilization purposes to reduce the risk of soil erosion and runoff.
III.4.D.6	This acreage is the only acreage that was fully represented in the permittee's WMP.
III.4.D.7	In order to avoid over application to one area of the land application site, the treated leachate shall be distributed evenly over the entire area to be irrigated. If the treated leachate is over applied to one portion of the application site, there is potential for concentration on that portion of the site and the treated leachate to runoff to the waters of the State.
III.4.D.8	In order to protect waters of the State, additional measures must be taken to ensure contamination via runoff is prevented. Topography of the land application area affects the potential for runoff and erosion. The limit was adapted from the *Wastewater Engineering: Treatment and Reuse, 4th Edition*, Table 14-51 as an acceptable maximum slope for the acceptable application of leachate.
III.4.D.9	In order to protect waters of the State, additional measures must be taken to ensure contamination via runoff is prevented. Therefore, the Water Division adapted the associated conditions from APC&EC Regulation No. 5.406(B) that governs the liquid animal waste management systems. Land application of treated leachate is prohibited during a precipitation event or when significant precipitation is imminent. When land applying treated leachate there is a critical time to prevent runoff to the waters of the State, which is during land application and right after land application before the treated leachate has had time to absorb into the soil. In order to protect the environment, the Water Division defined the word "imminent" to mean greater than a 30% chance of precipitation predicted by the nearest National Weather Service station. When the National Weather

Condition No.	Specific Conditions – Land Application of Leachate
	Service station predicts greater than 30% chance of precipitation the Water Division believes there is a good chance of rain which could cause pollution to the waters of the State. Also, to ensure the permittee will not land applying during precipitation, the operator must be present during any period of land application.
III.4.D.10	In order to protect waters of the State and show compliance with no pooling or ponding, additional measures must be taken to ensure contamination via runoff is prevented. Therefore, land application of treated leachate is prohibited when the soils are saturated. In order to determine if the land application site is saturated, the Water Division will require the permittee to measure the saturation of the soil.
III.4.D.11 and 12	Minimum buffer distances are required between land application sites and areas that may be vulnerable to water pollution in order to minimize the risk of nutrients or pollutants from leaving the field and reaching surface waters. Buffer distances were adapted from APC&EC Regulation 5.406(D) and generally accepted scientific knowledge and engineering practices.
III.4.D.13	In order to verify that the permittee will be applying treated leachate within all of the required boundaries of the land application site(s), the Water Division will require all boundaries to be flagged prior to and be present during any land application events.
III.4.D.14	In order to ensure the permittee's irrigation system is operating properly, the system will need to be inspected by the facility before, during, and after each land application event. The Water Division will require the permittee to keep records of the inspections to verify the system is being monitored properly in order to prevent a discharge to the waters of the State.
III.4.D.15	In order to ensure the permittee is operating properly, the operator shall inspect the land application sites before, during, and after each land application event. The Water Division will require the facility to keep records of the inspections to verify the system is being monitored properly in order to prevent a discharge to the waters of the State.
III.4.D.16	These records shall be kept to ensure land application equipment is being maintained and the site is being monitored.

Condition No.	Specific Conditions – Sampling
III.4.E	The sampling requirements were included in the permit to ensure the samples of the treated leachate and soils are collected in an appropriate manner and to ensure representative samples are collected. The Department will require the permittee to sample, report, and obtain approval prior to the initial application of treated leachate.

Condition No.	Specific Conditions - Reporting
III.4.G	This condition is added to the permit in order for the Water Division to verify that the permittee is abiding by the permit conditions. The Water Division annual report shall be submitted by March 31st of the year following the monitoring

Condition No.	Specific Conditions – Closure Plan for the Leachate Treatment Ponds and Land Application System
III.4.H	In order to ensure the Leachate Treatment Ponds and Land Application Sites are properly closed, the permittee will need to submit a Closure Plan prior to the proposed termination of the storage, treatment, and land application of leachate.

