

Permit No. 5095-W  
AFIN No. 08-00030

**AUTHORIZATION FOR A NO-DISCHARGE WATER PERMIT UNDER THE  
ARKANSAS WATER AND AIR POLLUTION CONTROL ACT**

In accordance with the provisions of the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. Sec. 8-4-101 *et seq*)

**City of Green Forest  
P.O. Box 1510  
Green Forest, AR 72638**

is authorized for the land application of municipal biosolids in Carroll County, Arkansas. The coordinates of the facility are:

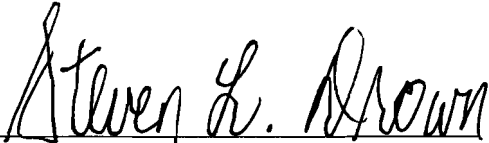
Latitude: 36° 18' 59.4" N; Longitude: 93° 24' 34.3" W

The land application sites nearest to surface waters are located 100 feet from Dry Creek, 100 feet from Callens Branch, 100 feet from an unnamed tributary that flows 0.65 miles to Yocum Creek, 100 feet from Indian Creek, and 450 feet from an unnamed tributary that flows 1.95 miles to Osage Creek. All of the receiving streams are in Stream Segment 4K of the White River basin.

Operation shall be in accordance with all conditions set forth in this permit. In accordance with Part III.23, the permittee must reapply for permit coverage at least 180 days prior to the expiration date.

Effective Date: August 1, 2011

Expiration Date: July 31, 2016

  
Steven L. Drown  
Chief, Water Division  
Arkansas Department of Environmental Quality

1 AUG 11  
Issue Date

**Part I**  
**PERMIT REQUIREMENTS**

**LIMITATIONS AND MONITORING REQUIREMENTS:**

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

<b>TABLE I</b>				
<b>Waste Analysis, Reporting, and Record Keeping</b>				
<b>Parameter</b>	<b>Ceiling Concentrations (mg/kg)</b>	<b>Cumulative Pollutant Loading Rate (lb/ac)</b>	<b>Monitoring Frequency</b>	<b>Reporting</b>
Arsenic	75	37	Quarterly	Annually by May 1
Cadmium	85	35		
Copper	4300	1350		
Lead	840	270		
Mercury	57	15		
Molybdenum	75	Report		
Nickel	420	378		
Selenium	100	90		
Zinc	7500	2520		
Polychlorinated Biphenyls (PCB's)	50	N/A		
<b>Parameter</b>	<b>Maximum Limit</b>	<b>Reporting Units</b>	<b>Monitoring Frequency</b>	<b>Reporting</b>
Total Solids	Report	Percentage (%)	Quarterly	Annually by May 1
Nitrate Nitrogen	Report	mg/kg		
Nitrite Nitrogen	Report	mg/kg		
Ammonia Nitrogen	Report	mg/kg		
Total Kjeldahl Nitrogen	Report	mg/kg		
Total Phosphorus	Report	mg/kg		
Total Potassium	Report	mg/kg		
Total Volume Applied	Report	Gallons/Dry Tons	Each land application event	

<b>TABLE II</b>			
<b>Soils</b>			
<b>Parameter</b>	<b>Reporting Units</b>	<b>Monitoring Frequency</b>	<b>Reporting</b>
Conductivity	μmhos/cm	Prior to each application	Annually by May 1
Cation Exchange Capacity	meq/100g		
Nitrate-Nitrogen	mg/kg		
Phosphorus	mg/kg		
pH*	s.u.		
Potassium	mg/kg		
Magnesium	mg/kg		
Arsenic	mg/kg	Prior to initial application; Once every five (5) years	Submit with Renewal Application
Cadmium	mg/kg		
Copper	mg/kg		
Lead	mg/kg		
Mercury	mg/kg		
Molybdenum	mg/kg		
Nickel	mg/kg		
Selenium	mg/kg		
Zinc	mg/kg		

\* If the resulting pH is 5.7 or lower, lime must be applied in accordance with the University of Arkansas Cooperative Extension Service.

