



7/7/2005

Docket 040-08027
License SUB-1010

RE: 0537-N

Leonard D. Wert, Director
Division of Nuclear Materials Safety
Region IV
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011

Subject: Sequoyah Fuels Corporation
Discharge Permit Changes

A renewed Waste Water Discharge Permit (OPDES OK0000191) was issued to Sequoyah Fuels Corporation (SFC) by the State of Oklahoma (State), effective July 1, 2005. Enclosed with this letter is a copy of the renewed permit for your information.

The OPDES permit is substantially the same as the previous permit with two notable exceptions. The State has incorporated limits for discharge of radionuclides where the previous permit only required the concentrations to be reported. Additionally, the State has incorporated restrictions on land application of fertilizer produced at the Facility where past application was the exclusive domain of the NRC. In both cases, the State has applied limits consistent with those imposed by SFC's NRC license.

If you should have questions concerning this new permit, please call Scott Munson at 918.489.5511, ext. 20, or myself at ext. 14.

Sincerely,

Craig L. Harlin
Vice President

Enclosure

XC: Bob Evans

Craig



COPY

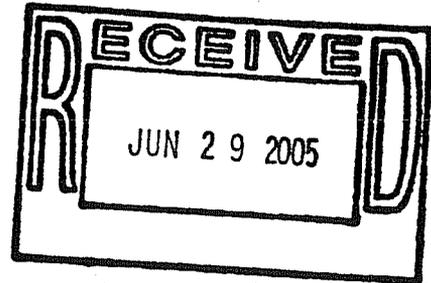
OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

BRAD HENRY
Governor

STEVEN A. THOMPSON
Executive Director

June 27, 2005

John H. Ellis, President
Sequoyah Fuels Corporation
P.O. Box 610
Gore Oklahoma 74435



RE: Permit Renewal
Sequoyah Fuels Corporation (SFC)
OPDES Permit No. OK0000191
Facility ID-68000010

Dear Mr. Ellis:

The Public Comment period for the Sequoyah Fuels draft permit expired on June 13, 2005. The DEQ received comments from one commenter on the draft permit and statement of basis. These comments were directed to the loading limits for the land application portion of the permit and questioned the long term effects of the facility discharge to the Illinois River. The DEQ evaluated the comments and has determined that no changes to the permit are necessary. A copy of the formal Response to Comments is included as an attachment to this letter.

Previous pre-printed Discharge Monitoring Report (DMR) forms may not be consistent with the new permit requirements and there may be delays in receiving updated DMR forms. We are enclosing a blank DMR form (with instructions) which may be copied and used for reporting if necessary prior to receiving updated DMR forms.

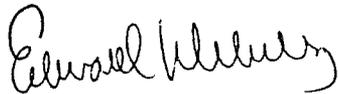
Therefore, your new OPDES permit is enclosed. The effective and expiration dates of this final permit appear on the cover page. Should you have any questions regarding the final permit, please contact the Industrial Permits Section at the letterhead address or telephone (405) 702-8100. Should you have any questions regarding compliance with the conditions of this permit, please contact the Industrial Wastewater Enforcement Section of the Water Quality Division at the same address and phone number.



June 27, 2005
Mr. John Ellis
Sequoyah Fuels Corp.
Page 2 of 2

If you have any questions, please contact Don Barrett at (405) 702-8210.

Sincerely,



Edward Dibrberg, P.E., Manager
Industrial Permits Section
Water Quality Division

ED/DDB/lb KH

cc: Don Hensch, DEQ Land Protection Division W/O Enclosure
Clyde Mason, DEQ Regional Manager
Sequoyah County DEQ Office

Enclosure

RESPONSE TO COMMENTS

Sequoyah Fuels Corporation
P.O. Box 610
Gore, OK 74435

Permit No. OK0000191
Facility ID. No I-68000010

The public comment period for the draft permit for the Sequoyah Fuels Corporation located in Gore, Oklahoma expired at the close of business on June 13, 2005. During the comment period, DEQ received comments from one commenter. The following is a discussion of each comment:

Comment No.1:

The commenter is concerned that the loading limits for heavy metals presented in the draft permit could result in a cumulative amount building up in the soil to a point that a health hazard could exist and have a detrimental effect on future land use.

DEQ Response:

The concentration limits of the permit represent the maximum loading allowed by EPA, and do not reflect the composition of the wastewater to be land applied. In the specific case of lead, the EPA would allow up to 13.38 lbs/acre/year to be land applied. In reality the actual lead concentration of the wastewater has averaged approximately 0.036 mg/l over the past few years. Based on the proposed annual volume of wastewater (9,590,000 gallons) to be land applied, the actual amount of lead would be about 2.88 pounds or 0.0085 pounds/acre calculated as follows: $0.036 \times 8.34 \times 9.59$.

Sequoyah Fuels has been land applying wastewater since 1981. During that time the total amount of lead that has been land applied is less than $\frac{1}{2}$ pound per acre. The EPA has determined that the cumulative amount of lead that could be placed on the land is about 268 pounds per acre. On this basis, overloading of the soil will not occur and should have no effect on future use of the land.

Comment No.2:

The commenter is concerned that the loading limits for nitrogen presented in the draft permit could result in a cumulative amount building up in the soil to a point that a health hazard could exist.

DEQ Response:

Since inception of the land application program in 1981, the Oklahoma State University Department of Agriculture has been contracted to evaluate the program annually. This evaluation determined if the volume of wastewater land applied during each year exceeded the plant uptake capability of the Bermuda grass being grown for feed hay, and to evaluate the buildup of nutrients and metals in the soil. After each annual evaluation recommendations were made that determined the loading rates for the coming year.

A review of these reports and recommendations indicates the wastewater loading (nutrient loading including Nitrogen) of the land application areas has not exceeded the agronomic rates required for optimum plant growth. Conditions in the draft permit will ensure that proper loading will continue to occur in the future.

Comment No.3:

The commenter is concerned that the long term discharge of pollutants to the Illinois River could adversely affect fish and humans that eat the fish and bottom feeding organisms.

DEQ Response:

During the course of permit development, the DEQ is required to evaluate both technology and water quality based parameters to insure the any pollutant discharge does not exhibit a reasonable potential to exceed a promulgated limit. Based on this evaluation the DEQ determined the limits that should be included in the draft permit. The limits included in the draft permit are such that all of the designated beneficial uses of the Illinois River will be protected. Because of other sources of pollutants that may enter the river other than Sequoyah Fuels, it is not possible to make an in-depth evaluation of the effects the Sequoyah Fuels discharge on fish and bottom feeding organisms.

Based on the evaluation of each of these comments, the DEQ has determined that it is not necessary to modify the permit as presented.

**AUTHORIZATION TO DISCHARGE
UNDER
THE OKLAHOMA POLLUTANT DISCHARGE ELIMINATION SYSTEM**

PERMIT NUMBER: OK0000191 ID NUMBER: I-68000010

In compliance with the provisions of the Clean Water Act (33 U.S.C. 125 *et seq.*), hereinafter called the "Act," and with the provisions of the Oklahoma Pollutant Discharge Elimination System Act (OPDES Act) 27A O.S. §2-6-201 *et seq.*, and the rules of the Oklahoma Department of Environmental Quality promulgated thereunder;

Sequoyah Fuels Corporation
P.O. Box 610
Gore, OK 74435

is authorized to discharge from their facility, located in the:

E/2, Section 21, Township 12N, Range 21EIM
Sequoyah County, Oklahoma or at the intersection of Highways 10 and I-40
Gore, Oklahoma

from

Outfall 01F:
Latitude N 35° 30' 02.422'', Longitude W 95° 05' 32.824''
SE¼, SW¼, NW¼, Section 21, Township 12N, Range 21EIM,
Sequoyah County, Oklahoma

Outfall 001(Internal):
Latitude N 35° 30' 00'', Longitude W 95° 05' 01''
NW¼, NE¼, SE¼, Section 21, Township 12N, Range 21EIM,
Sequoyah County, Oklahoma

Outfall 008 (Internal):
Latitude N 35° 30' 01'', Longitude W 95° 05' 19''
SE¼, SE¼, NW¼, Section 21, Township 12N, Range 21EIM,
Sequoyah County, Oklahoma

to receiving waters identified as: the headwaters of the Lower Illinois River in Stream Segment 121700 of the Middle Arkansas River Basin (WBID No 121700010010) in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, III, and IV, and the Appendix, hereof.

The above-referenced facility is also authorized to treat/dispose of wastewater in five (5) total retention surface impoundments and eleven (11) flow through surface impoundments as described in Appendix 1, and to land apply treated wastewater as described in Appendix 2.

Issuance of this permit in no way or in any respect affects the permittee's civil or criminal responsibility regarding disposal and/or discharges of wastewater, except with respect to the permittee's legal responsibility under the OPDES Act and Department Rules.

This permit shall become effective on July 1, 2005.

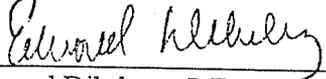
This permit replaces and/or supersedes permit OK0000191 issued on December 21, 1998, with an effective date of January 1, 1999.

This permit and the authorization to discharge shall expire at midnight, on June 30, 2010.

This is to certify that the wastewater discharges set forth in this permit comply with the requirements of Oklahoma's Water Quality Standards, as amended, provided the permittee does not exceed the effluent limitations set forth in this permit.

Issued this 27th day of June, 2005.

For Oklahoma Department of Environmental Quality



Edward Dührberg, P.E., Acting Manager
Industrial Permits Section
Water Quality Division



Jon L. Craig, Director
Water Quality Division

**PART I
 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Outfall 01F

During the period beginning the effective date and lasting through the expiration date, the permittee is authorized to discharge from Outfall 01F. The discharge consists of commingled wastewater from internal monitoring points 001 and 008.

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

PARAMETERS	DISCHARGE LIMITATIONS			
	MASS LOADINGS (lbs/day unless otherwise specified)		CONCENTRATION / OTHER UNITS (mg/L unless otherwise specified)	
	MONTHLY AVERAGE	DAILY MAXIMUM	MONTHLY AVERAGE	DAILY MAXIMUM
Flow STORET: 50050	Report MGD	Report MGD	N/A	N/A

PARAMETERS	MONITORING REQUIREMENTS	
	MEASUREMENT FREQUENCY	SAMPLE TYPE
Flow	Daily (1)	Estimate (2)

NOTE: See Parts II, III and IV for Additional Requirements.

pH (STORET: 00400) shall not be required to be monitored at Outfall 01F; instead, it shall be monitored and reported at internal Outfalls 001 and 008 as specified below for those outfalls.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

There shall be no discharge of visible sheen of oil or globules of oil or grease.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

Outfall 01F: Flow shall be measured independently at internal Outfalls 001 and 008, at locations described below for those individual outfalls.

Footnote:

- (1) Daily flow for Outfall 01F shall be calculated as the sum of the recorded daily flows at internal monitoring points 001 and 008.
- (2) When discharging

Outfall 001 (Internal)

During the period beginning the effective date and lasting through the expiration date, the permittee is authorized to discharge from Outfall 001. The discharge consists of raw water basin overflow, excess water bypass of Tenkiller Reservoir water, process area stormwater, stormwater overflow from the South Yellowcake sump emergency overflow, Calcium Fluoride Clarifier overflow, and the laundry.

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

PARAMETERS	DISCHARGE LIMITATIONS			
	MASS LOADINGS (lbs/day unless otherwise specified)		CONCENTRATION / OTHER UNITS (mg/L unless otherwise specified)	
	MONTHLY AVERAGE	DAILY MAXIMUM	MONTHLY AVERAGE	DAILY MAXIMUM
Flow STORET: 50050	Report MGD	Report MGD	Report MGD	Report MGD
Ammonia (as N) STORET: 00620	25	100	2.6	10.5
Fluoride STORET: 00951	30	75	3.2	7.9
Nitrate-Nitrogen (as N) STORET: 00610	75	300	7.9	32
Total Suspended Solids STORET: 00530	543	616	57	114
Radium 226 STORET: 09501	N/A	N/A	Report	30 pCi/l
COD STORET: 00340	N/A	N/A	Report	Report
Uranium, Total STORET: 01326	N/A	N/A	Report	300 pCi/l
Thorium 230 STORET: 26501	N/A	N/A	N/A	100 pCi/l
pH STORET: 00400	N/A	N/A	between 6.0 s.u. - 9.0 s.u.	

PARAMETERS	MONITORING REQUIREMENTS	
	MEASUREMENT FREQUENCY (1)	SAMPLE TYPE
Flow	Continuous	Record
Ammonia (as N)	1 / Month	24 hour Comp.
Fluoride	1 / Week	24 hour Comp.
Nitrate-Nitrogen (as N)	1 / Week	24 hour Comp.
Total Suspended Solids	1 / Week	24 hour Comp.
Radium 226	1/Month	24 hour Comp.
COD	1/Month	24 hour Comp.
Uranium, Total	1/Month	24 hour Comp.
Thorium 230	1/Month	24 hour Comp.
pH	Daily	in-situ meter

FOOTNOTE(S):

NOTE: See Parts II, III and IV for Additional Requirements.

(1) When discharging

There shall be no discharge of floating solids or visible foam in other than trace amounts.

There shall be no discharge of visible sheen of oil or globules of oil or grease.

Oil and grease shall not be present in quantities that adhere to stream banks and coat bottoms of water courses or which cause deleterious effects to the biota.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

Outfall 001: At the Parshall flume, in the NW¼, NE¼, SE¼, Section 21, Township 12N, Range 21 EIM, Sequoyah County, Oklahoma at Latitude N 35° 30' 00'', Longitude W 95° 05' 01''N.

Background monitoring of the Lower Illinois River in Stream Segment 121700 of the Middle Arkansas River Basin (WBID No 121700010010) shall be conducted for a period of one year after the effective date of this permit for the following parameters:

PARAMETERS	MONITORING REQUIREMENTS	
	MEASUREMENT FREQUENCY	SAMPLE TYPE
Cadmium, Total	1/Month	Grab
Mercury, Total	1/Month	Grab

Whole Effluent Toxicity Reporting and Monitoring Requirements

During the period beginning the effective date of the permit and lasting through the expiration date, the permittee is authorized to discharge from Outfall TX1 (functionally identical to Outfall 001). The discharge consists of raw water basin overflow and excess water bypass of Tenkiller Reservoir water, process area stormwater, stormwater overflow from the South Yellowcake sump emergency overflow, calcium fluoride clarifier overflow, and the laundry.