Condition No.	Part IV: Facility General Conditions Rationale
1	Under the authority provided by 22.308 and 22.309 the Department may revoke or modify the permit in the event the facility is no longer in compliance with the Arkansas Solid Waste Management Act, Regulation 22, or other applicable regulations.
2	Under the authority provided by 22.308 the Department may modify the permit to require compliance with updates to the Arkansas Solid Waste Management Act, Regulation 22, or other applicable regulations.
3	This condition discusses the limited liability of ADEQ in issuance of the permit and the reliance on the accuracy and suitability of the information provided by the applicant's professional and responsible officials. [Regulation 22.301 (h) and (i) and Regulation 8]
4	Payment of permit fees in accordance with Regulation 9 and Regulation 11 are mandatory. Permits may be revoked for failing to pay fees according to 22.309.
5	Concerns permit transfer and disclosure is in accordance with Regulation 8.
6	NPDES permit(s) and Storm Water Pollution Prevention Plan shall be followed in accordance with Sections 22.418, 22.419 and 22.427 of Regulation 22 and the Clean Water Act.
7	The facility shall follow the air criteria requirements of Regulation 22.416 including the requirements of the State Implementation Plan of the Clean Air Act. Also, the open burning of solid waste is prohibited and establishment of fire safety procedures is required.
8	Appeal of the final permit is available in accordance with Section 22.306 of Regulation 22 and in accordance with Regulation 8. Provisions regarding severability are in accordance with Section 22.1601 of Regulation 22.
9	Facility construction and operation must follow established regulations even in the event of a conflict between the application documents and the regulations. Adherence to the regulation is mandated by A.C.A. 8-6-205.
10-25	Standard Conditions have been included in this permit based on generally accepted scientific knowledge, engineering practices and the authority of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 et seq.).

Response to Comments

On May 4, 2015, the Arkansas Department of Environmental Quality issued a draft permit associated with the construction and operation of the Mississippi County Class 1 Landfill. During the thirty-day (30-day) comment period the ADEQ received comments from the applicant only (Document Number 67643). The following are the SWMD responses to the applicant's comments.

Part I: Landfill Conditions

Comment 1:

Draft Condition No. 8 – The last sentence currently reads, "New gas monitoring probes for monitoring Phase 2 shall be installed prior to waste disposal in Phase 2 and in accordance with approved plans."

Mississippi County proposes that this sentence be revised to: "New gas monitoring probes for monitoring Phase 2 shall be installed near Cells 15 and 16 prior to waste disposal. The remaining Phase 2 gas probes shall be installed thereafter, at a minimum, as each waste cell is constructed." This revision will allow Mississippi County to install the gas probes in Phase 2 as filling operations move southward.

Response to Comment 1:

Final Condition No. 8 – The last sentence is changed to: "*Initially, gas monitoring probes GMP-1 through GMP-10 and GMP-12 shall be installed. Probes GMP-11 and GMP-13 shall be installed when Cell 17 is constructed. Probes GMP-14 through GMP-16 shall be installed when Cell 23 is constructed.*"

Part II: Facility Groundwater Conditions

Comment 2:

Draft Condition No 28 – The last paragraph, Mississippi County requests that the following phrase to be stricken: "and piezometers (in the following Permit Condition)." See Draft Condition No. 29 below for rationale to strike this text.

Response to Comment 2:

This phrase will be retained in Final Condition 30. See response to Comment 3 for rationale.

Comment 3:

Draft Condition No 29 – Mississippi County requests that this entire condition be removed from the permit.

Mississippi County has submitted a work plan to plug and abandon these piezometers because they were not constructed as permanent wells. The added expense to upgrade and maintain them for long-term use is an unjustifiable expense, particularly because the additional data that they provide do not significantly change how the potentiometric surface map is drawn. After the installation of the new wells, there will be a total 15 wells around the proposed Class 1 Landfill area, leachate treatment/storage ponds, and land application area. The 15 wells will provide a sufficient number of monitoring points to determine the direction of flow across the future permitted footprint as required by Regulation No. 22.1103(k).