**Part II**  
**Specific Conditions**

1. This permit is for the land application of municipal biosolids.
2. The waste disposal system shall be operated in accordance with the August 29, 2010 Waste Management Plan (WMP) approved by the Department. This permit shall supersede any limit, monitoring requirement, design, or operational standard described in the WMP. The permittee shall comply with all other provisions of 40 CFR Part 503 not specifically addressed in this permit.
3. The waste shall not be applied to the extent that the added plant available nitrogen (PAN) exceeds the annual nitrogen uptake rate of the crop. The PAN shall be calculated using the following equations:

$$\text{Surface applied waste: PAN} = 0.3(\text{TKN} - \text{NH}_3) + 0.5\text{NH}_3 + \text{NO}_3 + \text{NO}_2$$

4. Land application sites are as follows:

Field #	New/Old	Range	Township	Section	Total Acres	Latitude	Longitude
Eldridge 1	Old	23W	20N	21	14	36°23'1.50"N	93°25'47.57"W
Eldridge 2	Old	23W	20N	21	18	36°22'52.79"N	93°25'52.16"W
Eldridge 3	Old	23W	20N	21	30	36°22'40.45"N	93°25'47.63"W
Eldridge 4	Old	22W	19N	5	11	36°20'27.76"N	93°20'57.13"W
Eldridge 5	Old	22W	19N	5	264	36°20'14.71"N	93°20'36.75"W
Eldridge 6	Old	22W	19N	5	16	36°20'23.31"N	93°20'59.55"W
Eldridge 7	Old	22W	19N	5	45	36°20'11.4"N	93°20'14.39"W
Eldridge 8	Old	23W	19N	12	17	36°19'28.82"N	93°22'37.94"W
Eldridge 9	Old	23W	19N	12	31	36°19'34.35"N	93°22'31.23"W
Eldridge 10	Old	23W	20N	16	69	36°23'16.34"N	93°25'31.47"W
Eldridge 11	Old	23W	20N	16	29	36°23'15.21"N	93°25'50.51"W
Eldridge 12	Old	23W	20N	21	35	36°23'3.84"N	93°25'31.17"W
Eldridge 13	New	22W	19N	6 & 1	21	36°19'25.35"N	93°22'29.15"W
Eldridge 14	New	22W	19N	7	27	36°19'25.35"N	93°22'29.15"W
Harp 1	Old	23W	19N	14	48	36°18'10.83"N	93°24'17.28"W
Harp 2	Old	23W	19N	14	28	36°18'24.45"N	93°24'10.70"W
Harp 3	Old	23W	19N	15	24	36°18'28.13"N	93°24'25.68"W
Harp 4	Old	23W	19N	14	20	36°18'43.79"N	93°24'10.89"W
Harp 5	Old	23W	19N	8 & 17	50	36°23'57.23"N	93°27'24.20"W
Harp 6	Old	23W	20N	8 & 17	20	36°23'56.00"N	93°27'1.15"W
Young 1	Old	23W	19N	10	11	36°19'19.72"N	93°24'44.59"W
Young 2	Old	23W	19N	10	7	36°19'18.95"N	93°24'55.95"W
Young 3	Old	23W	19N	10	3	36°19'9.91"N	93°24'42.53"W
Young 4	Old	23W	19N	10	8	36°19'8.91"N	93°24'34.01"W
Rose 1	Old	24W	19N	2	13	36°20'32.15"N	93°30'4.98"W
Rose 2	Old	24W	19N	2	5.5	36°20'31.43"N	93°29'56.47"W