**Whole Effluent Toxicity Reporting and Monitoring Requirements
 (Outfall TX1)**

Effluent Characteristic			Reporting and Monitoring Requirements ^a		
Test	Critical Dilution ^f	Parameter	48-hour Min	Testing Frequency ^b	Sample Type
Routine Testing <i>Daphnia pulex</i> , 48-hour acute LC ₅₀ static renewal, freshwater	100%	Pass/Fail Survival [TIM3D]	Report	1/quarter ^c	24-hr comp
		LC ₅₀ Effluent Conc [TAM3D]	Report		
		% Mortality at 100% Effluent [TJM3D]	Report		
Routine Testing <i>Pimephales promelas</i> (Fathead minnow), 48-hour acute LC ₅₀ static renewal, freshwater	100%	Pass/Fail Survival [TIM6C]	Report	1/quarter ^c	24-hr comp
		LC ₅₀ Effluent Conc [TAM6C]	Report		
		% Mortality at 100% Effluent [TJM6C]	Report		
Retesting	Retest #1 [22415] ^d		Report	As required ^e	24-hr comp
	Retest #2 [22416] ^d		Report		

^a See Part II, Section G, Whole Effluent Toxicity Testing, for additional monitoring and reporting conditions.
^b See provision for monitoring frequency reduction after the second year (Part II, Section G, Item 5).
^c Results of retests conducted pursuant to prior test failure shall not be submitted on DMRs in lieu of routine test results (see Part II, Section G, Item 2.a).
^d Applies to either or both test species, according to results of test failure triggering monthly retests.
^e Monthly retesting required only if routine test for reporting period (for either species) fails.
^f All acute WET testing shall use the dilution series specified in Part II, Section G, Item 1.

D. pulex whole effluent toxicity reporting and monitoring requirements apply beginning the effective date of this permit.

P. promelas (Fathead minnow) whole effluent toxicity reporting and monitoring requirements apply beginning the effective date of this permit.

WET testing summary reports: Reports of all WET testing initiated, regardless of whether such tests are carried to completion, shall follow the requirements of Part II, Section G, Item 4.

b. Concurrent Testing Provision for Acute WET Testing

Concurrent analysis of total ammonia and pH is required for each individual effluent sample collected for acute WET testing or retesting of the Fathead minnow species. Reporting of concurrent testing results shall be in accordance with the following requirements. Results shall also be submitted in or concurrently with each WET test report.

**Concurrent Effluent Testing for Acute WET Tests – Reporting Requirements
 Outfall TX1**

Effluent Characteristic	Concentration			Monitoring Requirements	
	Daily Min	Monthly Avg	Daily Max	Monitoring Frequency ^a	Sample Type
Ammonia, total (mg/l) ^b [STORET 00610]	Report	Report	Report	1/quarter	24 hr comp ^c
pH (std units) ^b [STORET 00400]	Report	N/A	Report	1/quarter	Measured in each composite effluent sample, including static renewals, just prior to first use ^c

^a See provision for WET testing monitoring frequency reduction after second (Part II Section G, Item 5).

^b Report only those effluent samples collected for WET testing of the Fathead minnow species. Samples collected for WET testing purposes, including static renewals, shall be of sufficient volume to allow for the required concurrent analyses in addition to the WET testing itself. Samples sent directly to WET testing laboratories shall not undergo any preservation other than refrigeration to 4 ° C prior to arrival and processing at the WET testing laboratory.

^c Two sets of samples for concurrent analyses are required for ammonia and pH:

Concurrent ammonia analyses for the table above must be performed on composite samples that are properly preserved and delivered directly to a state certified analytical laboratory. These results may be included in the results for Outfall 001.

A second concurrent analysis is required for the sample that is sent to the WET testing laboratory. Just prior to first use of each composite sample for WET testing purposes, the biomonitoring laboratory shall take an adequately-sized portion of each composite sample, acidify it in accordance with preservation requirements in 40 CFR 136, and have it analyzed for total ammonia, also. The pH measurement required for the above table must be taken just prior to the acidification step. These pH readings should NOT be included in the results for Outfall 001.

b. Sampling Location

Samples taken in compliance with the monitoring requirements specified above for Outfall TX1 shall be taken at the following location: at the same location as for Outfall 001 (see Appendix for latitude/longitude and legal location).

Outfall 008 (Internal)

During the period beginning the effective date and lasting through the expiration date, the permittee is authorized to discharge from Outfall 008. The discharge consists of stormwater runoff from the DUF4 building, Pond 2, solid waste burial areas and facility grounds.

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

PARAMETERS	DISCHARGE LIMITATIONS			
	MASS LOADINGS (lbs/day unless otherwise specified)		CONCENTRATION / OTHER UNITS (mg/L unless otherwise specified)	
	MONTHLY AVERAGE	DAILY MAXIMUM	MONTHLY AVERAGE	DAILY MAXIMUM
Flow STORET: 50050	Report MGD	Report MGD	Report MGD	Report MGD
Ammonia (as N) STORET: 00620	N/A	N/A	Report	10.5
Fluoride STORET: 00951	N/A	N/A	Report	7.9
Nitrate-Nitrogen (as N) STORET: 00610	N/A	N/A	Report	32
Total Suspended Solids STORET: 00530	N/A	N/A	Report	114
Radium 226 STORET: 09501	N/A	N/A	Report	30 pCi/l
COD STORET: 00340	N/A	N/A	Report	Report
Selenium, Total STORET: 01147	N/A	N/A	Report	Report
Uranium, Total STORET: 01326	N/A	N/A	Report	300 pCi/l
Thorium 230 STORET: 26501	N/A	N/A	N/A	100 pCi/l
pH STORET: 00400	N/A	N/A	between 6.0 s.u. - 9.0 s.u.	

PARAMETERS	MONITORING REQUIREMENTS	
	MEASUREMENT FREQUENCY (1)(2)	SAMPLE TYPE
Flow	Continuous	Record
Ammonia (as N)	1 / Month	24 hour Comp.
Fluoride	1 / Week	24 hour Comp.
Nitrate-Nitrogen (as N)	1 / Week	24 hour Comp.
Total Suspended Solids	1 / Week	24 hour Comp.
Radium 226	1/Month	24 hour Comp.
COD	1/Month	24 hour Comp.
Selenium, Total	1 / Month	24 hour Comp.
Uranium, Total	1/Month	24 hour Comp.
Thorium 230	1/Month	24 hour Comp.
pH	Daily	in-situ meter

(1) During a given month, if all storm water runoff is diverted to Surface Impoundment T02 (Pond 5) for land application, the permittee shall report "No Discharge" on the DMR for Outfall 008 for that month. If any stormwater is discharged from Outfall 008, the permittee shall monitor the discharge in accordance with the above discharge limitations and monitoring requirements.

(2) When discharging.

(3) See Part II, Paragraph F.

FOOTNOTE(S):

NOTE: See Parts II, III and IV for Additional Requirements.

There shall be no discharge of floating solids or visible foam in other than trace amounts.

There shall be no discharge of visible sheen of oil or globules of oil or grease.

Oil and grease shall not be present in quantities that adhere to stream banks and coat bottoms of water courses or which cause deleterious effects to the biota.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s):

Outfall 008: At the v-notch weir, in the SE¼, SE¼, NW¼, Section 21, Township 12N, Range 18E1M, Muskogee County, Oklahoma, at Latitude N 35° 30' 01'', Longitude W 95°05'19''.

SECTION B. SCHEDULE OF COMPLIANCE

The permittee shall achieve compliance with the effluent limitations specified for discharges in accordance with the following schedule: None.

SECTION C. REPORTING OF MONITORING RESULTS

Monitoring results shall be reported in accordance with the provisions of Part III.E.4 of the permit. Monitoring results obtained during the previous month shall be summarized and reported on the Discharge Monitoring Report (DMR) forms postmarked no later than the 15th day of the following month. If no discharge occurs during the reporting period, DMR forms stating "No Discharge" shall be submitted according to the above schedule.

The first report is due on August 15, 2005.

PART II OTHER PERMIT REQUIREMENTS

- A. The permittee is hereby given notice that this permit is in all respects subject to compliance with and actions under any and all applicable and relevant terms, conditions, provisions and requirements and any and all amendments of the laws of the State of Oklahoma, the Department of Environmental Quality's Rules, and Oklahoma's Water Quality Standards. The absence of any express reference within this permit of any particular statutory requirement, rule(s), regulation(s), or standard(s) shall in no respect be deemed or construed to exempt or preclude the application of such requirement, rule(s), regulation(s), or standard(s) to this permit or the permittee. By the approval, grant and issuance of this permit, the permittee acknowledges receipt of true, correct and current copies of the Department of Environmental Quality's Rules, provided, however, that the permittee further acknowledges that any and all amendments thereto shall become part of this permit.
- B. REOPENER CLAUSE
- This permit may be reopened for modification or revocation and reissuance to require additional monitoring and/or effluent limitations where actual or potential exceedances of State water quality criteria are determined to be the result of the permittee's discharge to the receiving water(s), or a Total Maximum Daily Load is established for the receiving stream(s), or when required as technology. Modification or revocation and reissuance of the permit shall follow regulations listed at 40 CFR Part 124.5.
- C. The effluent characteristic "Total Radium 226" shall be measured by Method 706 "Radium 226 in Water" in accordance with procedures discussed for Total Radium 226 in Standard Methods for the Examination of Water and Wastewater, or an equivalent method.
- D. All laboratory analyses for the parameters specified in this permit must be performed by a laboratory certified by the Oklahoma Department of Environmental Quality for those parameters.
- E. Unless otherwise specified in this permit, effluent and/or upstream monitoring shall be conducted according to analytical, apparatus and materials, sample collection, preservation, handling, etc., procedures listed at 40 CFR Part 136 in effect on the effective date of this permit. Appendices A, B, and C to 40 CFR Part 136 are specifically referenced as part of this requirement. Amendments to 40 CFR Part 136 promulgated after the effective date of this permit shall supersede these requirements as applicable.
- F. For Outfalls 001 and 008, Uranium and Thorium shall be monitored at a minimum frequency of 1/Month by grab sample, when discharging. Samples collected in accordance with any and all conditions and requirements imposed by the NRC under License No. 408027SUB1010 or any other NRC-regulated plans, agreements or orders may be used to fulfill this requirement. If the permittee monitors Uranium more frequently than required by this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased monitoring frequency shall also be indicated on the DMR.
- G. WHOLE EFFLUENT TOXICITY TESTING
(48-HOUR ACUTE LC₅₀, STATIC RENEWAL, FRESHWATER)
1. SCOPE AND METHODOLOGY
- a. The permittee shall test the effluent for toxicity in accordance with the provisions in this section, which apply individually and separately to the outfalls listed below. No samples or portions of samples from one outfall may be composited with samples or portions of samples from another outfall. The permittee shall biomonitor for *Daphnia pulex* and *Pimephales promelas* in accordance with the WET testing frequencies prescribed in Part I. The permittee is encouraged to perform required biomonitoring activities as early in the reporting period as is practical so as to ensure sufficient time remains in the reporting period should repeat tests be

necessary. Intervals between test initiation dates shall be a function of the required testing frequency, as follows:

- Monthly retests: No less than 20 days and no more than 40 days.
- Quarterly: No less than 2 months and no more than 4 months.
- Semi-annually: No less than 4 months and no more than 8 months.

Provisions for performance-based monitoring frequency reductions are contained in Item 5 of this section.

APPLICABLE TO OUTFALL(S): 001

REPORTED ON DMR AS OUTFALL(S): TX1

CRITICAL DILUTION: 100%

EFFLUENT DILUTION SERIES (ALL TESTS): 32%, 42%, 56%, 75%, 100%

SAMPLE TYPE: Defined at Part I

TEST SPECIES/METHODS: 40 CFR 136, except for changes required by EPA, Region 6.

Daphnia pulex acute static renewal 48-hour definitive toxicity test, Method 2021.0, EPA-821-R-02-012 (October 2002), or latest update thereof. A minimum of five (5) replicates with eight (8) organisms per replicate must be used in the control and in each effluent dilution of this test.

Pimephales promelas (Fathead minnow) acute static renewal 48-hour definitive toxicity test, Method 2000.0, EPA-821-R-02-012 (October 2002), or latest update thereof. A minimum of five (5) replicates with eight (8) organisms per replicate must be used in the control and in each effluent dilution of this test.

b. ACUTE TEST FAILURE

Acute test failure (LC₅₀ test) is defined as 50% or more lethality at 48 hours to test organisms at any effluent concentration. The 48-hour LC₅₀ effluent value must be >100% to indicate a passing test. Any 48-hour LC₅₀ effluent value of 100% or less will constitute a test failure.

c. REOPENER CLAUSE

This permit may be reopened to require whole effluent toxicity limits, chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity.

2. TESTING REQUIREMENTS DUE TO ACUTE TEST FAILURE

Upon becoming aware of the failure of any test, the permittee shall notify the DEQ Water Quality Division Toxics Coordinator immediately at (405) 702-8100, and in writing within 5 working days of the test failure with a summary of the results of and any other pertinent circumstances associated with the failed test.

- a. Whenever there is a test failure for either species during routine testing, the frequency of testing for the affected species shall automatically increase to, or continue at, as appropriate, the WET testing frequency prescribed in Part I for the remaining life of the permit. In addition, two (2) additional monthly tests (retests) of the affected species are required. The two additional tests shall be conducted monthly during the next two consecutive months. The permittee shall not substitute either of the two additional tests for routine toxicity

testing. A full laboratory report for the failed routine test and both additional tests, if required, shall be prepared and submitted to the DEQ in accordance with procedures outlined in Item 4 of this section.

b. PERSISTENT LETHALITY

If either of the two additional tests result in an LC_{50} value less than or equal to 100%, persistent lethality is exhibited, and the permittee shall initiate a Toxicity Reduction Evaluation (TRE) as specified in Item 6 of this section. The TRE initiation date will be the test completion date of the first failed retest. The permittee may request a temporary exemption to this TRE-triggering criterion if, and only if, the permittee is under a compliance schedule defined in an OPDES permit or a Section 308 order to effect aquatic toxicity reduction measures, regardless of whether such measures resulted from a previous TRE.

c. INTERMITTENT LETHALITY

If both additional tests result in an LC_{50} value of greater than 100%, persistent lethality is not exhibited. However, if any routine test failure occurs within 18 months of a prior test failure, intermittent lethality is exhibited, and the permittee may be required by the DEQ to initiate a TRE, as described in Item 6 of this section, based on the severity and pattern of such lethal effect over time.

d. SUSPENSION OF RETESTING REQUIREMENTS DURING TRE

Retesting requirements in Item 2.a are temporarily suspended upon submittal of a TRE Action Plan. Such suspension of retesting requirements applies only to the species under evaluation by a TRE and only to the period during which a TRE is being performed.