Response to Comment 3:

Groundwater elevations measured at the site fluctuate seasonally approximately 15 feet. This fluctuation creates quite different groundwater flow patterns during different times of the year. Though these groundwater seasonal changes are large, the groundwater elevations for each snapshot in time are very small between wells – due to high permeability. These three piezometers will help define groundwater elevations and determine the variable flow directions at the site. The wells where the other groundwater elevations will be measured are in a ring around the site. The three piezometers in this permit condition are in the middle of that ring and will provide valuable information about flow directions until they are required to be removed due to cell construction – many years in the future. These three piezometers can absolutely change how the potentiometric surface maps of the facility are drawn. Without these piezometers there is a large area in the center with no groundwater elevation information. The information obtained from the piezometers can be valuable if an impact to groundwater is seen in the future. Regulation 22.1203(d) and 1203(k) requires the measurement of groundwater elevations in each well to determine direction of groundwater flow. Regulation 22.1202(d) allows for a site-specific design of the monitoring systems based on groundwater flow direction including seasonal and temporal fluctuations in groundwater flow.

Comment 4:

Draft Condition No 42 – Strike "cease all land application in accordance with Draft Condition 45 below and."

Inclusion of this phrase does not take into consideration of where a release may have occurred or its source and has the potential to force an arbitrary shutdown of land application operations. Mississippi County will follow Regulation No. 22.1105(g) should it enter into assessment monitoring and find that any assessment monitoring parameter is at a statistically significant level with respect to an established groundwater protection standard.

Response to Comment 4:

Final Condition No. 44 of Part II has been revised as requested.

Comment 5:

Draft Condition No 43 – Mississippi County requests that this condition be removed as part of the facility groundwater conditions on the basis that leachate sampling and analysis are not part of Regulation 22, Chapter 12 groundwater monitoring requirements. It should be part of Part I, Landfill Conditions along with other operation and maintenance conditions for the landfill.

Response to Comment 5:

The condition will be removed from *Part II: Facility Groundwater Conditions* and placed into *Part I: Landfill Conditions*. See Final Condition 23.

Comment 6:

Draft Condition No 44 – Mississippi County requests that this condition be removed as part of the facility groundwater conditions. The identification of suitable subgrade materials and any necessary improvements are not part of Regulation 22, Chapter 12 groundwater monitoring requirements. This condition is related to the construction of the landfill and belongs in Part I, Landfill Conditions along with other engineering and construction conditions.

Response to Comment 6:

The condition will be removed from *Part II: Facility Groundwater Conditions* and placed into *Part I: Landfill Conditions*. See Final Condition 24.

Comment 7:

Draft Condition No 45 – Mississippi County requests that this condition be replaced with the following:

The permittee shall cease all land application activities if groundwater assessment monitoring in any of the wells which monitor groundwater quality for the Land Application area (MW-19, MW-21, MW-22, and MW-23) indicates:

a. That one or more assessment monitoring parameters is determined to be at a statistically significant level above the groundwater protection standard established under Regulation 22.1205(h) or (i), and/or

b. *That the Secondary Maximum Contaminant Level for chloride (250 mg/L) is exceeded at a statistically significant level.*

Response to Comment 7:

This permit authorizes the permittee to construct and operate a solid waste disposal facility and a Leachate Treatment System, which allows the facility to land apply treated leachate collected from Mississippi County Class 1 landfill. All ground water monitoring requirements for this facility are regulated by Chapter 12 of APC&EC Regulation 22 (Reg. 22.12). However, the land application sites do not rely on liners, as required by Reg. 22 for landfill and leachate storage ponds, to prevent ground water from being contaminated. In order to prevent contamination in ground water, the Department will not remove the SSI or 40 C.F.R. 141 requirements from Draft Condition 45 of Part II. For further clarification, the Department will revise the Condition 45 to identify the ground water monitoring wells that have the potential for contamination from land application activities. See Final Condition 45.

Comment 8:

Draft Condition No 46 – Mississippi County requests that this condition be replaced with the following:

If land application is required to cease under Draft Condition 45 of Part II, the following actions listed below must be taken:

a. *Any disposal of treated leachate shall be in accordance with the Contingency Plan identified in the March 13, 2015 WMP,*
b. *The Landfill facility must implement Regulation 22.1205(g),*
c. *The permittee must receive written permission from the Director prior to any resumption of land application.*

Response to Comment 8:

Refer to the Response to Comment 7 for rationale. Final Condition No. 46 of Part II will not change.