Dudley 1	Old	23W	19N	10 & 15	15	36°18'50.41"N	93°24'47.35"W
Dudley 2	Old	23W	19N	10	5	36°18'53.35"N	93°24'39.35"W
Dudley 3	Old	23W	19N	10 & 15	10	36°18'44.94"N	93°24'38.84"W
Dudley 4	Old	23W	19N	10 & 15	27	36°18'53.27"N	93°24'28.41"W
Dudley 7	Old	23W	19N	15	8	36°18'35.80"N	93°24'40.16"W
Dudley 8	Old	23W	19N	10 & 15	8	36°18'44.45"N	93°24'22.13"W
Barnhill 1	New	23W	19N	11 & 12	25	36°19'19.05"N	93°23'2.06"W
Barnhill 2	New	23W	19N	11 & 12	63	36°19'19.05"N	93°23'2.06"W
Barnhill 3	New	23W	19N	11 & 12	12	36°19'19.05"N	93°23'2.06"W
Barnhill 4	New	23W	19N	11 & 12	25	36°19'19.05"N	93°23'2.06"W
Barnhill 5	New	23W	19N	11 & 12	25	36°19'19.05"N	93°23'2.06"W
Barnhill 6	New	23W	19N	11 & 12	18	36°19'19.05"N	93°23'2.06"W
Barnhill 7	New	23W	19N	11 & 12	34	36°19'19.05"N	93°23'2.06"W
Barnhill 8	New	23W	19N	11 & 12	22	36°19'19.05"N	93°23'2.06"W
Coley	New	23W	20N	27	80	36°21'56.07"N	93°25'6.74"W
Carter 1	Old	23W	20N	27	17	36°21'57.89"N	93°24'32.28"W
Carter 2	Old	23W	20N	27	4	36°22'02.50"N	93°24'24.33"W
Carter 3	Old	23W	20N	27	11	36°21'57.14"N	93°24'23.83"W
Carter 4	Old	23W	20N	27	7	36°22'02.09"N	93°24'15.17"W
Carter 5	Old	23W	20N	27	5	36°21'57.71"N	93°24'15.89"W
Carter 6	Old	23 W	20N	27	11	36°22'15.29"N	93°24'30.06"W
Carter 7	Old	23W	20N	27	5	36°22'13.56"N	93°24'22.90"W
Carter 9	Old	23W	20N	27	5	36°22'06.24"N	93°24'24.54"W
Norris 1	New	23W	20N	36	9	36°20'41.2"N	93°22'21.8"W
Norris 2	New	23W	20N	36	15	36°20'35.5"N	93°22'17.5"W
Norris 3	Old	23W	20N	36	9	36°20'33.9"N	93°22'38.2"W

5. The biosolids generator must issue a signed certification stating that the Pathogen Reduction, Vector Attraction Reduction, and Pollutant Concentration Limits have been met. The State requirements on Pathogen Reduction, Vector Attraction Reduction, and Pollutant Concentration Limits are the same as those listed in 40 CFR Part 503. All the above information must be made available to the land-applicator before the biosolids materials are delivered. Concurrently, a signed copy of each certification must be also submitted to the ADEQ Water Division prior to land application.
6. The utilization of improvised field storage sites or any other site not approved by the Department is prohibited. Transportation of the biosolids must be such that will prevent the attraction, harborage or breeding of insects or rodents.
7. The containers used for the transportation of the biosolids must be of the closed type. Transportation equipment must be leak-proof and kept in sanitary condition at all times. Biosolids must be enclosed or covered as to prevent littering, vector attraction, or any other nuisances.
8. Surface applied waste must be evenly distributed over the entire application area.
9. Waste shall not be applied to slopes with a gradient greater than 6%, or to soils that are saturated, frozen or covered with snow, and during rain or when precipitation is imminent, meaning a

substantial natural occurrence of precipitation that could cause significant damage to property or threaten human life in the near future.