3. REQUIRED TOXICITY TESTING CONDITIONS

a. Test Acceptance

The permittee shall repeat a test, including the control and all effluent dilutions, if the procedures and quality assurance requirements defined in the test methods or in this permit are not satisfied, including the following additional criteria:

- (1) The toxicity test control (0% effluent) must have survival equal to or greater than 90%.
- (2) The percent coefficient of variation between replicates shall be 40% or less in the control (0% effluent) for the *Daphnia pulex* and Fathead minnow survival tests.
- (3) The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant lethality is exhibited in the *Daphnia pulex* and Fathead minnow survival tests.
- (4) As documented at test termination, no more than forty (40) percent of the daphnid test organisms in any replicate of any effluent dilution or in any replicate of the control (0% effluent) shall be male.

Test failure may not be construed or reported as invalid due to a coefficient of variation value for lethality of greater than 40% in the 100% effluent concentration. A repeat test shall be conducted within the reporting period of any test determined to be invalid.

b. Statistical Interpretation

For the *Daphnia pulex* survival test and the Fathead minnow survival test, the statistical analyses used to determine the LC_{50} shall be in accordance with the methods described in EPA-821-R-02-012 or most recent update thereof.

c. Dilution Water

- (1) Dilution water used in the toxicity tests will be receiving water collected as close to the point of discharge as possible but unaffected by the discharge. The permittee shall substitute synthetic dilution water of similar pH, hardness and alkalinity to the closest downstream perennial water where the toxicity test is conducted on an effluent discharge to a receiving stream classified as intermittent or to a receiving stream with no flow due to zero flow conditions.
- (2) If the receiving water is unsatisfactory as a result of instream toxicity (fails to fulfill the test acceptance criteria of Item 3.a.), the permittee must submit the test results exhibiting receiving water toxicity with the full test report required in Item 4 below and may thereafter substitute synthetic dilution water for the receiving water in all subsequent tests, provided the unacceptable receiving water test met the following stipulations:
 - (a) a synthetic dilution water control which fulfills the test acceptance requirements of Item 3.a. was run concurrently with the receiving water control;
 - (b) the test indicating receiving water toxicity was carried out to completion (i.e., 48 hours); and
 - (c) the synthetic dilution water had a pH, hardness and alkalinity similar to that of the receiving water or closest downstream perennial water not adversely affected by the discharge, provided the magnitude of these parameters will not cause toxicity in the synthetic dilution water.

d. Samples and Composites

- (1) Unless grab sampling is specifically authorized in Part I of the permit, the permittee shall collect two flow-weighted 24-hour composite samples representative of the flows during normal operation from the outfall(s) listed at Item 1.a above. If grab sampling is authorized, all requirements specified below for composite sampling also pertain to grab sampling. In such cases, collection of the grab sample is considered equivalent to collection of the last portion of a composite sample. Unless otherwise specified in Part I of the permit, a 24-hour composite sample consists of a minimum of 12 effluent portions collected at equal time intervals representative of a 24-hour operating day and combined proportional to flow or a sample continuously collected proportional to flow over a 24-hour operating day.
- (2) The first composite effluent sample shall be used to initiate each test. The permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 72 hours. The permittee must have initiated the toxicity test within 36 hours after the collection of the last portion of the first composite sample. Samples shall be chilled to 4 degrees Centigrade during collection, shipping, and/or storage.
- (3) The permittee must collect the composite samples such that the effluent samples are representative of any periodic episode of chlorination, biocide usage or other potentially toxic substance discharged on an intermittent basis.
- (4) If it is anticipated that flow from the outfall being tested may cease prior to collection of the second effluent sample, the permittee must ensure that the first composite effluent sample is of sufficient volume to complete the required testing with daily renewal of effluent. The abbreviated effluent composite sample collection duration, the static renewal protocol associated with an abbreviated sample collection, and a summary of the circumstances justifying collection of an abbreviated sample must be adequately documented in the full test report required in Item 4 of this section. The DEQ reserves the right to require a retest and/or consider the permittee in violation of this permit if the basis offered for justification of an abbreviated sample is insufficient, flawed, or in any way reflects an effort on the part of the permittee to avoid test failure by use of an abbreviated sample.

4. REPORTING

- a. The permittee shall prepare a full report of the results of all tests conducted pursuant to this section in accordance with the Report Preparation Section of EPA-821-R-02-012 for every valid or invalid toxicity test initiated, whether carried to completion or not. The permittee shall retain each full report pursuant to the records retention provisions of Part III of this permit. The permittee shall submit full test reports for all tests initiated, regardless of whether the tests are carried to completion, to the DEQ no later than the 15th day of the month following completion of the test, including any test which is considered invalid, is terminated early for any reason, or which indicates receiving water toxicity.
- b. A valid test for each species (excluding retests) must be reported on the DMR for each reporting period specified in Part I of this permit, unless the permittee is performing a TRE, which may increase the frequency of testing and reporting. A DMR must be submitted by the 15th day of the month following completion of any valid test. The full report for the test (see Item 4.a above) shall be submitted along with the DMR. If a survival test failure is experienced for either test species, two copies of the blank DMR for the applicable reporting period shall be made in advance of completing and submitting the DMR so that the DMR copies may be used to report results of the required retests. If more than one valid test (excluding retests) is performed on a species during a reporting period, the permittee shall report the lowest LC₅₀ effluent concentrations over all such tests as the 48-hour minimum on the DMR for the reporting period in question, denoting the specific dates of each test in the comments section of the DMR. Under no circumstance shall the monitoring/reporting period dates at the top of the DMR form be altered.

If any test results in anomalous LC₅₀ findings (i.e., it indicates an interrupted dose response across the dilution series), the DEQ recommends that the permittee contact its DEQ toxicity coordinator for a technical review of the test results prior to submitting the full test report and DMR. A summary of all tests initiated during the reporting period, including invalid tests, repeat tests and retests, shall be attached to the reporting period DMR for DEQ review. A test is a REPEAT test if it is performed as a result of a previously invalid test. A test is a RETEST if it is performed as a result of a previously failed test.

- (1) The reporting period test summary attached to the DMR shall be organized as follows:
 - (a) Invalid tests (basis for test invalidity must be described)
 - (b) Valid tests (other than retests) initiated during current reporting period
 - (c) Valid retests for tests failed during previous reporting period (if not submitted in the previous reporting period test summary)
 - (d) Valid retests for tests failed during current reporting period
- (2) The following information shall be listed in the reporting period test summary for each valid test in categories (b) through (d) in Item 4.b(1) above:
 - (a) Test species
 - (b) Date of test initiation at laboratory
 - (c) Results of all concurrent effluent analyses specified in Part I of this permit
 - (d) All test result parameters for the test species specified in Item 4.c below
- c. The permittee shall report the following results for all VALID routine toxicity tests (excluding retests) on the DMR(s) for that reporting period in accordance with Item 4.b above and Part III of this permit.

(1) *Daphnia pulex*

- (a) Parameter TIM3D: If the *Daphnia pulex* 48-hour LC₅₀ for survival is equal to or less than 100%, report a "1"; otherwise, report a "0".
- (b) Parameter TAM3D: Report the *Daphnia pulex* 48-hour LC₅₀ value for survival.
- (c) Parameter TJM3D: Report the *Daphnia pulex* 48-hour percent mortality in the 100% effluent concentration.

(2) *Pimephales promelas* (Fathead Minnow)

- (a) Parameter TIM6C: If the Fathead minnow 48-hour LC₅₀ for survival is equal to or less than 100%, report a "1"; otherwise, report a "0".
- (b) Parameter TAM6C: Report the Fathead minnow 48-hour LC₅₀ value for survival.
- (c) Parameter TJM6C: Report the Fathead minnow 48-hour percent mortality in the 100% effluent concentration.

d. The permittee shall report the following results for all VALID toxicity retests on the DMR(s) for that reporting period.

- (1) Retest #1 (STORET 22415): If the first monthly retest following failure of a routine test for either test species results in a 48-hour LC₅₀ for survival equal to or less than 100%, report a "1"; otherwise, report a "0".
- (2) Retest #2 (STORET 22416): If the second monthly retest following failure of a routine test for either test species results in a 48-hour LC₅₀ for survival equal to or less than 100%, report a "1"; otherwise, report a "0".

Results of all retests shall be reported on a copy of the DMR for the reporting period (see Item 4.b above) in which the triggering routine test failure is experienced. Such retest results (using STORET codes 22415 and 22416 only) shall be submitted by no later than the 15th day of the month following completion of the retest. The full report for the retest (see Item 4.a above) shall be submitted along with the retest DMR. Even if a retest cannot be conducted before the end of the reporting period for which it is required (due to test initiation interval requirements), the retest results shall still be reported for the reporting period in which the triggering test failure is experienced. Under no circumstance shall the monitoring/reporting period dates on a supplemental retest DMR ever be modified. The permittee shall indicate the retest date in the comments section of the supplemental DMR and insert the date the DMR is submitted in the lower right hand corner. In this manner, both retests are reported for the same reporting period as the failed routine test triggering the retests. If retesting is not required during a given reporting period, the permittee shall leave the DMR retest fields blank.

5. MONITORING FREQUENCY REDUCTION

- a. The permittee may apply for a testing frequency reduction upon the successful completion of two years of testing for both test species with no lethal effects demonstrated in any of the effluent dilutions. Certification in accordance with Item 5.b of this section shall be submitted at the time of such application for monitoring frequency reduction. If granted, the monitoring frequency may be reduced to not less than once per 6 months (once each during the periods June 1 through September 30 and December 1 through March 31) for both test species.

- b. **CERTIFICATION:** The permittee must certify in writing that no test failures have occurred for the species for which the monitoring frequency reduction is being requested and that all tests meet all test acceptability criteria in Item 3.a. above. In addition, the permittee must provide a summary of all tests initiated during the period of certification including test initiation dates, species, test acceptability parameters, LC₅₀ concentrations, percent mortality at the 100% effluent dilution, and coefficients of variation for the control and 100% effluent dilution. If the certification is approvable, the DEQ will issue a letter of confirmation of the monitoring frequency reduction. A copy of the confirmation letter will be forwarded to the DEQ's Permit Compliance System unit to update the permit reporting requirements. The DEQ may deny the certification if it determines that, during the period for which the certification is submitted, there were errors in meeting test acceptability requirements, errors in statistical interpretation affecting test results reported on DMRs, late submissions of test reports or submissions of substantively incomplete test reports. If the certification is denied, the permittee shall continue biomonitoring of the affected test species at a frequency of once per quarter until the permit is reissued.
- c. **SURVIVAL FAILURES AFTER A MONITORING FREQUENCY REDUCTION:** If any test fails the survival endpoint at any time after the granting of a monitoring frequency reduction, two monthly retests are required in accordance with Item 2 of this section (unless the permittee is performing a TRE) and the monitoring frequency for the affected test species shall be increased to the WET testing frequency prescribed in Part I until the permit is reissued.
- d. This monitoring frequency reduction applies only until the expiration date of this permit, at which time the monitoring frequency for both test species reverts to the WET testing frequency prescribed in Part I until the permit is reissued.

6. TOXICITY REDUCTION EVALUATION (TRE)

- a. Within ninety (90) days of confirming lethality in the retests for a test species, the permittee shall submit to the DEQ a TRE Action Plan and Schedule for conducting a Toxicity Reduction Evaluation (TRE). The TRE Action Plan shall specify the approach and methodology to be used in performing the TRE. A Toxicity Reduction Evaluation is an investigation intended to determine those actions necessary to achieve compliance with water quality-based effluent limits by reducing an effluent's toxicity to an acceptable level. A TRE is defined as a step-wise process which combines toxicity testing and analyses of the physical and chemical characteristics of a toxic effluent to identify the constituents causing effluent toxicity and/or treatment methods which will reduce the effluent toxicity. The TRE Action Plan shall lead to the successful elimination of effluent toxicity at the critical dilution and include the following:

- (1) **Specific Activities.** The plan shall detail the specific approach the permittee intends to utilize in conducting the TRE. The approach may include toxicity characterizations, identifications and confirmation activities, source evaluation, treatability studies, or alternative approaches. When the permittee conducts Toxicity Characterization Procedures, the permittee shall perform multiple characterizations and follow the procedures specified in the documents "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures" (EPA-600/6-91/003) and "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I" (EPA-600/6-91/005F), or alternate procedures. When the permittee conducts Toxicity Identification Evaluations and Confirmations, the permittee shall perform multiple identifications and follow the methods specified in the documents "Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/080) and "Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity" (EPA/600/R-92/081), as appropriate.

The documents referenced above may be obtained through the National Technical Information Service (NTIS) by phone at 1-800 553-6847, or by writing:

U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161

- (2) Sampling Plan (e.g., locations, methods, holding times, chain of custody, preservation, etc.). The effluent sample volume collected for all tests shall be adequate to perform the toxicity test, toxicity characterization, identification and confirmation procedures, and conduct chemical specific analyses when a probable toxicant has been identified. Where the permittee has identified or suspects specific pollutant(s) and/or source(s) of effluent toxicity, the permittee shall conduct, concurrent with toxicity testing, chemical specific analyses for the identified and/or suspected pollutant(s) and/or source(s) of effluent toxicity. Where lethality was demonstrated within 48 hours of test initiation, each composite sample shall be analyzed independently. Otherwise, the permittee may substitute a composite sample, comprised of equal portions of the individual composite samples, for the chemical specific analysis.
 - (3) Quality Assurance Plan (e.g., QA/QC implementation, corrective actions, etc.).
 - (4) Project Organization (e.g., project staff, project manager, consulting services, etc.).
- b. The permittee shall initiate the TRE Action Plan within thirty (30) days of plan and schedule submittal. The permittee shall assume all risks for failure to achieve the required toxicity reduction.
 - c. The permittee shall submit to the DEQ a quarterly TRE Activities Report with the Discharge Monitoring Report in months to be specified, containing information on toxicity reduction evaluation activities including:
 - (1) any data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;
 - (2) any studies/evaluations and results on the treatability of the facility's effluent toxicity; and
 - (3) any data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant lethality at the critical dilution.
 - d. The permittee shall submit to the DEQ a Final Report on Toxicity Reduction Evaluation Activities no later than twenty-eight (28) months from confirming lethality in the retests, which provides information pertaining to the specific control mechanism selected that will, when implemented, result in reduction of effluent toxicity to a 48-hour LC₅₀ effluent value of greater than 100%. The report will also provide a specific corrective action schedule for implementing the selected control mechanism.
 - e. Quarterly testing during the TRE is a minimum monitoring requirement. The DEQ recommends that permittees required to perform a TRE not rely on quarterly testing alone to ensure success in the TRE, and that additional tests be performed to capture toxic samples for identification of toxicants. Failure to identify the specific chemical compound causing toxicity test failure will normally result in a permit limit for whole effluent toxicity per federal regulations at 40 CFR 122.44(d)(1)(v).