Part III: Land Application and Leachate Treatment Pond Requirements

Comment 9:

Condition No. 3, Table I – According to the permit rationale, the maximum concentration values have been adapted from data included in a table titled "Concentrations of Inorganic Parameters in Minnesota Mixed Municipal Landfill Leachate." This table, developed by the Minnesota Pollution Control Agency, contains typical composition of leachate for multiple

inorganic parameters, and includes mid-range to high-range concentration values. Based upon our review of this table and the Table I permit limits, concentrations for copper and nickel were based upon high-range values and the concentration value for zinc was based upon mid-range values. The remainder of the Table I metal limits were based upon Toxicity Characteristic Leaching Procedure criteria. We concur with these limits; however, we believe that permit limits for copper, nickel, and zinc should be based upon more objective criteria in lieu of typical Minnesota leachate characteristics.

We are therefore requesting a limit for copper of 1.3 mg/L based upon the MCL in the National Primary Drinking Water Regulations. For zinc, we are requesting a limit of 5 mg/L based upon the National Secondary Drinking Water Regulations. The MCL for nickel was remanded in 1995. The proposed land application system design was based upon a nickel concentration of 0.34 mg/L from historical leachate analytical data, which is above the draft permit limit of 0.20 mg/L. In the EPA's "*2012 Guidelines for Water Reuse*", a nickel limit of 0.2 mg/L is recommended for agricultural reuse water quality. Because the proposed land application system has not been designed for agricultural purposes, we are requesting the Department consider a nickel limit of 0.4 mg/L. The State of Tennessee in their "*Design Guidelines for Wastewater Treatment Systems Using Spray Irrigation*" allows a maximum nickel concentration of 0.4 mg/L. The National Academy of Sciences has indicated that nickel can exhibit toxicity to plants in the range of 0.5 to 1.0 mg/L, with reduced toxicity at neutral or alkaline pH, and the requested limit for nickel is below this range.

Response to Comment 9:

Condition No. 3, Table I of Part III has been revised as requested.

Comment 10:

Condition No. 3, Table I – The draft Permit requires monthly monitoring of parameters listed in Table I. We are requesting that the monitoring frequency be reduced from monthly to quarterly monitoring with the ability to request the Department to reduce the frequency to semi-annual after five years of data acquisition. Historical leachate sampling data from the Mississippi County Landfill has been fairly stable with minor variations in leachate characteristics, and it is not believed that any significant change in treated leachate characteristics would be observed on a monthly basis. Mississippi County can provide the Department supporting lab analysis upon request.

Response to Comment 10:

The historical leachate analysis obtained from the monitoring of the landfill leachate will not provide appropriate data for the land application operation since the permittee will treat the

leachate by the means of two (2) Leachate Treatment Ponds prior to land applying. Since this is a new treatment system and the Department does not have data on the capability or variability of the treatment system, the treated leachate shall be monitored more frequently during land application operations. Based on permittee's March 13, 2013 Waste Management Plan and Condition 4.E.1 of Part III, land application shall only occur between April 1st–October 31st. If the Department reduces the monitoring frequency to quarterly, the permittee would only be required to monitor the treated leachate twice during land application activities. Therefore, the monitoring frequency will be reduced to once every other month when land application is allowed with a minimum of 4 samples to be collected per year. Monitoring at once every other month when land application is allowed would provide 20 data points after five (5) years, which should be sufficient data to reevaluate the monitoring frequency upon a modification request from the permittee.

Comment 11:

Condition No. 3, Table I – We are requesting clarification to footnote No. 2 of Table I to indicate that monitoring nitrogen and metal loadings prior to each land application event would not require additional sampling and analysis of the treated wastewater. We are proposing the following alternative footnote for the Department's consideration:

[2] *Shall use the most recent analysis to calculate Nitrogen Application Rate, nutrient loading, and metal loading. Additional samples and analysis are not required prior to each application.*

Response to Comment 11:

Condition No. 3, Table I of Part III has been revised as requested.