10. Waste shall not be spread within: 50 feet of property lines and rock outcrops; 100 feet of lakes, ponds, springs, wetlands, streams, and sinkholes; 200 feet of drinking water wells; or 300 feet of occupied buildings or bodies of water classified as an "extraordinary resource body of water." All boundaries must be flagged prior to land applying.
11. Annual reports shall be sent to the Department and to the owner of the land receiving biosolids prior to May 1<sup>st</sup>, and must include the following:
  - a. land application dates,
  - b. land application locations,
  - c. quantities of biosolids applied in dry tons per acre per year and in gallons per acre per year,
  - d. methods of disposal,
  - e. amounts of nitrogen applied,
  - f. total elements applied (in that particular year) in lbs per acre,
  - g. total elements applied to date,
  - h. copies of the waste and soil analyses.

The biosolids and soil analyses conducted under Part I of the permit shall include a statement that the analyses were performed in accordance with EPA Document SW-846, "Test Methods for Evaluation of Solid Wastes" or other approved procedures by the Department.

Reports shall be submitted to the Permits Branch at the following address:

Arkansas Department of Environmental Quality  
Water Division, No Discharge Permits Section  
5301 Northshore Dr.  
North Little Rock, Arkansas 72118  
Fax (501) 682-0910

or

[Water-permit-application@adeq.state.ar.us](mailto:Water-permit-application@adeq.state.ar.us)

**Part III**  
**Standard Conditions**

**1. Duty to Comply**

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Arkansas Water and Air Pollution Control Act (Act 472 of 1949 as amended) and is grounds for civil and administrative enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

**2. Penalties for Violations of Permit Conditions**

The Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended) provides that any person who violates any provisions of a permit issued 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 twenty-five thousand dollars (\$25,000) or both for each day of such violation. Any person who violates any provision of a permit issued under the Act may also be subject to civil penalty in such amount as the court shall find appropriate, not to exceed ten thousand dollars (\$10,000) for each day of such violation. The fact that any such violation may constitute a misdemeanor shall not be a bar to the maintenance of such civil action.

**3. Permit Actions**

A. This permit may be modified, revoked and reissued, or terminated for cause including, but not limited to the following:

- i. Violation of any terms or conditions of this permit;
- ii. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;
- iii. A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination; or
- iv. Failure of the permittee to comply with the provisions of Arkansas Pollution Control and Ecology Commission (APC&EC) Regulation No. 9 (Permit fees).

B. The filing of a request by the permittee for a permit modification, revocation and reissuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

**4. Civil and Criminal Liability**

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance. Any false or materially misleading representation or concealment of information required to be reported by the provisions of this permit or applicable state statutes or regulations which defeats the regulatory purposes of the permit may subject the permittee to criminal enforcement pursuant to the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended).

**5. 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).

**6. 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.

**7. 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.

**8. Severability**

The provisions of this permit are severable, and if any provision of this permit, or the application of any provisions of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

**9. Permit Fees**

The permittee shall comply with all applicable permit fee requirements for no discharge permits as described in APC&EC Regulation No. 9 (Regulation for the Fee System for Environmental Permits). Failure to promptly remit all required fees shall be grounds for the Director to initiate action to revoke this permit.

**10. 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. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. 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 insure compliance with the conditions of this permit.

**11. 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.

**12. Removed Substances**

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of waste waters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering the waters of the State.



**13. Reporting of Violations and Unauthorized Discharges**

- A. Any violations to this permit must be reported to the Enforcement Branch of the Department immediately. Any leaks or seeps shall be reported to the Department and appropriately corrected. Any discharge from the fluids storage system such as an overflow, a broken pipe, etc., shall be immediately reported to the Department.
- B. The operator shall visually monitor and report immediately (within 24 hours) to the Enforcement Branch 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) 682-0910

Or

[Water-permit-application@adeq.state.ar.us](mailto:Water-permit-application@adeq.state.ar.us)

**14. Penalties for Tampering**

The Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended) 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.

**15. Laboratory Analysis**

All laboratory analyses submitted to the Department shall be completed by a laboratory certified by ADEQ under Ark. Code Ann. § 8-2-201 *et seq.* Analyses for the permittee's internal quality control or process control do not need to be performed by an ADEQ certified laboratory.