H. SURFACE IMPOUNDMENT REQUIREMENTS

1. Freeboard Requirements [OAC 252:616-7-1(7)]

A minimum freeboard of three (3) feet shall be maintained on all Total Retention Surface impoundments and a minimum freeboard of two (2) feet shall be maintained on all Flow Through Surface impoundments.

2. The permit may be reopened to implement and/or require impoundment modifications, additions, extensions, and/or operational changes; monitoring and reporting; reclassification of wastes; sludge management plans; best management practices; closure plans; and/or other appropriate actions.

3. Depth to Groundwater

The minimum depth to groundwater shall be fifteen (15) feet in accordance with OAC 252:616-7-1(4). In accordance with OAC 252:616-7-1(4)(B), the DEQ may waive the fifteen (15) foot requirement based on the use of enhanced liners that will protect waters of the state. The average depth to groundwater from the base of the impoundment system is approximately 21'. Since these impoundments are 25" deep, the base of the impoundments is below the water table indicating that the separation requirements have not been satisfied. However, since the impoundments were constructed with clay or clay and a Hypalon (a synthetic rubber reinforced membrane) liner, and constitute an enhanced liner system that will protect groundwater, a variance to the 15' separation requirement is, hereby, granted.

4. At such time as Surface Impoundments T01 – T04 and F01-F11 are to be permanently taken out of service or at such time as the contents of any of these Surface Impoundments pose a risk to the environment or waters of the State, the owner or operator of the facility shall follow all closure requirements contained in OAC 252:616-13.

5. Solids, sludge or other pollutants removed in the course of treatment or control of wastewater shall be disposed of in a State-approved industrial waste disposal site or sent for recycling.

If any such industrial wastes are removed from the facility, the permittee shall keep accurate records that include the following information:

- a. Name and address of company hauling waste.
- b. The type and amount of waste hauled.
- c. The final disposal site of waste hauled.

Upon request, the above records shall be made available to the Department's staff for review.

6. In all other respects, Surface Impoundments T01 – T13 and F01-F11 shall be subject to standard conditions for surface impoundments contained in OAC 252:616, Subchapters 5, 7, and 13, including but not limited to requirements for construction, operation, maintenance, monitoring and closure.

I. LAND APPLICATION

1. Specific Requirements for Land Application of Wastewater and Sludge

- a. The hydraulic loading at land application sites L01-L11 (consisting of 320.2 acres of Sequoyah Fuels owned land as described in Appendix 2) shall be maintained to prevent surface runoff of applied wastewater and to prevent persistent flooding (persistent flooding is defined as soil which remains saturated for more than 24 hours). The annual Nitrogen Loading rate shall not exceed a total of 700 lbs/acre/yr of which 423 lbs/acre/yr is Plant Available Nitrogen (PAN).
- b. Additional limited parameters include Radium-226 of 2 pCi/l and Uranium limits of 0.1 mg/l and annual metals loading limits as defined in OAC 252:606 which adopts by reference 40 CFR Part 503, "Standards for the Use or Disposal of Sewage Sludge" as described in the table below.
- c. The nitrogen loading at land application sites L01-L11 shall be maintained to minimize the formation and infiltration of nitrates and nitrate-producing compounds in concentrations that may impact the groundwater.
- d. Land application of wastewater shall not occur during periods of precipitation, when the soil is frozen or while the soil is saturated. The wastewater must be stored in the surface impoundments T01 and T02 until the soil is capable of receiving wastewater without persistent flooding or surface water runoff.
- e. Land application of wastewater shall not cause permanent vegetative damage or otherwise prevent growth after cessation of application of wastewater.
- f. Land application sites L01-L11 shall be managed to prevent site conditions that have the potential to impact aesthetics, including but not limited to, odors, waste piles, and sludges.
- g. The land application of wastewater shall not occur within 250 feet of a well used for potable water.
- h. The land application of wastewater shall not occur within 100 feet of a stream or body of water and shall not occur within two feet of the highest seasonal water level on a site.
- i. A 10 foot buffer zone is required between the land application site and the adjacent property boundary. A buffer is not required between adjacent sites.
- j. The permit may be reopened to implement and/or require land application modifications, additions, extensions, cessation and/or operational changes; additional monitoring and reporting (including but not limited to soil sampling); reclassification of wastes, sludge management plans; best management practices; land application site closure and/or closure plans; remediation and/or remediation plans; monitoring wells and/or subsurface monitoring plans; and/or other appropriate actions.

The following table summarizes the Land Application loading limits:

**Mass Land Application Loading Limitations
 (Units are Lbs/Acre/Year unless otherwise specified)**

Wastewater Constituent	Draft Permit
	Maximum Annual
Nitrogen, PAN	423**
Arsenic, Total*	1.79
Cadmium, Total*	1.69
Chromium, Total*	134
Copper, Total	67
Nickel, Total*	18.75
Lead, Total*	13.39
Selenium, Total*	4.46
Mercury, Total*	0.76
Zinc, Total*	125
Radium 226 (pCi/l)	2.0**
Uranium (mg/l)	0.1**

* Annual Mass Loading limit allowed by 40 CFR Part 503, "Standards for the Use or Disposal of Sewage Sludge".

** Limits established by the Nuclear Regulatory Commission (NRC) and included in the facilities NRC license.

k. Wastewater Monitoring Requirements

- (1) Each waste stream that contributes wastewater to be land applied shall be tested annually. The Permittee shall collect representative samples of each waste stream and have them analyzed for the following constituents: soil pH and the nutrients – Total Kjeldahl Nitrogen (TKN), nitrogen (N), ammonia (NH₄)-N, nitrate (NO₃)-N, potassium (K) and phosphorus (P) and the metals included in 40 CFR Part 503, "Standards for the Use or Disposal of Sewage Sludge".
- (2). Based on the results of the tests, the annual nitrogen loading rate may be adjusted to insure the plant uptake is not exceeded.

l. Soil Monitoring Requirements

(1) Soil sampling

Soil samples shall consist of a composite sample taken from sites proposed or used for the land application of sludge and wastewater. Soil testing procedures applicable for use in the local area in accordance with Oklahoma State University soil testing guidance or the local NRCS may be used. Sampling of proposed land application sites is required to determine the background concentration of constituents to be land applied for disposal.

(2) Soil monitoring.

Each land application site that receives solids, sludge or wastewater shall be tested annually to determine the residual nitrogen content. The Permittee shall collect representative soil samples from each land application site that received waste or wastewater and have them analyzed for the following constituents: soil pH and the

nutrients – Total Kjeldahl Nitrogen (TKN), nitrogen (N), ammonia (NH₄)-N, nitrate (NO₃)-N, potassium (K) and phosphorus (P) and the metals included in 40 CFR Part 503, “Standards for the Use or Disposal of Sewage Sludge”.

- (3). Based on the results of the soil tests, the annual nitrogen loading rate may be adjusted to insure the plant uptake is not exceeded.

m. Record keeping and Reporting Requirements

(1). Records. Maintain the following land application records:

- (a) location, day and hour land application began and ended, and the method of application;
- (b) analytical data, volume and source(s) of wastewater applied;
- (c) loading rates;
- (d) weather conditions during the application period;
- (e) type of crop, grass or vegetation grown on site;
- (f) pH of wastewater at beginning of application, or weekly if application exceeds seven consecutive days; and
- (g) monitoring records, including the date, time and exact place of the sampling or measurement, the name of the sampler, when analysis began, the name of the certified laboratory and the analytical results.

(2) Reporting requirements:

- (a) The owner or operator shall submit reports of monitoring and land application records by month on a quarterly basis unless otherwise specified.
- (b) The quarterly reports will be due on or before the last working day of the month following the close of each quarter (i.e., April, July, October and January).
- (c) Monitoring information shall be submitted to the DEQ on self-monitoring report (SMR) forms or other forms provided or approved by the DEQ.
- (d) The owner or operator shall submit copies of the Ammonium Nitrate Fertilizer Application Program annual completion report required by the Facility NRC license SUB-10; Docket 40-8027 to the DEQ at the same time the report is submitted to the NRC.

APPENDIX 1

Wastewater Classification and Surface Impoundment Description OAC 252:616-1-2			Liner Type OAC 252:616-7-2	Impoundment Capacity (top dimensions)	Wastewater Destination
S.I. No.	Impoundment Description	Wastewater Description			
T01	Fertilizer Pond 3W	Groundwater from 95A collection trench Class III	Compacted Clay and Hypalon liner	400 X 400 X 25' top 14,460,000 gallons	Total Retention, evaporation and land application
T02	Fertilizer Pond 3E	Out of Service (1)	Compacted Clay and Hypalon liner	400 X 400 X 25' top 18,020,000 gallons	Total Retention and evaporation
T03	Fertilizer Pond 4	Out of Service (1)	Compacted Clay and Hypalon liner	415 X 420 X 25' top 16,360,000 gallons	Total Retention and evaporation
T04	Fertilizer Pond 5	Stormwater from the Raffinate sludge storage ponds –Class III	Compacted Clay and Hypalon liner	405 X 405 X 25' top 16,360,000 gallons	Total Retention, evaporation and land application
T05	Fertilizer Pond 6	Out of Service (1)	Compacted Clay and Hypalon liner	405 X 405 X 25' top 18,020,000 gallons	Total Retention, and evaporation
F01	Pond 2	Wastewater consists of stormwater runoff from synthetic liner cover Out of Service (1)-Class III	HDPE Synthetic Liner	300 X 700 X 18' top 2,960,000 gallons	Outfall 008
F02	Clarifier 1A	Raffinate Sludge Storage, Recovered Groundwater – Class III	Compacted Clay and Hypalon liner	188 X 238 X 13' top 2,580,000 gallons	Clarifier 3A
F03	Clarifier 2A	Raffinate Sludge Storage, Recovered Groundwater- Class III	Compacted Clay and Hypalon liner	188 X 238 X 13' top 2,580,000 gallons	Clarifier 3A
F04	Clarifier 3A	Raffinate Sludge Storage, Recovered Groundwater – Class III	Compacted Clay and Hypalon liner	188 X 238 X 13' top 2,580,000 gallons	Pond 5
F05	Clarifier 4A	Raffinate Sludge Storage – Class III	Compacted Clay and Hypalon liner	188 X 238 X 13' top 2,580,000 gallons	Clarifier 3A
F06	Fluoride Holding Basin 1	Calcium Fluoride Sludge Storage – Out of Service (1) Class III	Compacted Clay	130 X 190 X 16' top 1,490,000 gallons	Outfall 008
F07	Fluoride Holding Basin 2	Calcium Fluoride Sludge Storage – Out of Service (1) Class III	Compacted Clay	150 X 220 X 9' top 1,610,000 gallons	Outfall 008
F08	North Fluoride Settling Basin	Calcium Fluoride Sludge Storage – Out of Service (1) Class III	Compacted Clay	75 X 120 X 7.5 top 370,000 gallons	Outfall 001
F09	South Fluoride Settling Basin	Calcium Fluoride Sludge Storage – Out of Service (1) Class III	Compacted Clay	75 X 120 X 7.5 top 370,000 gallons	Outfall 001

F10	Emergency Basin and North Ditch	Radiological Treatment of Stormwater Class III	Native Soil	405 X 405 X 25' top 16,360,000 gallons	Outfall 008
F11	Fluoride Clarifier	Calcium Fluoride Sludge Storage – Out of Service (1) Class III	Compacted Clay	85 X 220 X 14' top 820,000 gallons	Outfall 001

(1) These impoundments are no longer in use and closure plans have been approved but not yet implemented.

Location of Surface Impoundments

S.I.	Legal Location	Relative Location of Impoundments
T01	N/2, NW/4, SW/4, SE/4 & S/2 SE/4, NW/4, SE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Approximately 400 yds. south of the Main Processing Building
T02	N/2, NW/4, SW/4, SE/4 & S/2 SE/4, NW/4, SE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Approximately 400 yds. south of the Main Processing Building
T03	N/2, NE/4, SE/4, SE/4 & S/2 SW/4, NE/4, SE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Approximately 400 yds. south of the Main Processing Building
T04	N/2, NW/4, SW/4, SE/4 & S/2 SW/4, NW/4, SE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Approximately 400 yds. south of the Main Processing Building
T05	NE/4, SE/4, SE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Approximately 400 yds. south of the Main Processing Building
F01	SW/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located west of the Clarifier ponds
F02	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located east of Pond 2 and north of the fluoride settling ponds
F03	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located east of Pond 2 and north of the fluoride settling ponds
F04	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located east of Pond 2 and north of the fluoride settling ponds
F05	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located east of Pond 2 and north of the fluoride settling ponds
F06	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located south of the Fluoride Settling Basins
F07	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located in the Northwest corner of the facility
F08	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located south of the Clarifier A basin area
F09	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located south of the Clarifier A basin area
F10	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located within the Process area
F11	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located south of the Clarifier A basin area

APPENDIX 2
Location of Land Application Sites

Site Designation	Legal Description	Acres Available
L01- Agland # 1	A - W/2, SW, Sec 21 B - E/S, NW, NW, NW, SEC 21	58.9
L02- Agland #2	A - NE, NW, NW, SEC 21 B - E/2, SE, NW, NW, SEC 21	8.7
L03- Agland #3	A - NE, NW, SW, SEC 21 B - SW, SE, SW, SEC 21 C - W/2, SE, SE, SW, SEC 21 "	25 est
L03- Agland #4	A - E/2, SW, NE, SW, SEC 21 B - W/2, SE, NE, SW, SEC 21 C - W/2, NE, SE, SW, SEC 21	4.5
L04- North Meadow	A - E/2, NE, NE SE, SEC 21 B - E/2, SE, NE, SE, SEC 21 C - E/2, NE, SE, SE, SEC 21	13.3
L05- South Meadow	A - N/2, NE, SE, SEC 28	24.8
L06- Pond Area	A - NW, SE, SE, SEC 21 B - S/2, SW, NE, SE, SEC 21 C - N/2, SW, SE, SEC 21 D - E/2, NE, SE, SE, SEC 21 E - E/2, SE, NE, SW, SEC 21 F - E/2, NE, NE, SW, SEC 21 G - N/2, NW, NW, SE, SEC 21 H - N/2, SW, SE, SE, SEC 21 I - N/2, SE, SW, SE, SEC 21 J - N/2, SW, SE, SE, SEC 21	53.8
L07- Timber North #1	A - S/2, SE, SE, SE, SEC 16 B - SE, SW, SE, SEC 16, LESS COE C - N/2, NE, NE, SEC 21 D - N/2, NW, NE, SEC 21, LESS COE	53.7
L08- Timber North #2	A - S/2, SE, SE, SE, SEC 16 B - SE, SW, SE, SEC 16, LESS COE C - N/2, NE, NE, SEC 21 D - N/2, NW, NE, SEC 21, LESS COE	11.4
L09- Timber South #1	A - S/2, NE, NW, SE, SEC 21 B - NW, NE, SE, SEC 21 C - N/2, SW, NE, SE, SEC 21	13.8
L10- Timber South #2	A - W/2, SE, NE, SE, SEC 21 B - W/2, NE, SE, SE, SEC 21 C - SE, SE, SE, SEC 21	13.3
L11- Timber South #3	A - NW, NE, SEC 28, NORTH OF I-40 B - NW, NE, NW, SEC 28 C - S/2, NE, NE, NW, SEC 28 D - SW, NE, NW, SEC 28 E - SE, NE, NW, SEC 28, NORTH OF I-40	57.6