Comment 12:

Condition No. 4.A.1 – The following statement is included: *"Upon completion of treatment, the leachate will be land applied using a retracting water reel or piped or hauled to the City of Luxora WWTP."* This statement could restrict Mississippi County from utilizing other permitted off-site facilities for leachate disposal.

Mississippi County requests this statement be revised to similar text in the solid waste permit documents, which states: *"Upon completion of treatment, the leachate will be land applied using a retracting water reel, piped or hauled to the City of Luxora WWTP, recirculated in the landfill, or hauled to another permitted off-site facility for disposal."*

Response to Comment 12:

Condition No. 4.A.1 was included in the permit based on submitted Waste Management Plan (WMP). Based on this comment, the Department has revised the condition for more flexibility in the final disposal of the treated leachate. The permittee revised their WMP to be consistent with the requested language. The Addendum was submitted on June 26, 2015. Condition 4.A.1 was revised to state the following:

Upon completion of treatment, the treated leachate will be land applied using a retracting water reel, piped or hauled to the City of Luxora WWTP, recirculated in the landfill (if a plan for leachate recirculation is submitted and approved by the Solid Waste Division), or hauled to another permitted off-site facility for disposal upon receipt of Water Division approval.

Comment 13:

Condition No. 4.A.6 – For clarification, the Landfill requests that condition 4.A.6 be revised as follows (added text is shown by bold and underline type):

"**Treated** leachate shall not be discharged from this operation to the waters of the State or applied onto the land in any manner that may result in pooling, ponding, runoff to the waters of the State, or overland flow, even if the overland flow is entirely contained within the boundaries of the land application site. If any of the above conditions occur, land application shall cease immediately. Resumption of application activities cannot occur until Condition No. 4.D.10 of Part III of the permit has been satisfied and all other conditions of the permit are met. *Note: Any evidence of runoff **resulting from land application** must be reported within 24 hours to the Enforcement Branch of the Water Division in accordance with Facility Standard Condition 16 of Part IV of the permit.*

Response to Comment 13:

The Department understands the commenter's concern with Condition No. 4.A.6 of Part III. In order to eliminate confusion on the type of waste to be land applied, the Department has added the word "*treated*" to the current condition and has added the following Condition to the permit for the untreated leachate.

Untreated leachate shall not be land applied or discharged from this operation to the waters of the State. ***Note: Any evidence of a discharge must be reported within 24 hours to the Enforcement Branch of the Water Division in accordance with Facility Standard Condition 16 of Part IV of the permit.***

For more clarification on the last sentence of the permit condition, the Department has revised the last sentence to state:

Any evidence of ***a discharge*** must be reported within 24 hours to the Enforcement Branch of the Water Division in accordance with Facility Standard Condition 16 of Part IV of the permit.

Comment 14:

Condition No. 4.C.4 – The draft permit requires quarterly measurements of the treatment pond sludge depth with the results to be reported on an annual basis. We believe that this frequency is not necessary given that historical leachate sampling has shown that measured BOD concentrations have been less than 100 mg/L. Another source of solids would be lime from the proposed lime treatment unit; however based upon the unit's size, the contribution of solids will be small given the overall size of the treatment ponds. Based upon the known leachate characteristics, annual solids generation is estimated to be very low.

Measuring pond sludge depth once every quarter will necessitate measurements when the ponds are in operation, requiring boat access, which creates worker safety issues. The preferred time for sludge depth monitoring would be at the end of the growing season following pond pump down.

Therefore, Mississippi County requests that ***"measured quarterly"*** be stricken and replaced with ***"measured once every two years."*** When compared to municipal wastewater treatment ponds (which normally have higher solids generation rates), the Department generally requires sludge depth measurements once every five years.