**16. 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 a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time.

**17. 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.

**18. 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,
- D. Sample, inspect, or monitor at reasonable times, for the purposes of assuring permit compliance any substances or parameters at any location.

**19. Planned Changes**

The permittee shall give notice and provide the necessary information to the Director for review and approval prior to any planned physical alterations or additions to the permitted facility.

**20. Anticipated Noncompliance**

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

**21. Transfers**

The permit is nontransferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Act.

**22. Duty to Provide Information**

The permittee shall furnish to the Director, within a reasonable time, any information which the Director 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 Director, 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. Duty to reapply**

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The complete application shall be submitted at least 180 days before the expiration date of this permit. The Director may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date. Conditions of this permit will continue in effect past the expiration date pending issuance of a new permit, if:

- A. The permittee has submitted a timely and complete application; and
- B. The Director, through no fault of the permittee, does not issue a new permit prior to the expiration date of the previous permit.

**24. Signatory Requirements**

- A. All applications, reports or information submitted to the Director shall be signed and certified. All permit applications shall be signed as follows:
  - i. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
    - a. A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or
    - b. The manager of one or more manufacturing, production, or operation facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including: having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
  - ii. For a partnership or sole proprietorship: by a general partner or proprietor, respectively; or
  - iii. For a municipality, State, Federal, or other public agency; by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:
    - a. The chief executive officer of the agency, or
    - b. A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.
- B. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
  - i. The authorization is made in writing by a person described above.
  - ii. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
  - iii. The written authorization is submitted to the Director.
- C. Any person signing a document under this section shall make the following certification: “I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering

the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

**25. Availability of Reports**

Except for data determined to be confidential under APC&EC Regulation 6, 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. As required by the Regulations, the name and address of any permit applicant or permittee, permit applications, permits, and effluent data shall not be considered confidential.

**26. 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 (Act 472 of 1949, as amended).

**27. 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 IV**  
Definitions

“**Act**” means the Arkansas Water and Air Pollution Control Act (Ark. Code Ann. § 8-4-101 *et seq*) as amended.

“**Agronomic Rate**” means the whole sludge application rate (dry-weight basis) designed to: (1) provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (2) minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

“**Annual Pollutant Loading Rate**” means the maximum amount of a pollutant (dry-weight basis) that can be applied to a unit area of land during a 365-day period.

“**APC&EC**” means the Arkansas Pollution Control and Ecology Commission.

“**Application Site or Land Application Site**” means all contiguous areas of a users' property intended for sludge application.

“**Applicable water quality standards**” means all water quality standards to which a discharge is subject under the federal Clean Water Act and which has been (a) approved or permitted to remain in effect by the Administrator following submission to the Administrator pursuant to Section 303 (a) of the Act, or (b) promulgated by the Director pursuant to Section 303(b) or 303(c) of the Act, and standards promulgated under regulation No. 2, as amended, (regulation establishing water quality standards for surface waters of the State of Arkansas.)

“**Available Acreage**” means total acreage minus buffer zones.

“**Biosolids**” means any sludge or material derived from sludge that can be beneficially used. Beneficial use includes, but is not limited to, land application to agricultural land, forest land, a reclamation site or sale or give away to the public for home lawn and garden use.

“**Cumulative Pollutant Loading Rate (CPLR)**” means the maximum of an inorganic pollutant (dry-weight basis) that is applied to a unit area of land.

“**Department**” means the Arkansas Department of Environmental Quality (ADEQ).

“**Director**” means the Director of the Arkansas Department of Environmental Quality.

“**Dry weight-basis**” means 100 percent solids (i.e., percent moisture).

“**Land application**” means the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the land so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil. Land application includes distribution and marketing (i.e. the selling or giving away of the sludge).

“**Pathogen**” means an organism that is capable of producing an infection or disease in a susceptible host.