STATEMENT OF BASIS

ODEQ Permit Number: OK0000191

ODEQ I.D. Number: I-68000010

Applicant: Sequoyah Fuels Corporation
P.O. Box 610
Gore, OK 74435

Issuing Office: Oklahoma Department of Environmental Quality
Water Quality Division
P.O. Box 1677
Oklahoma City, OK 73101-1677

Prepared By: Don Barrett
Water Quality Division

Date Prepared: 9-16-04
revised 3-3-05

Reviewed by: Edward Dührberg, P.E., Manager
Industrial Permits Section

Date Reviewed:

Permit Action: Renewal of an expired discharge permit

I. PERMITTING BACKGROUND

The following are the chronological events leading to the issuance of this permit:

- June 21, 2005: Submit Response to Comments and draft permit for signature
- June 13, 2005: DEQ received comments on draft permit
- May 19, 2005: Sequoyah Fuels Public Notice published
- May 13, 2005: DEQ Public Notice published
- April 11, 2005: Draft permit sent to facility for courtesy review.
- March 29, 2005: Received letter from EPA declining review of the draft permit
- March 11, 2005: Draft permit sent to facility and EPA for courtesy review.
- March 3, 2005: Received additional information
- January 4, 2005: Request additional information by E-Mail
- November 24, 2004: Settlement Agreement reached with Attorney Generals office
- November 4, 2004: Received additional information
- October 25, 2004: Received comments from facility on draft permit.
- October 11, 2004: Draft permit sent to facility and EPA for courtesy review.
- September 16, 2004: Submit revised draft permit.
- August 27, 2004: Submit revised draft permit.
- August 20, 2004: Conduct Site Visit.
- August 17, 2004: DEQ received supplemental land application data.
- August 5, 2004: Submit draft permit.
- July 19, 2004: DEQ received supplemental land application data.

- July 15, 2004 DEQ received supplemental land application data.
- May 3, 2004: DEQ received partial response to incomplete letter from facility.
- March 19, 2004: DEQ received partial response to incomplete letter from facility.
- January 19, 2004: Request additional information.
- October 23, 2003: Request additional information.
- August 27, 2003: Complete letter sent.
- July 13, 2003: Notice of Filing Published.
- July 1, 2003: Application received to renew a discharge permit.

It is proposed that OPDES Permit No. OK0000191 be renewed for a 5-year term in accordance with regulations promulgated at 40 CFR Part 122.46(a) and OAC 252:606.

II. APPLICANT ACTIVITY

The Sequoyah Fuels Corporation (SFC) was a nuclear fuels processing plant that converted uranium ore to uranium hexafluoride (UF₆) and depleted UF₆ to uranium tetrafluoride (UF₄). The production of UF₆ ceased in December 1992, and UF₄ in July 1993. There is currently no production activity at this plant and it is undergoing decommissioning activities under U.S. Regulatory Commission (NRC) License 408027SUB1010.

In addition to the activities described above, Sequoyah Fuels has been authorized by the Facility NRC license to land apply the ammonium nitrate generated as a by-product of uranium ore processing as a fertilizer. In the past, Land Application was conducted on as much as 9370 acres and utilized a traveling sprinkler system. Application was done three times per year and was conducted under the control of the Oklahoma Department of Agriculture. Since the facility is undergoing decommissioning, continued land application activities will be incorporated into the DEQ OPDES Permit. Section VI of this fact sheet provides details about the land application process and describes the limits and other conditions being placed in the permit.

III. DISCHARGE INFORMATION

A. DISCHARGE LOCATION

The facility's outfalls discharge to the headwaters of the Lower Illinois River located in Stream Segment No. 121700 (Waterbody ID No. 121700010010) of the Middle Arkansas River Basin. The location of the outfall and the name of the receiving stream are shown in the following table:

Outfall No.	Legal Description	Latitude-Longitude	Receiving Stream/Lake
01F (Final)	SE¼, SW¼, NW¼, Section 21, Township 12N, Range 21 EIM, Sequoyah County, Oklahoma	N 35° 30' 03'' W 95° 05' 33''	Lower Illinois River
001 (Internal)	NW¼, NE¼, SE¼, Section 21, Township 12N, Range 21 EIM, Sequoyah County, Oklahoma	N 35° 30' 00'' W 95° 05' 01''	Lower Illinois River
008 (Internal)	SE¼, SE¼, NW¼, Section 21, Township 12N, Range 18EIM, Muskogee County, Oklahoma	N 35° 30' 01'' W 95° 05' 19''	Lower Illinois River

B. DISCHARGE DESCRIPTION

Outfall 01F: The discharge consists of commingled wastewater from internal monitoring points 001 and 008.

Outfall 001: The discharge consists of raw water basin overflow and excess water bypass of Tenkiller Reservoir water, process area stormwater, stormwater overflow from the S. Yellowcake sump emergency overflow and Calcium Fluoride Clarifier overflow, and the laundry.

Outfall 008: The discharge consists of stormwater runoff from the DUF4 building, Pond 2, solid waste burial areas and facility grounds.

C. DISCHARGE CHARACTERISTICS:

The following data are obtained from discharge monitoring reports (DMRs) from 4/99-2/04:

OUTFALL 01(F)

Parameters	Maximum Reported Values	Long Term Average
Flow (MGD)	5.369	0.989

The following data are obtained from discharge monitoring reports (DMRs) from 4/99-2/04:

OUTFALL 001

mg/l unless otherwise noted

Parameters	High Daily Maximum	High Daily Average
Flow (MGD)	2.347	0.847
Ammonia-N	0.6	0.21
Nitrate-N	3.2	0.72
Fluoride	1.3	0.25
TSS	58.4	1.79
Radium 226	1.8	0.16
Uranium (pCi/l)	255	30.5
pH (Standard Units)	Ranged from 6.8 to 8.0	

The following data are obtained from discharge monitoring reports (DMRs) from 4/99-2/04:

OUTFALL 008

mg/l unless otherwise noted

Parameters	High Daily Maximum	High Daily Average
Flow (MGD)	3.776 (30 day)	0.042 (LTA)
Ammonia-N	396	70.5
Nitrate-N	471	86.6
Fluoride	2.6	1.7
TSS	42.5	29.2
Radium 226	3.0	1.7
Uranium (pCi/l)	77.1	51.6
pH (Standard Units)	Ranged from 6.0 to 8.2	

IV. RATIONALE FOR DETERMINING DISCHARGE PERMIT LIMITS

The following sections set forth the principal facts and the significant factual, legal, methodological, and policy considered in preparing the draft permit. Also set forth are any calculations or other necessary explanations of the

derivation of specific effluent limitations and conditions, including a citation to the applicable effluent limitation guideline or performance standard provisions as required under 40 CFR §122.44 and the Oklahoma Pollutant Discharge Elimination Act (OPDES), OAC 252:606-5-4(a)(1), and reasons why they are applicable or an explanation of how the alternative effluent limitations were developed. In accordance with regulations promulgated at 40 CFR §122.44(d), the draft permit limits are based on the more stringent of technology-based limitations or applicable water quality-based limitations.

A. TECHNOLOGY-BASED EFFLUENT LIMITATION AND CONDITIONS

1. General Comments

Regulations promulgated at 40 CFR §122.44(a) require technology-based effluent limitations to be placed in NPDES and OPDES permits based on effluent limitations guidelines where applicable, on the Best Professional Judgment of the Permit Writer (BPJ) in the absence of guidelines or on a combination of the two.

2. Applicable Effluent Limitations Guidelines

Discharges from facilities of this type are not covered by Federal effluent guidelines. Therefore, under the authority of Section 402(a)(1) of the Clean Water Act and State laws, the State has developed a permit on a case-by-case basis. All three of the following outfalls discharge to the Lower Illinois River in Stream Segment 121700 of the Middle Arkansas River Basin (WBID No 121700010010).

1. Outfall 01F: The discharge consists of commingled wastewater from internal monitoring points 001 and 008. No effluent limitations guidelines have been established for this type of discharge.
2. Outfall 001: The discharge consists of raw water basin overflow and excess water bypass of Tenkiller Reservoir water, process area stormwater, stormwater overflow from the S. Yellowcake sump emergency overflow and Calcium Fluoride Clarifier overflow, and the laundry. No effluent limitations guidelines have been established for this type of discharge.
3. Outfall 008: The discharge consists of stormwater runoff from the DUF4 building, Pond 2, solid waste burial areas and grounds. No effluent limitations guidelines have been established for this type of discharge.

B. BEST PROFESSIONAL JUDGMENT OF THE PERMIT DRAFTER

Outfall 01F will have the following limit based on BPJ:

- Flow monitoring only to be measured daily when discharging

Outfall 001 will have the following limits based on BPJ:

Since the facility is no longer in operation, it is the best professional judgment of the permit writer that the limits applied to Outfall 001 in the previous permit should be carried forward to this permit. Permit limits are included for Ammonia (as Nitrogen), Nitrate (as Nitrogen), Fluoride, Radium 226, Thorium 230, Uranium and Total Suspended Solids (TSS). A monitoring requirement for Chemical Oxygen Demand (COD) is being added as a new parameter to insure that waters of the state are properly protected. Proposed limits include the following:

PARAMETER	DISCHARGE LIMITATIONS	
	CONCENTRATION (mg/l) unless otherwise specified	
	Daily Maximum	Monthly Average
Ammonia-N	10.5	2.6
Fluoride	7.9	3.2
Nitrate-N	32	7.9

Total Suspended Solids	114	57
COD	Report	Report
Radium 226	30 pCi/l	N/A
Thorium 230 ^a	100 pCi/l	N/A
Uranium ^a	300 pCi/l	N/A

(a) Daily Maximum limits are adopted from the Facility NRC License
 Outfall 008 will have the following limits Based on BPJ:

Since the facility is no longer in operation, it is the best professional judgment of the permit writer that the limits applied to Outfall 008 in the pervious permit should be carried forward to this permit. Permit limits are included for Ammonia (as Nitrogen), Nitrate (as Nitrogen), Fluoride, Radium 226, Thorium 230, Uranium and Total Suspended Solids (TSS). A monitoring requirement for Chemical Oxygen Demand (COD) is being added as a new parameter to insure that waters of the state are properly protected. Proposed limits include the following:

PARAMETER	DISCHARGE LIMITATIONS	
	CONCENTRATION (mg/l) unless otherwise specified	
	Daily Maximum	Monthly Average
Ammonia-N	10.5	2.6
Fluoride	7.9	3.2
Nitrate-N	32	7.9
Total Suspended Solids	114	57
COD	Report	Report
Radium 226	30 pCi/l	N/A
Thorium 230 ^a	100 pCi/l	N/A
Uranium ^a	300 pCi/l	N/A

(a) Daily Maximum limits are adopted from the Facility NRC License

C. WATER-QUALITY-BASED EFFLUENT LIMITATIONS AND/OR CONDITIONS

1. RECEIVING STREAM BENEFICIAL USES

As designated in OWQS, as amended, the beneficial uses of the Lower Illinois River in Stream Segment 121700 of the Middle Arkansas River Basin (WBID No 121700010010):

- Public and Private Water Supply (OAC 785-45-5-10);
- Fish and Wildlife Propagation/Trout Fishery (OAC 785-45-5-12(e));
- Agriculture/Livestock and Irrigation (OAC 785-45-5-13);
- Hydroelectric Power Generation (OAC 785-45-5-14);
- Industrial and Municipal Process and Cooling Water (OAC 785-45-5-15);
- Primary Body Contact Recreation (OAC 785-45-5-16);
- Navigation (OAC 785-45-5-18);
- Aesthetics (OAC 785-45-5-19); and
- Fish Consumption (OAC 785-45-5-20)

2. WATER QUALITY STANDARDS REQUIREMENTS

Section 101 of the Clean Water Act (CWA) states that "...it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited..." A permit that contains technology-based permit limits alone may not adequately protect the quality of the receiving stream or lake. Thus, additional water quality-based effluent limitations and/or conditions are considered in the permit using State narrative and numerical water quality standards OWQS, as amended. This is to insure that no source discharge (1) results in instream or inlake toxicity;

(2) causes a violation of an applicable narrative or numerical State water quality standard; (3) or results in aquatic bioaccumulation that threatens human health. The effluent limitations and/or conditions established in this draft permit are in compliance with state water quality standards under the designated beneficial uses of the receiving stream.