Response to Comment 14:

As stated in the Permit Modification Application Summary and Rationale, "The Leachate Treatment Ponds design and calculations in the March 13, 2015 WMP only allowed for one foot of storage for the sludge." In order to ensure the two (2) Leachate Treatment Ponds have adequate storage, the Department will not reduce the monitoring frequency from quarterly to measured once every two years. However, the monitoring frequency will be reduced from quarterly to once a year after growing season. Once the permittee has determined the capability of the Leachate Treatment Ponds and the variability within the treatment system, the permittee can request a permit modification to reduce the monitoring frequency of the sludge depth.

Comment 15:

Condition No. 4.C.6 – This condition requires written authorization from the Department to resume system operations in the event of any liner inspection or repair. Mississippi County requests that this condition be amended to reflect similar language in Regulation 22.428(j) as follows (added text is shown by bold and underline type):

Upon completion of any liner inspection or repair, the permittee shall submit a certification signed and stamped by a registered professional engineer in the state of Arkansas that the liner is in good operating condition and is in compliance with Conditions 4.B.2 and 4.B.3 of Part III. The certification shall also include the liner inspection report required by Condition 4.C.5 of Part III. Operation of the Leachate Treatment Ponds shall not commence until the Water Division has issued a letter of authorization to resume operation (See Condition 4.B.8 of Part III). **If no notice to the contrary is received by the owner or operator within 14 days after receipt by the Department of the certification, the certification shall be deemed to be acceptable and treatment pond and land application operations may commence.**

Response to Comment 15:

Condition No. 4.C.6 of Part III has been revised as requested.

Comment 16:

Condition 4.D.9 – We are requesting the Department to revise this condition to allow land application when precipitation chances are 50% or less. This part of the condition would be revised to state: *"Land application is prohibited when the soils are saturated; frozen; covered with ice or snow; during precipitation events; or when precipitation is imminent (greater than a 50% chance of precipitation predicted by the nearest National Weather Service station) within a 24-hour period."*

Response to Comment 16:

The National Weather Service defines the precipitation probability for 30%-50% to be a "chance" of rain. Therefore, the condition will not be changed. Refer to the Permit Modification Application Summary and Rationale for more justification.

Comment 17:

Condition 4.D.14 – Mississippi County requests that the frequency of equipment inspections be revised to once weekly. The condition would be revised as follows: *"The following items pertaining to the land application equipment shall be inspected for proper operation once per week during the operating period for land application."* Given the on-site presence of a licensed operator (Condition 4.D.1), Mississippi County believes required inspections "before, during, and after" site operations (along with the associated record keeping requirements) are excessive, and that unexpected conditions will be sufficiently addressed by the operator. This reduces the burden of paperwork (Condition 4.D.16) and allows the operator to focus more on system operation.

Response to Comment 17:

Condition No. 4.D.14 of Part III has been revised as requested.

Comment 18:

Condition 4.D.15 – Mississippi County requests that the frequency of land application site inspections be revised to once weekly. The condition would be revised as follows: *"The following items pertaining to the land application sites shall be inspected once per week during the operating period for land application."* Given the on-site presence of a licensed operator (Condition 4.D.1), Mississippi County believes required inspections "before, during, and after" site operations (along with the associated record keeping requirements) are excessive, and that unexpected conditions will be sufficiently addressed by the operator. This reduces the burden of paperwork (Condition 4.D.16) and allows the operator to focus more on system operation.

In addition, items b and c of this condition appear redundant.

Response to Comment 18:

The Departments intent of this Condition was to ensure that the permittee is complying with the land application conditions in listed in Part III.D before, during, and after the land application operation. If the permittee does not monitor at this frequency, the land application operation has the potential of negatively impacting the environment. Therefore, the Department will not change the monitoring frequency.

After further review of Condition 4.D.15.b and c, the Department does not believe these conditions are redundant. Condition b is an inspection for evidence of runoff to waters of the State (a possible discharge but was not observed) whereas Condition c is an inspection of the land application site and a discharge to waters of the State (observed discharge). Based on this comment, the Department will not change this condition.

Comment 19:

Condition 4.D.16 – Strike "(before, during, and after)" for consistency with the requested changes to Conditions 4.D.14 and 4.D.15.