“**Pollutant Limit**” means a numerical value that describes the maximum amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the maximum amount of a pollutant that can be applied to a unit area of land (e.g., pounds per acre); the maximum density of a microorganism per unit amount of sewage sludge (e.g., Most Probable Number per gram of total solids); the maximum volume of a material that can be applied to a unit area of land (e.g., gallons per acre); or the maximum amount of pollutant allowed in plant tissue (e.g., parts per million).

“**Runoff**” means rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off of the land surface.

**“Sewage sludge”** means solid, semi-solid, or liquid residue generated during the treatment of domestic sewage and/or a combination of domestic sewage and industrial waste of a liquid nature in a Treatment Works. Sewage sludge includes, but is not limited to, domestic septage, scum, or solids removed in primary, secondary, or advanced wastewater treatment processes; and material derived from sewage sludge. Sewage sludge does not include ash generated during the incineration of sewage sludge or grit and screenings generated during preliminary treatment of domestic sewage in a Treatment Works. These must be disposed of in accordance with 40 CFR Part 258.

**“Total solids”** means the materials in the sewage sludge that remain as residue if the sludge is dried at 103 to 105 degrees Celsius..

**“Treatment works”** means either Federally owned, publicly owned, or privately owned devices or systems used to treat (including recycling and reclamation) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature.

**“Vector Attraction”** means the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

**“Volatile Solids”** means the amount of the total solids in sewage sludge lost when the sludge is-combusted at 550 degrees Celsius for 15-20 minutes in the presence of excess air.

**“mg/l”** means milligrams per liter or parts per million (ppm).

**“mg/kg”** means milligram per kilogram.

**“NH<sub>3</sub>”** means Ammonia Nitrogen.

**“NO<sub>3</sub> + NO<sub>2</sub>”** means Nitrate + Nitrite Nitrogen.

**“PAN”** means Plant Available Nitrogen.

**“ppm”** means parts per million.

**“TKN”** means Total Kjeldahl Nitrogen.

**“s.u.”** shall mean standard units.

**QUARTERLY:**

(1) is defined as a fixed calendar quarter or any part of the fixed calendar quarter for a non-seasonal effluent characteristic with a measurement frequency of once/quarter. Fixed calendar quarters are: January through March, April through June, July through September, and October through December; or

(2) is defined as a fixed three month period (or any part of the fixed three month period) of or dependent upon the seasons specified in the permit for a seasonal effluent characteristic with a monitoring requirement frequency of once/quarter that does not does not coincide with the fixed calendar quarter. Seasonal calendar quarters May through July, August through October, November through January, and February through April.

**SEMI-ANNUAL:**

is defined as the fixed time periods January through June, and July through December (or any portion thereof) for an effluent characteristic with a measurement frequency of once/6 months or twice/year.

**ANNUAL or YEARLY**

is defined as a fixed calendar year or any portion of the fixed calendar year for an effluent characteristic or parameter with a measurement frequency of once/year. A calendar year is January through December, or any portion thereof.

## **STATEMENT OF BASIS**

This Statement of Basis is for information and justification of the permit limits only and is not enforceable. This permit decision is for issuance of a no discharge operation under permit number 5095-W and AFIN (file) number 08-00030.

### **1. PERMITTING AUTHORITY**

Arkansas Department of Environmental Quality  
Water Division, Permits Branch  
5301 Northshore Dr.  
North Little Rock, Arkansas 72118-5317

### **2. APPLICANT**

City of Green Forest  
P.O. Box 1510  
Green Forest, AR 72638

### **3. FACILITY LOCATION**

The facility located as follows: 1.85 miles southeast of Green Forest. Travel south on County Rd. 902 from Hwy. 62 for 0.85 miles. Turn right onto County Rd. 938, travel 0.6 miles keep right and facility is 0.2 miles ahead. The nearest city to the facility is Green Forest in Carroll County, Arkansas. The facility is located at the following coordinates:

Latitude: 36° 18' 59.4" N; Longitude: 93° 24' 34.3" W

### **4. RECEIVING STREAM LOCATION**

The land application sites nearest to surface waters are located 100 feet from Dry Creek, 100 feet from Callens Branch, 100 feet from an unnamed tributary that flows 0.65 miles to Yocum Creek, 100 feet from Indian Creek, and 450 feet from an unnamed tributary that flows 1.95 miles to Osage Creek. All of the receiving streams are in Stream Segment 4K of the White River basin. Yocum Creek is only the receiving stream on ADEQ 303 (d) list of impaired waters. It is listed as category 5d for impairment due to Beryllium content. The set back distance and land slope requirements along with the total distance from Yocum Creek will prevent it from being affected by this operation.

### **5. CONSULTANT FOR THIS FACILITY**

Joe Tarvin  
EGIS Engineering, Inc.  
314 S. Main Street  
Bentonville, AR 72712

## **6. PREPARED BY**

The permit was prepared by:

Andy Nanneman  
Engineer  
Permits Branch, Water Division  
501-682-0647  
E-mail: [nanneman@adeq.state.ar.us](mailto:nanneman@adeq.state.ar.us)

## **7. PREVIOUS PERMIT ACTIVITY**

Previous Permit No.: AR0021741  
Effective Date: 5/01/2010  
Expiration Date: 4/30/2015

The City of Green Forest has previously land applied biosolids under NPDES Permit No. AR0021741. The NPDES permit will no longer include land application of biosolids, and this No-Discharge permit now covers all land application of biosolids at the permitted sites.

The permittee submitted a permit issuance application which was received on 8/5/2010. It is proposed that the current water no discharge permit be issued for a 5-year term.

## **8. APPLICANT ACTIVITY**

Under the standard industrial classification (SIC) code 4952 or North American Industry Classification System (NAICS) code 22132, the applicant's activities are the operation of waste water treatment plant. This permit is for the land application of municipal biosolids.

## **9. WASTE APPLICATION METHOD**

The biosolids are loaded into 3,000 gallon tanker trucks from the 361,000 gallon aerated sludge storage tank. The trucks transport the biosolids to the land application sites where it is surface applied in a uniform manner using a splat plate.

## **10. TOTAL ACREAGE**

There are 1339.5 acres permitted for the facility. The annual application of biosolids is limited by the plant available nitrogen (PAN) equation and the nitrogen uptake rate of the cover crop, Condition No. 3 of Part II of the Permit. Based on the August 20th, 2010 waste management plan the treatment facility produced 293.3 dry tons of biosolids annually. Utilizing the waste analysis in the 2009 annual report this waste production rate equates to 25,320 lbs of PAN per year. Using the nitrogen uptake rate of fescue pasture crop, the lowest uptake rate of cover crops identified in the waste management plan, and the aforementioned production rate, the facility would require 183 acres for land application, which is well below the permitted acreage.



## 11. LIST OF ALL LAND APPLICATION SITES

See Part II Condition No. 4 of the permit

## 12. BASIS FOR PERMIT CONDITIONS

The Arkansas Department of Environmental Quality has made a tentative determination to issue a permit for the No-Discharge facility as described in the application and waste management plan. Permit requirements and conditions are based on regulations pursuant to the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended, Ark. Code Ann. § 8-4-101 *et seq* and Ark. Code Ann. § 8-4-201 *et seq*).

Specific permit conditions and limits and their sources are listed as follows:

### Limits and reporting requirements for arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc in the waste

The associated limits and the cumulative pollutant loading rates (CPLRs) are adopted from EPA's risk assessment Federal Part 503 rule that governs the land application of biosolids. 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.

### Limit for polychlorinated biphenyls (PCBs) concentration in the waste

Biosolids can contain trace amounts of PCBs. The content of PCBs in biosolids to be land applied is limited to a maximum of 50 mg/kg under 40 CFR Part 761. Annual reporting requirements for PCBs are included to verify compliance with the permit.