3. WATER QUALITY STANDARDS IMPLEMENTATION

a. Water Quality Standards Implementation Process

To achieve the objectives stated in Section IV.B.1 above, each pollutant present at measurable levels in the facility's effluent or which has technology-based concentration limitations, for which there is one or more applicable numerical water quality criteria, is screened against the applicable numerical criteria to determine whether the pollutant has reasonable potential (RP) to exceed any of the criteria. The screens are performed in accordance with the OWQS implementation criteria in OAC 785:46 and OAC 252:690, and the Continuing Planning Process (CPP) document. In the RP screening process, the 95th percentile effluent concentration, or estimate thereof if the effluent data set is not sufficiently large to determine it directly, is used to compute an instream concentration according to regulatory mixing zone equations defined in OAC 785:46. Calculated instream concentrations are then compared with applicable criteria to determine whether RP is exhibited for any of the screened pollutants. If RP is exhibited, in accordance with 40 CFR §122.44(d)(1)(vi) and OAC 252:690, a wasteload allocation and criterion long term average is computed for each applicable criterion. Water quality-based permit limitations are calculated for each pollutant exhibiting RP for all applicable criteria. The most stringent of the resulting monthly average permit limitations is established in the draft permit for each pollutant requiring such limitations.

b. Summary of Regulatory Parameters

Regulatory receiving water flows are established in accordance with OAC 785:46. Effluent regulatory flows, as well as regulatory effluent and background pollutant concentrations are established in accordance with OAC 252:690, Subchapter 3. The discharge point for this facility (Outfall 01F) is to the Lower Illinois river. Stream flow data for screen modeling purposes are based on U.S.G.S. gauging station 01798000 located on the Illinois River located 4.5 miles downstream from the Tenkiller Ferry Dam, 4.5 miles northeast of Gore, at river mile 8.5. Data is taken from Statistical Summaries of Streamflow Records in Oklahoma and Parts of Arkansas, Missouri, and Texas through 1999, D.C. Heimann and R.L. Tortorelli, U.S. Geological Survey. Outfalls 001 and 008 discharge into a pipe and are commingled prior to discharging through Outfall 01F. Each of these outfalls have independent monitoring points prior to being commingled and are used as points of compliance for permitting purposes. Definitions and values for these terms for both 001 and 008 outfalls are as follows:

OUTFALL 001

- $Q_{e(30)}$ Highest 30-day average effluent flow rate from the Plant occurring in the most recent five-year period of record is equal to 1.641 MGD
- $Q_{e(LTA)}$ Long-term average flow effluent flow rate is equal to 0.559 MGD
- $Q_{u(7Q2)}$ Upstream flow rate. In this case the $7Q2 = 60.235$ MGD
- $Q_{u(LTA)}$ Upstream Long-term average flow is equal to 998.534 MGD
- $Q_{u(STA)}$ Upstream short-term average is equal to $0.68 Q_{u(LTA)} = 679.003$ MGD
- Q^* Dilution capacity, or ratio of effluent flow to receiving stream (upstream) flow. The Q^* ratios, as well as their values, are defined in the following table.

Q* VALUES

Q*	Corresponding Screens	Value
$Q_e(30)/Q_u(7Q2)$	Temp, Chronic Toxicity	0.02725
$Q_{e(LTA)}/Q_{u(LTA)}$	Human Health/Fish Flesh Agriculture Yearly Mean Standards	0.00087
$Q_e(30)/Q_{u(LTA)}$	Raw Water	0.00164
$Q_e(30)/Q_u(sta)$	Agriculture Sample Standards	0.00242

OUTFALL 008

$Q_{e(30)}$ Highest 30-day average effluent flow rate from the Plant occurring in the most recent five-year period of record is equal to 2.652 MGD

$Q_{e(LTA)}$ Long-term average flow effluent flow rate is equal to 0.026 MGD

$Q_{u(7Q2)}$ Upstream flow rate. In this case the 7Q2 = 60.235 MGD

$Q_{u(LTA)}$ Upstream Long-term average flow is equal to 998.534 MGD

$Q_{u(STA)}$ Upstream short-term average is equal to 0.68 $Q_{u(LTA)} = 679.003$ MGD

Q* Dilution capacity, or ratio of effluent flow to receiving stream (upstream) flow. The Q* ratios, as well as their values, are defined in the following table.

Q* VALUES

Q*	Corresponding Screens	Value
$Q_e(30)/Q_u(7Q2)$	Temp, Chronic Toxicity	0.04403
$Q_{e(LTA)}/Q_{u(LTA)}$	Human Health/Fish Flesh Agriculture Yearly Mean Standards	0.00003
$Q_e(30)/Q_{u(LTA)}$	Raw Water	0.00266
$Q_e(30)/Q_u(sta)$	Agriculture Sample Standards	0.00391

OUTFALLS 001 AND 008

C_{mean} Geometric mean of all analyzed effluent concentrations for a specific pollutant. An arithmetic mean may be substituted when a geometric mean cannot be determined, such as when only historic monthly average values are available from Discharge Monitoring Reports (DMRs).

C_{95} The 95th percentile maximum likelihood effluent concentration for purposes of determining whether effluent limitations are required. The value of C_{95} is calculated by one of two methods, depending on the size of the effluent data set (i.e., number of data points), in accordance with OAC 252:690-3-8, as follows:

- If at least 10 data points are available, at least five of which are measurable, C_{95} is calculated directly from the effluent data set, assuming a log-normal distribution, according to the following equation:

$$C_{95} = \text{EXP}(\ln(x)_{\text{avg}} + 1.645 \times s_{\ln(x)}),$$

$$\text{where } \ln(x)_{\text{avg}} = \frac{\left(\sum_{i=1}^N \ln(x_i)\right)}{N} \text{ and } s_{\ln(x)} = \sqrt{\frac{N \sum_{i=1}^N (\ln(x_i))^2 - \left(\sum_{i=1}^N \ln(x_i)\right)^2}{N(N-1)}}$$

In the above equations, “ $\ln(x)_{\text{avg}}$ ” represents the arithmetic average of the set of log-transformed data points. The standard deviation of the set of log-transformed data points is expressed as “ $s_{\ln(x)}$ ”.

- If less than 10 effluent data points are available, C_{95} must be estimated from the mean effluent concentration, as follows:

$$C_{95} = C_{\text{mean}} \times 2.135, \text{ where } C_{\text{mean}} \text{ is calculated as the geometric mean.}$$

In accordance with OAC 252:690-3-5, if the geometric mean is not available or cannot be determined, the arithmetic mean may be used.

$C_{95(M)}$ The 95th percentile or “reasonable potential” effluent concentration of a specific pollutant for the purpose of assessing whether effluent monitoring of a pollutant should be required as a permit condition. It is used in the reasonable potential equations in the same manner as is C_{95} . This parameter is used only if the effluent data set consists of less than 10 data points. $C_{95(M)}$ is calculated, assuming a log-normal distribution, according to the following equation:

$$C_{95(M)} = C_{\text{max}} \times \text{RPF}_{95(M)}$$

$\text{RPF}_{95(M)}$ The reasonable potential factor used in the equation for calculating $C_{95(M)}$, referred to herein as the TSD method (from Technical Support Document for Water Quality-Based Toxics Control, EPA/505/2-90-001). $\text{RPF}_{95(M)}$ is calculated, assuming a log-normal distribution, according to the following equation:

$$\text{RPF}_{95(M)} = \frac{\text{EXP}\left(1.645 \sqrt{\ln(1 + CV^2)} - 0.5 \ln(1 + CV^2)\right)}{\text{EXP}\left(z_N \sqrt{\ln(1 + CV^2)} - 0.5 \ln(1 + CV^2)\right)}$$

where z_N is the upper k^{th} percentile of the normal distribution, $k = 0.05^{1/N}$ (for the 95% confidence level), and CV is assumed to equal 0.6.

The values of z_N and $\text{RPF}_{95(M)}$ for values of N from 1 to 9 are as follows:

N	1	2	3	4	5	6	7	8	9
z_N	-1.645	-0.760	-0.336	-0.068	0.124	0.272	0.390	0.489	0.574
$\text{RPF}_{95(M)}$	6.199	3.795	3.000	2.585	2.324	2.141	2.006	1.898	1.811

C_u Upstream or background concentration of a pollutant. Specific data is used where available. Where such data is not available, and in streams where the 7Q2 = 0, in the absence of known upstream toxicants, background concentrations are assumed to be zero. For the agriculture screens, C_u is computed using the segment average YMS and SS values for the receiving stream segment published in Appendix F to OAC 785:45 according to the following equation: $C_u = 2 \times YMS - SS$.

$C_{\text{criterion}}$ A numerical water quality criterion for a specific pollutant. For some pollutants, $C_{\text{criterion}}$ is pH or hardness-dependent. In such cases, segment-averaged hardness and pH data listed at OAC 785:46, Appendix B, are used unless site-specific hardness or pH data has been adopted into the OWQS by the OWRB. Where reasonable potential is exhibited for a pollutant, $C_{\text{criterion}}$ is used to calculate the wasteload allocation (WLA) for each applicable criterion.

C_d Instream concentration of a specific pollutant, according to the appropriate mixing equation.

CV Coefficient of variation of a data set. CV is defined as the standard deviation of a data set divided by its arithmetic average, i.e., $CV = S_x / C_{\text{avg}}$.

C_{mean} , C_{max} , C_{95} , $C_{95(M)}$ and CV Values for Quantifiable Pollutants – Outfall 001

Effluent Characteristic	No. of data pts (N)	Concentration ($\mu\text{g/l}$ unless otherwise specified)				Calculated CV ^a	
		C_{mean}	C_{95}	C_{max}	$C_{95(M)}$		
Fluoride, (mg/l)	1	0.3	0.641	0.3	1.86	---	
Nitrate-Nitrite as N (mg/l)	1	1.8	3.843	1.8	11.158	---	
Fluoride (mg/l)	Water Quality Based	1	0.3	0.641	0.3	1.86	---
	Tech. Based	1	N/A	3.2	N/A	N/A	---
Nitrate-N	Water Quality Based	1	1.8	3.843	1.8	11.158	---
	Tech. Based	1	N/A	7.9	N/A	N/A	---
Barium, total (mg/l)	1	0.034	0.073	0.034	0.211	---	
Manganese (mg/l)	1	0.018	0.038	1.8	0.112	---	
Antimony, total	1	9	19.215	9	55.791	---	
Cadmium, total	1	3	6.405	3	18.597	---	
Copper, total	1	5	10.675	5	30.995	---	
Mercury, total	1	0.6	1.281	0.6	3.719	---	
Zinc, total	1	57	121.695	57	353.343	---	
Sulfate (mg/l)	1	11.1	23.699	11.1	68.809	---	

^a A coefficient of variation (CV) is calculated only where an effluent data set consists of at least ten data points. At least half of these data points must be measurable. A CV value of 0.6 is otherwise assumed where a data set is of insufficient size or there is an insufficient number of measurable data points to calculate a CV directly (see OAC 252:690-3-7).

C_{mean} , C_{max} , C_{95} , $C_{95(M)}$ and CV Values for Quantifiable Pollutants – Outfall 008

Effluent Characteristic	No. of data pts (N)	Concentration ($\mu\text{g/l}$ unless otherwise specified)				Calculated CV ^a
		C_{mean}	C_{95}	C_{max}	$C_{95(M)}$	
Fluoride, (mg/l)	1	0.3	0.641	0.3	1.86	---
Nitrate-Nitrite as N (mg/l)	1	2.0	4.27	1.8	12.398	---
Barium, total (mg/l)	1	0.04	0.085	0.034	0.248	---
Manganese (mg/l)	1	0.098	0.041	1.8	0.118	---
Antimony, total	1	9	19.215	9	55.791	---
Arsenic, total	1	7	14.945	3	43.939	---
Lead, total	1	5	10.675	5	30.995	---
Mercury, total	1	0.6	1.281	0.6	3.719	---

Selenium, total	1	10	21.35		61.99	---
Zinc, total	1	57	121.695	57	353.343	---
Sulfate (mg/l)	1	6.5	13.878	11.1	40.294	---

^a A coefficient of variation (CV) is calculated only where an effluent data set consists of at least ten data points. At least half of these data points must be measurable. A CV value of 0.6 is otherwise assumed where a data set is of insufficient size or there is an insufficient number of measurable data points to calculate a CV directly (see OAC 252:690-3-7).

OUTFALLS 001 AND 008

BT/C ratio The background trigger to criterion ratio, or ratio of the background level necessary to trigger reasonable potential (given a C_{95} value) to the applicable criterion. A BT/C ratio of > 1.0 indicates that the value of C_{95} is less than the criterion. Under this condition, reasonable potential for the effluent to cause or contribute to criterion exceedances cannot be demonstrated at any background level. Hence, no further examination is warranted. If the BT/C ratio is less than 1.0, reasonable potential could be exhibited at the C_{95} effluent concentration if the background level were high enough. As the BT/C ratio approaches zero and/or as the magnitude of the criterion decreases, the background level will have a progressively greater impact in determination of reasonable potential and calculation of wasteload allocations should permit limits be required. The DEQ has proposed that when a pollutant's BT/C ratio is less than a certain threshold value (BT/C_{max}), background monitoring should be required for that pollutant as a permit condition if background monitoring is not otherwise required. BT/C_{max} is a function of the magnitude of the criterion under examination. Its magnitude varies from a high of 1.0 for criteria less than or equal to 1 $\mu\text{g/l}$ to a low of 0.125 for criteria greater than 1000 $\mu\text{g/l}$ (or 1 mg/l). For criteria between 1 and 1000 $\mu\text{g/l}$, BT/C_{max} is calculated according to the following equation:

$$BT/C_{max} = \frac{1}{2 \log(\text{criterion})}$$

- T_a Ambient receiving water temperature in $^{\circ}\text{C}$. T_a is a function of the Fish and Wildlife Propagation aquatic community designation.
- T_{95} The 95th percentile daily maximum effluent temperature. If a temperature distribution is not available, the daily maximum effluent temperature on the permit application is used.
- ΔT_{max} Maximum temperature increase at the edge of the temperature mixing zone.

4. WATER QUALITY STANDARDS REQUIREMENTS BY DESIGNATED BENEFICIAL USE

The narrative and numerical stream standards are provided in OAC 785:45 "Oklahoma's Water Quality Standards, as amended. It should be noted that effluent from Outfall 001 and Outfall 008 is commingled before being discharged through Outfall 01F to the Lower Illinois River in Stream Segment 121700 of the Middle Arkansas River Basin (WBID No 121700010010). In order to insure that the water quality standards are being met, the standards are being applied at the 001 Outfall and the Outfall 008 internal discharge points.

a. Public and Private Water Supplies

Outfall 001: Data submitted by the applicant for this outfall indicates that chemicals are present for which numerical criteria have been established for Public and Private Water Supply. A water quality screen was performed for raw water criteria. The screen indicates that none of the parameters exceeded numerical standards for raw water. The results of the screen are as follows:

COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
WITH RAW WATER NUMERICAL CRITERIA FOR PUBLIC AND PRIVATE WATER SUPPLY
LOWER ILLINOIS RIVER

OUTFALL 001

PARAMETER		Effluent Concentration $C_{95}(1)$ $\mu\text{g/l}$	Instream Concentration C_d $\mu\text{g/l}$	Instream Raw Water Criteria ($C_{d(Raw)}$) $\mu\text{g/l}$	Is $C_d > C_{d(Raw)}$ Criteria?	WLA $\mu\text{g/l}$
Fluoride (mg/l)	Water Quality Based	0.641	0.00105	4	No	---
	Tech. Based	3.2	0.00525	44	No	---
Nitrate-N	Water Quality Based	3.843	0.0063	10	No	---
	Tech. Based	7.9	0.013	10	No	---
Barium, total (mg/l)		0.073	0.00012	1	No	---
Cadmium, total		6.405	0.01051	20	No	---
Copper, total		10.875	0.0175	1000	No	---
Mercury, total		1.281	0.002102	2.0	No	---
Zinc, total		121.695	0.320	5000	No	---

(1) Based on Analytical data submitted on July 9, 2004.