Response to Comment 19:

Based on Comments 17-19, the Department has revised Condition 4.D.16 of Part III by replacing "before, during, and after" with "each *monitoring* period *outlined in Conditions 4.E.14 and 4.E.15 above*". The condition will state:

> The permittee shall develop checklists that will demonstrate compliance with Conditions 4.E.14 and 4.E.15 above. A checklist shall be completed for each *monitoring* period *outlined in Conditions 4.E.14 and 4.E.15 above* and contain the name of the person

conducting the inspection, title, and date of inspection. Additional information may be added to the inspection report at the permittee's discretion. All checklists shall be kept on site and made available to the Department upon request.

Comment 20:

Condition No. 4.E.1 – The requirement to sample for all parameters listed in Appendix I of APC&EC Regulation 22 is included as part of the monthly (April 1st – October 31st) monitoring requirements for treated leachate. Many of the constituents in this Appendix are not applicable to land application area loadings (i.e., VOCs). Mississippi County already performs semi-annual sampling of untreated leachate for the parameters listed in Appendix I, which are reported to the Department as part of their groundwater monitoring program and Annual Engineering Inspection Report. This additional requirement would result in unnecessary expenses to the Landfill for reporting that is already being performed on a semi-annual basis, and would not provide any added protection beyond the limits established in Condition 3. Any parameter of concern should be listed in Condition 3, Table 1 of Part III of the permit. Mississippi County requests that monitoring for parameters listed in Appendix I of APC&EC Regulation 22 be stricken from this permit condition.

As noted above in the comment to Condition No. 3 Table I, the draft Permit requires monthly monitoring of parameters listed in Table 1. Mississippi County requests that the monitoring frequency be reduced from monthly monitoring to quarterly monitoring, with the ability to request the Department to reduce the frequency to semi-annual after five years of data acquisition.

This condition also requires Mississippi County to submit lab "*analyses to the Department for review and approval,*" prior to the 1st application. The licensed operator for the Landfill and/or its engineering consultant can make an objective decision as to whether the results of lab analyses meets the criteria specified in Condition 3, Table 1. Mississippi County requests the Department to strike "*and approval,*" from this condition. The lab analyses can be submitted to the Department for review prior to the 1st application. As required by the permit, Mississippi County will submit lab analyses, as part of the Annual Report, to the Department for review and approval.

Response to Comment 20:

The Department understands that there are multiple constituents in Appendix I of APC&EC Regulation 22 that are not applicable to land application area loadings (i.e., VOCs); therefore, the monitoring requirements for Appendix I of APC&EC Regulation 22 in Condition No. 4.E.1 of Part III has been removed as requested.

Based on this Comment and Comment 10, the Department has changed the monitoring frequency from monthly to once every other month when land application is allowed by the permit (between April 1st – October 31st) with a minimum of 4 samples shall be collected per year. Please refer to Response to Comment 10 for more information.

The Department understands the position of the commenter in regards to the approval of the first analysis of the treated leachate. However, the Department does not have any data on the treated leachate to be land applied by the permittee and this permit is for the construction of the two (2) Leachate Treatment Ponds that will provide treatment to the leachate; therefore, the permittee will be required to submit the 1st analysis of the treated leachate for review and approval prior to land application.

Comment 21:

Condition 4.E.3 – Strike "If the analytical results for any parameter required to be sampled exceeds the maximum concentration or limit" from this condition. Mississippi County requests that this condition be revised to state: *"If the analytical results for any parameter required to be sampled exceeds the cumulative pollutant loading rate specified in Condition 3, Table 1 of Part III or exhibits any hazardous waste characteristic as determined in Condition 2 of Part III, the permittee shall:."* The land application area has been evaluated on a cumulative pollutant loading basis, and has adequate capacity for many years based upon historical leachate analysis. This evaluation has been provided to the Department as Appendix D of the Waste Management Plan. In addition to this evaluation, the hazardous waste analysis as required by Permit Condition 2 of Part III provides additional protective measures. Mississippi County also requests the Department amend this condition to the effect that the development of a written Remediation Plan would not be required for minor variations in pH or SAR values, since the Landfill has the ability to make adjustments as part of the treatment pond operations.