### Reporting requirements for percent total solids of the waste

This parameter is required to convert between a wet and dry basis.

### Reporting requirements for all nitrogen compounds in the waste

These concentrations are required to calculate the plant available nitrogen to comply with Part II, Condition No. 3 of the permit.

### Reporting requirements for total phosphorus and total potassium in the waste

These constituents are required for plant growth and are monitored to ensure crop nutrients are provided. Also, phosphorus may be the limiting nutrient in the Nutrient Surplus Area as delineated by the Arkansas Natural Resource Commission.

### Removal of reporting requirements for percent volatile solids

The reporting requirement for percent volatile solids was removed because the data is not used to evaluate the waste for land application. Please note, in cases where the permittee will be attempting to meet the vector reduction option in 40 CFR Part 503.33(b)(1), they would be required to perform the required laboratory analysis.

Monitoring frequency of waste parameters

The waste is monitored quarterly to ensure compliance with the limits included in Table I of Part I and with Part II.3. In normal operating conditions the biosolids are directly transferred from the aerated sludge storage tank to the land application tanker trucks numerous times per week. Because of the continuous nature of the land application operation it was determined that quarterly monitoring would be the most practical and effective monitoring frequency.

Reporting requirements for pH of the soil

Soil pH must be monitored to ensure compliance with Part I, Table II of the permit.

Reporting requirements for arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc in soils

The list of metal cations was adopted from 40 CFR Part 503 for the land application of biosolids. Limits were not established due to the variability of analyzing the concentrations of these metals in soils. Reporting requirements are required as verification that metals from land application of waste or other sources are not being applied at a rate that causes excessive accumulation of metals. A review of lab analyses indicate that the metals in the soils of land applications sites are not increasing, or not increasing at a rate that requires annual monitoring, therefore the monitoring frequency has been reduced to once every five years. If results indicate that soil concentrations have increased, the Department may require cessation of land application activities, further testing, or remediation activities.

Reporting requirements for conductivity, cation exchange capacity, nitrate-nitrogen, phosphorus, potassium, and magnesium in the soil

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 other physical conditions. (USDA Natural Resources Conservation Service "Indicators for Soil Quality Evaluation" April 1996.) Reporting requirements are required as verification that problems from over-application of biosolids or other sources are not occurring. If results indicate that soil concentrations have increased, the Department may require cessation of land application activities, further testing, or remediation activities.

Maximum slope of 6% for the land application area

Topography of the land application area affects the potential for runoff and erosion. The limit of 6% was adopted from "Wastewater Engineering: Treatment and Reuse, 4th Edition," Table 14-51 as an acceptable maximum slope for the surface application of dewatered biosolids.

Buffer distances

Minimum buffer distances are required between land application areas and areas that may be vulnerable to water pollution and to minimize the risk of nutrients or pollutants from leaving the field and reaching surface waters. Buffer distances were adopted from APC&EC Regulation 5.406 and best engineering judgment.

Standard Conditions

The conditions applicable to all no-discharge permits have been included in this permit based on best engineering judgment.

**13. PERMIT COMPLIANCE**

Compliance is required on the effective date of the permit.

**14. SOURCES**

The following Sources were used to draft the permit:

- a. Regulation No. 8, Administrative Procedures, as amended.
- b. Regulation No. 9, Fee System for Environmental Permits, as amended.
- c. Regulation No. 5, Animal Waste Management Systems, as amended.
- d. 40 CFR Parts 122, 503, and 761.
- e. ACT 472 of 1949, as amended, Arkansas Water and Air Pollution Control Act.
- f. Integrated Water Quality and Assessment Report (305(b) Report).
- g. Wastewater Engineering: Treatment and Reuse, 4th Edition.
- h. USDA Natural Resources Conservation Service "Indicators for Soil Quality Evaluation," April 1996.
- i. Application No. 5095-W received 8/5/2010.
- j. Annual report dated January 29, 2010.