Since none of the parameters exceeded the raw water numerical criteria, no wasteload allocations are required.

COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
WITH HUMAN HEALTH, FISH FLESH AND WATER NUMERICAL CRITERIA FOR PUBLIC AND PRIVATE
WATER SUPPLY
LOWER ILLINOIS RIVER

OUTFALL 001

PARAMETER	Effluent Concentration $C_{95}(1)$ $\mu\text{g/l}$	Instream Concentration C_d $\mu\text{g/l}$	Instream Raw Water Criteria ($C_{d(Raw)}$) $\mu\text{g/l}$	Is $C_d > C_{d(Raw)}$ Criteria?	WLA $\mu\text{g/l}$
Cadmium, total	6.405	0.00556	14.49	No	---
Mercury, total	1.281	0.001113	0.05	No	---

(2) Based on Analytical data submitted on July 9, 2004.

Since none of the parameters exceeded the human health, fish flesh and water criteria, no wasteload allocations are required.

Radioactive Materials:

OAC 785:45-5-10(2) requires that a daily maximum limit of 15 picocuries/l be placed in the permit for Gross Alpha particles and a daily maximum limit of 50 picocuries/l be placed in the permit for Gross Beta particles. The permit will also continue the requirement from the previous permit to monitor and report Uranium.

b. Fish and Wildlife Propagation

Toxics -- Based on the nature of the wastewater and the prohibition against use of metal brighteners and solvent-based cleaners as described in Part IV.C above, and on information contained in past applications for individual discharge permits, the wastewater which will be discharged through the proposed outfall should not contain substances listed in Toxic Substances (OAC 785:45-5-12(f)(6)) and Water Column Criteria to Protect for the Consumption of Fish Flesh (OAC 785:45-5-12(f)(8)) at levels which would have reasonable potential to violate numerical criteria.

Where actual or potential exceedances of State water quality criteria are determined to be the result of the facility's discharge to the receiving water(s), the DEQ may determine that the facility is no longer eligible for coverage under this Permit and require the facility to apply for an individual discharge permit with additional chemical-specific limits or toxicity testing requirements as necessary to maintain the beneficial uses of the receiving stream.

Thus, additional permit action for toxics is not necessary for this beneficial use.

Temperature -- According to OAC 785:45-5-12(f)(2)(A), at no time shall heat be added to any surface water in excess of the amount that will raise the temperature of the receiving water more than 2.8 °C at the edge of the mixing zone. However, OAC 785:46-11-1(c) applies specific antidegradation maximum limits of 52 °C to all waters of the state including privately owned cooling water reservoirs.

Since significant heat is not added to the wastewater being discharged and all discharges should essentially be at ambient temperature, there is no reasonable potential to violate temperature criteria.

Thus, permit action for temperature is not necessary.

Oil and Grease – According to OWQS, as amended, OAC 785:45-5-12, “All waters having the designated beneficial use of any subcategory of fish and wildlife propagation shall be maintained free of oil and grease to prevent a visible sheen of oil or globules of oil or grease on or in the water.”

Therefore, a narrative prohibition to the effect that “there shall be no discharge of visible sheen of oil or globules of oil or grease” has been included in the draft permit. In addition, the technology-based limit of 15 mg/l for Oil and Grease should help insure that the narrative criteria is maintained.

pH -- According to OWQS, as amended, OAC 785:45-5-12, "The pH values shall be between 6.5 and 9.0 in waters designated for fish and wildlife propagation; unless pH values outside that range are due to natural conditions." The pH range in the previous permit and the Water Quality Management Plan has been set at 6.0 to 9.0 and will be carried forward in this permit.

Aquatic Toxicity Criteria for Fish and Wildlife Propagation

b. Determination of Reasonable Potential and Wasteload Allocation

(1) Reasonable Potential and WLA Equations

(a) Aquatic Toxicity– Fish and Wildlife Propagation Use

For determining whether there is reasonable potential to exceed acute toxicity numerical criteria for discharges to streams, OAC 785:46-5-3(b)(2) defines a pollutant's concentration at the edge of the acute regulatory mixing zone (C_d) as:

$$C_d = C_b + \frac{Q_{e(30)}}{64.63} (C_{95} - C_b), \text{ where } Q_{e(30)} \text{ is expressed in mgd.}$$

In order for the acute mixing zone equation to be mathematically well-behaved, i.e., for C_d to fall in the range between C_b and C_{95} , the value for $Q_{e(30)}$ used in the acute mixing equation is limited to a maximum value of 64.63 mgd, even if the actual $Q_{e(30)}$ exceeds 64.63 mgd.

Should a pollutant's acute toxicity screen exhibit reasonable potential, a water quality-based limit is required for that pollutant and a wasteload allocation is calculated for each applicable criterion. For

discharges to streams, the acute toxicity wasteload allocation is calculated in accordance with OAC 252:690-3-55(a)(1), as follows:

$$WLA_A = C_b + \frac{64.63}{Q_{e(30)}} (C_A - C_b), \text{ where } Q_{e(30)} \text{ is expressed in mgd.}$$

As with the reasonable potential equation, if the actual $Q_{e(30)}$ exceeds 64.63 mgd, a maximum value of 64.63 mgd is used in the acute WLA equation.

For determining whether there is reasonable potential to exceed chronic toxicity numerical criteria, OAC 785:46-5-3(b)(2) defines a pollutant's maximum concentration at the boundary of the chronic regulatory mixing zone (C_d) as:

$$C_d = C_u + 1.94 Q^* \frac{(C_{95} - C_u)}{(1 + Q^*)}, \text{ for } Q^* \leq 0.1823$$

$$C_d = C_u + \frac{(C_{95} - C_u)}{(6.17 - 15.51 Q^*)}, \text{ for } 0.1823 < Q^* < 0.3333$$

$$C_d = C_{95}, \text{ for } Q^* \geq 0.3333$$

Should a pollutant's chronic toxicity screen exhibit reasonable potential, a water quality-based limit is required for that pollutant and a wasteload allocation is calculated for each applicable criterion. For discharges to streams, the chronic toxicity wasteload allocation is calculated in accordance with OAC 252:690-3-55(a)(1), as follows:

$$WLA_C = C_u + \left(\frac{1 + Q^*}{1.94 Q^*} \right) (C_C - C_u), \text{ for } Q^* \leq 0.1823$$

$$WLA_C = C_u + (6.17 - 15.51 Q^*) (C_C - C_u), \text{ for } 0.1823 < Q^* < 0.3333$$

$$WLA_C = C_C, \text{ for } Q^* \geq 0.3333$$

Outfall 001: Data submitted by the applicant for this outfall indicates that chemicals are present for which numerical criteria have been set for **Fish and Wildlife Propagation**. A water quality screen was performed for raw water criteria and human health for the consumption of fish flesh and water criteria. The screen indicates that none of the parameters exceeded numerical standards for either raw water or human health criteria.

The results of the screen are as follows:

COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
 AQUATIC TOXICITY NUMERICAL CRITERIA FOR FISH AND WILDLIFE PROPOGATION
 LOWER ILLINOIS RIVER

Results of Acute and Chronic Toxicity RP Screens using C_{95} (Outfall 001)
 (concentrations in $\mu\text{g/l}$ unless otherwise specified)

Effluent Characteristic	Acute Toxicity				Chronic Toxicity			
	C_d	C_{acute}	$C_d > C_{acute}?$	WLA_{acute}	C_d	$C_{chronic}$	$C_d > C_{chronic}?$	$WLA_{chronic}$
Cadmium, total	0.163	36.19	No	N/A	0.330	1.19	No	N/A
Copper, total	0.27	20.38	No	N/A	0.55	13.51	No	N/A
Mercury, total	0.0325	2.4	No	N/A	0.066	1.302	No	N/A
Zinc, total	3.09	123.48	No	N/A	0.26	111.85	No	N/A

(5) Whole Effluent Toxicity

(a) Criterion and Implementation

Whole effluent toxicity (WET) testing is the most direct measure of potential aquatic toxicity, since it incorporates the effects of synergism of effluent components and receiving stream water quality characteristics. OAC 785:45-5-12(f)(6)(A) states, "Surface waters of the state shall not exhibit acute toxicity and shall not exhibit chronic toxicity outside the [chronic] mixing zone. Acute test failure and chronic test failure shall be used to determine discharger compliance with these narrative aquatic life toxics criteria." This narrative toxicity criterion is implemented according to procedures described at OAC 252:690-3-17 through 3-43, and Chapter 3 of the CPP.

Two types of WET tests are used to implement the narrative toxicity criterion. The 48-hour acute test is used to protect against acute toxicity, and the 7-day chronic test is used to protect against chronic toxicity outside the chronic regulatory mixing zone. Two test species are used: a vertebrate species, *Pimephales promelas* (or Fathead minnow), and an invertebrate species, *Daphia pulex* (for acute testing) or *Ceriodaphia dubia* (for chronic testing).

(b) WET Testing Historical Summary

(a) Outfall TX1

Outfall TX1 is functionally identical to Outfall 001. The previous permit required acute WET semi-annual testing of *Daphnia Pulex* and quarterly testing for *Pimephales Promelas*. The following table shows an historical summary of acute wet test results by species for the period June 1999 through December 2003. There were no test failures during this time period.

(i) Acute Testing

Acute testing was conducted using a critical dilution of 100% and a 0.75 (0% control, 32%, 42%, 56, 75% and 100%) dilution series. In the following summary table, where a test failed, the LC_{50} value is shown **underlined in bold face**.

**Summary of Acute WET Test Results by Species (Outfall 001)
6/99 – 12/03**

<i>Daphia pulex</i>		<i>Pimephales promelas</i> (Fathead minnow)		Whole Effluent Toxicity	
Reporting period	LC ₅₀ ^a	Reporting period	LC ₅₀ ^a	Reporting period	LC ₅₀ ^a
1/99-6/99	> 100	1/99-6/99	> 100	1/99-6/99	> 100
6/99-12/99	> 100	6/99-12/99	> 100	6/99-12/99	> 100
12/99-6/00	> 100	12/99-6/00	> 100	12/99-6/00	> 100
6/00-12/00	> 100	6/00-12/00	> 100	6/00-12/00	> 100
12/00-6/01	> 100	12/00-6/01	> 100	12/00-6/01	> 100
6/01-12/01	> 100	6/01-12/01	> 100	6/01-12/01	> 100
12/01-6/02	> 100	12/01-6/02	> 100	12/01-6/02	> 100
7/02-12/02	> 100	7/02-12/02	> 100	7/02-12/02	> 100
12/02-6/03	> 100	12/02-6/03	> 100	12/02-6/03	> 100
6/03-12/03	> 100	6/03-12/03	> 100	6/03-12/03	> 100
Test failure rate c ^b	0 %	Test failure rate b ^b	0 %	Test failure rate b ^b	0%

^a LC₅₀'s reported in percent effluent. An LC₅₀ ≤ 100 % constitutes a test failure.

^b Percent failures = (no. failures/no. tests conducted) × 100

(c) Whole Effluent Toxicity Testing Requirements

(1) Type of WET Testing Required

In accordance with OAC 252:690-3-31, the type of WET test(s) required is based on the value of Q*, as follows:

- Where $Q^* < 0.054$, acute testing only is required.
- Where $Q^* > 0.3333$, chronic testing only is required.
- Where $0.054 \leq Q^* \leq 0.3333$, both acute and chronic testing are required.

(i) Outfall TX1

Q* is equal to 0.0272 which indicates that only acute testing is required

(2) Critical Dilutions

(i) Outfall TX1

- Acute Critical Dilution

In accordance with OAC 252:690-3-35, the acute critical dilution (ACD) is 100%.

(3) Dilution Series

A 0.75 dilution series is used for all WET testing. Where it is practical to do so, the critical dilution is bracketed. The purpose of doing so is to evaluate dose response both above and below the critical dilution. In accordance with OAC 252:690-3-33, the dilution series for each type test are as follows (critical dilutions are shown **underlined in bold face**):

- Acute test: **100%**, 75%, 56%, 42%, and 32%, plus a dilution water control.
- Chronic test: 39%, **29%**, 22%, 16%, 12%, plus a dilution water control.

(4) Frequency of WET Testing

In accordance with OAC 252:690-3-41, a minimum of quarterly testing of both test species is required for at least one year.

(i) Outfall TX1

In accordance with OAC 252:690-3-41(b), based on the facility’s WET testing performance over the five year period examined, the facility will be subject to a two year “trial period” of quarterly acute and chronic testing prior to the permittee being eligible for a WET testing frequency reduction.

(d) Concurrent Testing Requirements

(1) Outfall TX1

Concurrent testing of total ammonia and pH will be required on all composite samples collected for Fathead minnow testing.

(e) Reasonable Potential

Based on the results shown above and the previous permit, WET limits are not required

(b) Protection of Human Health for Consumption of Fish Flesh – Fish Consumption Use (Outfall 001)

Results of the OWQS and NRWQC human health/fish flesh screens for Outfall 001, are shown in the following tables. Any required OWQS WLAs are also shown. Where water quality-based permit limitations are required, results are shown in **bold face**.

**Results of OWQS and NRWQC Human Health/Fish Flesh RP Screens
(Outfall 001)**

(concentrations in µg/l unless otherwise specified)

Effluent Characteristic	State Human Health/Fish Flesh Criteria				NRWQC Criteria		
	C _d	C _{FF}	C _d > C _{FF} ?	WLA _{FF}	C _d	C _{NRWQC}	C _d > C _{NRWQC} ?
Cadmium, total	0.00556	84.13	No	N/A	N/A	N/A	N/A
Mercury, total	0.001113	0.051	No	N/A	N/A	N/A	N/A
Manganese, total	N/A	N/A	N/A	N/A	0.00003	0.1	No
Antimony, total	N/A	N/A	N/A	N/A	0.017	4300	No

(1) Where state water quality standards exist for the pollutant of concern, they take primacy over the NRWQC Criteria.

c. Agriculture: Livestock and Irrigation

Outfall 001: The DMR data for this outfall indicates that chemicals are present for which Oklahoma Water Quality Standards have been established for agricultural use. A water quality screen was performed for the yearly mean standard and the sample standard. The results of the screen are as follows:

**COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
WITH YEARLY MEAN STANDARD FOR AGRICULTURE
LOWER ILLINOIS RIVER**

OUTFALL 001

PARAMETER	Effluent Conc., C _e (1) mg/l	C ₉₅ = C _e x 2.13 mg/l	Yearly Mean Standard (2) mg/l	Upstream Conc., C _u mg/l	Instream Conc., C _d mg/l	Is C _d > C _{yms} ?	YMS Wasteload Allocation mg/l
Chlorides	---	---	---	---	---	N/A	---
Sulfates	11.1	23.6985	29	17	17	No	---
TDS	---	---	---	---	---	N/A	---

(1) Based on analytical data submitted on July 9, 2004.