Strike *"Note: No land application of treated leachate shall resume prior to receiving written permission from the Water Division"* from this condition. Resuming operations should be based solely upon meeting the criteria of the approved Remediation Plan.

At a minimum, Mississippi County requests that this condition be amended to reflect similar allowances in Reg.22.428(j) as follows: "The owner or owner's representative shall provide written certification to the Department that conditions of the Remediation Plan have been met. Operation of the Leachate Treatment Ponds or Land Application System shall not commence until the Water Division has issued a letter of authorization to resume operation. **If no notice to the contrary is received by the owner or operator within 14 days after receipt by the Department of the certification, the certification shall be deemed to be acceptable and treatment pond and land application operations may commence.**"

Response to Comment 21:

The Department's intent for this condition was to not allow land application if any parameter exceeds the maximum concentration or limit specified in Condition 3, Table I of Part III or exhibits any hazardous waste characteristic as determined by Condition 2 of Part II. The Department will not replace "the maximum concentration or limit" with the "cumulative pollutant loading rate". Once the permittee reaches the cumulative pollutant loading rate, all land application on shall completely cease and the permittee will not be allowed to land apply to the corresponding sites. Based on the monitoring frequency in Condition 3, Table I and Condition 4.E.1 of Part III, the permittee has the potential to land apply treated leachate that exceeds the maximum concentrations or limits (including pH and SAR) or exhibits hazardous waste characteristic as determined by Condition 2 of Part III. Therefore, a Remediation Plan will be required to determine if the land application of treated leachate that doesn't meet the above standards has made an environmental impact to the land application sites or the surroundings.

In order to allow the Department time for a thorough review of any Remediation Plan that is submitted, there will not be a restriction of the review time of the Remediation Plan. Therefore, the permittee will have to wait for written permission before land application can resume.

Comment 22:

Condition 4.E.4.b – The requirement of this condition to *"collect a minimum of 20 individual subsamples"* is ambiguous as to whether it applies to the entire 13-acre land application area, or the six individual 2.17-acre sites. If referring to the six individual land application sites, then the Landfill will have to collect 120 soil subsamples for the preparation of composite samples for analysis. According to recommendations from the University of Arkansas Cooperative Extension Service Document FSA-1035, "Soil Testing for Manure Management," a representative soil sample should be comprised of 25 to 35 individual subsamples taken in either a zig-zag or grid pattern and should represent 20 acres. The Department has required lesser sampling requirements for land application of water-based drilling fluids (e.g., 20 subsamples for 10 acres). Therefore, Mississippi County requests that this condition be revised to state: *"collect a minimum of 24 subsamples for the 13 acre land application area."*

Response to Comment 22:

The Department drafted this permit with specific conditions based on the permittee's Waste Management Plan (WMP), which outlines the land application of treated leachate via a retracting water reel on six (6) different sites that is adjacent to each other for a total of 13.0 acres, in order to protect the environment. For example, Condition 4.D.7 of Part III, which states, "Application of treated leachate shall be evenly distributed over the area to be applied." As discussed in the

Permit Modification Application Summary and Rationale, "In order to avoid over application to one area of the land application site, the treated leachate shall be distributed evenly over the entire area to be irrigated. If the treated leachate is over applied to one portion of the application site, there is potential for concentration on that portion of the site and the treated leachate to runoff to the waters of the State." If only one composite soil analysis is collected for the entire 13.0 acres, the permittee would have to land apply at the same rate (same volume per acre) prior to reapplying to the same land application site, based on Condition 4.D.6 of Part III, in order to comply with the permit. If the permittee does not land apply at the same rate of the entire 13.0 acres, the composite soil sample for the 13.0 acres would not give an accurate representation of the environmental impact to the land application site. Therefore, the Department will require the permittee to collect a composite soil sample for each land application site as listed in Condition 4.D.6 of Part III. However, the Condition 4.E.4.b will be revised to reduce the number of subsamples from 20 to 10.