(2) From OAC 785:45, Appendix F

The upstream concentration, C_u, is computed using data from OAC 785:45, Appendix F.

(3) The instream concentration, C_d, is calculated using the following mass balance equation:

$$C_d = [(Q_{e(LTA)} \times C_{95}) + Q_{u(LTA)} \times C_u] / (Q_{e(LTA)} + Q_{u(LTA)})$$

Since instream concentration of these parameters did not exceed the Yearly Mean Standard, a wasteload allocation calculation is not required.

**COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
WITH SAMPLE STANDARD FOR AGRICULTURE
LOWER ILLINOIS RIVER**

**OUTFALL 001
(concentration in mg/l)**

Parameter mg/l	Effluent Conc., C _e (1)	C ₉₅ = C _e x 2.13	Sample Standard (2)	Upstream Conc., C _u	Instream Conc., C _d	Is C _d > C _{yms} ?	SS Wasteload Allocation
Chlorides	---	---	---	---	---	N/A	---
Sulfates (1)	11.1	23.699	41	17	17	No	---
TDS	---	---	---	---	---	N/A	---

(1) Based on analytical data submitted on July 9, 2004.

(2) From OAC 785:45, Appendix F

The upstream concentration, C_u, is computed using data from OAC 785:45, Appendix F.

The instream concentration, C_d, is calculated using the following mass balance equation:

$$C_d = [(Q_{e(LTA)} \times C_{95}) + Q_{u(LTA)} \times C_u] / (Q_{e(LTA)} + Q_{u(LTA)})$$

Since instream concentration of these parameters did not exceed the Sample Standard, a wasteload allocation calculation is not required.

c. Industrial and Municipal Process and Cooling Water

OAC 785-45-5-15(b) states that this beneficial use "will be protected by application of the criteria for the other beneficial uses." Therefore, additional permit action will not be needed to protect this beneficial use.

d. Primary Body Contact Recreation

The wastewater discharged through Outfall 001 does not include sanitary waste; therefore, it is not expected that coliform bacteria, Escherichia coli, or Enterococci will be present in the waste stream. Reasonable potential to violate the water quality standards under this beneficial use does not exist and permit action will not be needed.

e. Aesthetics

The following narrative requirement will be included in the permit to meet the requirements of OAC 785:45-5-19(c)(3): "There shall be no discharge of floating solids or visible foam in other than trace amounts."

f. Fish Flesh

Criteria for the protection of human health for the consumption of fish flesh are specified at OAC 785:45-5-20(b), and are implemented according to the procedures in OAC 785:46, Subchapter 7. No pollutants to which a human health/fish flesh criterion applies that are present in the IWTP effluent at measurable levels. Additional human health/fish flesh criteria are recommended by EPA in the National Recommended Water Quality Criteria (NRWQC). However, none of the additional NRWQC criteria are present in the IWTP effluent at measurable levels. Therefore, the permit will not require limits or monitoring requirements for this beneficial use.

B. Outfall 008

a. Public and Private Water Supplies

Outfall 008: Data submitted by the applicant for this outfall indicates that chemicals are present for which numerical criteria have been established for Public and Private Water Supply. A water quality screen was performed for raw water criteria. The screen indicates that none of the parameters exceeded numerical standards for raw water. The results of the screen are as follows:

COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
WITH RAW WATER NUMERICAL CRITERIA FOR PUBLIC AND PRIVATE WATER SUPPLY
LOWER ILLINOIS RIVER

OUTFALL 008

PARAMETER	Effluent Concentration $C_{95(1)}$ $\mu\text{g/l}$	Instream Concentration C_d $\mu\text{g/l}$	Instream Raw Water Criteria ($C_{d(Raw)}$) $\mu\text{g/l}$	Is $C_d > C_{d(Raw)}$ Criteria?	WLA $\mu\text{g/l}$
Fluoride	641	1.7	4	No	---
Nitrate-Nitrite as N	4270	11.3	10	No	---
Barium, total	85	0.23	1	No	---
Arsenic, total	14.945	0.0396	40	No	---
Lead, total	10.675	0.0283	100	No	---

Mercury, total	1.281	0.003393	2.0	No	---
Selenium, total	21.350	0.0566	10	No	---
Zinc, total	121.695	0.322	5000	No	---

(1) Based on Analytical data submitted on July 9, 2004.

Since none of the parameters exceeded the raw water numerical criteria, no wasteload allocations are required.

COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
WITH HUMAN HEALTH, FISH FLESH AND WATER NUMERICAL CRITERIA FOR PUBLIC AND PRIVATE
WATER SUPPLY
LOWER ILLINOIS RIVER

OUTFALL 008

PARAMETER	Effluent Concentration $C_{95}(1)$ $\mu\text{g/l}$	Instream Concentration C_d $\mu\text{g/l}$	Instream Raw Water Criteria $(C_{d(Raw)})$ $\mu\text{g/l}$	Is $C_d > C_{d(Raw)}$ Criteria?	WLA $\mu\text{g/l}$
Lead, total	10.675	0.0003	5	No	---
Mercury, total	1.281	0.000033	0.05	No	---

(1) Based on Analytical data submitted on July 9, 2004.

Since none of the parameters exceeded the human health, fish flesh and water criterion, no wasteload allocations are required.

b. Fish and Wildlife Propagation

Toxics -- Based on the nature of the wastewater and the prohibition against use of metal brighteners and solvent-based cleaners as described in Part IV.C above, and on information contained in past applications for individual discharge permits, the wastewater which will be discharged through the proposed outfall should not contain substances listed in Toxic Substances (OAC 785:45-5-12(f)(6)) and Water Column Criteria to Protect for the Consumption of Fish Flesh (OAC 785:45-5-12(f)(8)) at levels which would have reasonable potential to violate numerical criteria.

Where actual or potential exceedances of State water quality criteria are determined to be the result of the facility's discharge to the receiving water(s), the DEQ may determine that the facility is no longer eligible for coverage under this Permit and require the facility to apply for an individual discharge permit with additional chemical-specific limits or toxicity testing requirements as necessary to maintain the beneficial uses of the receiving stream.

Thus, additional permit action for toxics is not necessary for this beneficial use.

Temperature -- According to OAC 785:45-5-12(f)(2)(A), at no time shall heat be added to any surface water in excess of the amount that will raise the temperature of the receiving water more than 2.8 °C at the edge of the mixing zone. However, OAC 785:46-11-1(c) applies specific antidegradation maximum limits of 52 °C to all waters of the state including privately owned cooling water reservoirs.

Since significant heat is not added to the wastewater being discharged and all discharges should essentially be at ambient temperature, there is no reasonable potential to violate temperature criteria.

Thus, permit action for temperature is not necessary.

Oil and Grease -- According to OWQS, as amended, OAC 785:45-5-12, "All waters having the designated beneficial use of any subcategory of fish and wildlife propagation shall be maintained free of oil and grease to prevent a visible sheen of oil or globules of oil or grease on or in the water."

Therefore, a narrative prohibition to the effect that “there shall be no discharge of visible sheen of oil or globules of oil or grease” has been included in the draft permit. In addition, the technology-based limit of 15 mg/l for Oil and Grease should help insure that the narrative criteria is maintained.

pH -- According to OWQS, as amended, OAC 785:45-5-12, "The pH values shall be between 6.5 and 9.0 in waters designated for fish and wildlife propagation; unless pH values outside that range are due to natural conditions." The previous permit and the state Water Quality Management Plan set the pH range at 6.0 – 9.0 standard units and are included in the State Water Quality Management Plan for this Outfall. Therefore, permit limitations for pH of 6.0 to 9.0 standard units are being carried forward in this Permit.

Aquatic Toxicity Criteria for Fish and Wildlife Propagation

c. Determination of Reasonable Potential and Wasteload Allocation

(1) Reasonable Potential and WLA Equations

(a) Aquatic Toxicity– Fish and Wildlife Propagation Use

For determining whether there is reasonable potential to exceed acute toxicity numerical criteria for discharges to streams, OAC 785:46-5-3(b)(2) defines a pollutant’s concentration at the edge of the acute regulatory mixing zone (C_d) as:

$$C_d = C_b + \frac{Q_{e(30)}}{64.63} (C_{95} - C_b), \text{ where } Q_{e(30)} \text{ is expressed in mgd.}$$

In order for the acute mixing zone equation to be mathematically well-behaved, i.e., for C_d to fall in the range between C_b and C_{95} , the value for $Q_{e(30)}$ used in the acute mixing equation is limited to a maximum value of 64.63 mgd, even if the actual $Q_{e(30)}$ exceeds 64.63 mgd.

Should a pollutant’s acute toxicity screen exhibit reasonable potential, a water quality-based limit is required for that pollutant and a wasteload allocation is calculated for each applicable criterion. For discharges to streams, the acute toxicity wasteload allocation is calculated in accordance with OAC 252:690-3-55(a)(1), as follows:

$$WLA_A = C_b + \frac{64.63}{Q_{e(30)}} (C_A - C_b), \text{ where } Q_{e(30)} \text{ is expressed in mgd.}$$

As with the reasonable potential equation, if the actual $Q_{e(30)}$ exceeds 64.63 mgd, a maximum value of 64.63 mgd is used in the acute WLA equation.

For determining whether there is reasonable potential to exceed chronic toxicity numerical criteria, OAC 785:46-5-3(b)(2) defines a pollutant’s maximum concentration at the boundary of the chronic regulatory mixing zone (C_d) as:

$$C_d = C_u + 1.94 Q^* \frac{(C_{95} - C_u)}{(1 + Q^*)}, \text{ for } Q^* \leq 0.1823$$

$$C_d = C_u + \frac{(C_{95} - C_u)}{(6.17 - 15.51 Q^*)}, \text{ for } 0.1823 < Q^* < 0.3333$$

$$C_d = C_{95}, \text{ for } Q^* \geq 0.3333$$

Should a pollutant's chronic toxicity screen exhibit reasonable potential, a water quality-based limit is required for that pollutant and a wasteload allocation is calculated for each applicable criterion. For discharges to streams, the chronic toxicity wasteload allocation is calculated in accordance with OAC 252:690-3-55(a)(1), as follows:

$$WLA_C = C_u + \left(\frac{1+Q^*}{1.94Q^*} \right) (C_C - C_u), \text{ for } Q^* \leq 0.1823$$

$$WLA_C = C_u + (6.17 - 15.51 Q^*) (C_C - C_u), \text{ for } 0.1823 < Q^* < 0.3333$$

$$WLA_C = C_C, \text{ for } Q^* \geq 0.3333$$

Outfall 008: Data submitted by the applicant for this outfall indicates that chemicals are present for which numerical criteria have been set for Fish and Wildlife Propagation. A water quality screen was performed for raw water criteria and human health for the consumption of fish flesh and water criteria. The screen showed that none of the parameters exceeded numerical standards for either raw water or human health criteria. The results of the screen are as follows:

COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
AQUATIC TOXICITY NUMERICAL CRITERIA FOR FISH AND WILDLIFE PROPOGATION
LOWER ILLINOIS RIVER

Results of Acute and Chronic Toxicity RP Screens using C_{95} (Outfall 008)
(concentrations in $\mu\text{g/l}$ unless otherwise specified)

Effluent Characteristic	Acute Toxicity				Chronic Toxicity			
	C_d	C_{acute}	$C_d > C_{acute}?$	WLA_{acute}	C_d	$C_{chronic}$	$C_d > C_{chronic}?$	$WLA_{chronic}$
Arsenic, total	0.61	360	No	N/A	1.22	190	No	N/A
Lead, total	0.44	88.51	No	N/A	0.87	3.45	No	N/A
Mercury, total	0.0526	2.4	No	N/A	0.105	1.302	No	N/A
Selenium, total	0.876	20	No	N/A	1.75	5	No	N/A
Zinc, total	4.99	123.48	No	N/A	9.96	111.85	No	N/A

(2) Whole Effluent Toxicity (NOT REQUIRED FOR THIS OUTFALL)

(b) Protection of Human Health for Consumption of Fish Flesh – Fish Consumption Use (Outfall 008)

Results of the OWQS and National Recommended Water Quality Criteria (NRWQC) human health/fish flesh screens for Outfall 008, are shown in the following tables. Any required OWQS WLAs are also shown. Where water quality-based permit limitations are required, results are shown in **bold face**.

**Results of OWQS and NRWQC Human Health/Fish Flesh RP Screens
(Outfall 008)**
(concentrations in µg/l unless otherwise specified)

Effluent Characteristic	State Human Health/Fish Flesh Criteria				NRWQC Criteria		
	C _d	C _{FF}	C _d > C _{FF} ?	WLA _{FF}	C _d	C _{NRWQC}	C _d > C _{NRWQC} ?
Arsenic, total	0.0004	205	No	N/A	N/A	N/A	N/A
Lead, total	0.0003	25	N/A	N/A	N/A	N/A	N/A
Mercury, total	0.000033	0.051	No	N/A	N/A	N/A	N/A
Manganese, total	N/A	N/A	N/A	N/A	0.00000	0.1	No
Antimony, total	N/A	N/A	N/A	N/A	0.001	4300	No

(1) Where state water quality standards exist for the pollutant of concern, they take primacy over the NRWQC Criteria.

c. Agriculture: Livestock and Irrigation

After reviewing this facility’s application, it is not expected that the discharge from this outfall will contain total dissolved solids, chlorides, or sulfates in amounts that may impair the agriculture beneficial use. However, the Screen Model indicates that the concentration of Total Dissolved Solids (TDS) will exceed the Sample Standard for the stream segment after mixing. As such, a monitoring requirement for TDS is being placed in the permit.

The DMR data for this outfall indicates that chemicals are present for which Oklahoma Water Quality Standards have been established for agricultural use. A water quality screen was performed for the yearly mean standard and the sample standard. The results of the screen are as follows:

**COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
WITH YEARLY MEAN STANDARD FOR AGRICULTURE
LOWER ILLINOIS RIVER**

OUTFALL 008

Parameter	Effluent Conc., C _e (1)	C ₉₅ = C _e x 2.13	Yearly Mean Standard (2)	Upstream Conc., C _u	Instream Conc., C _d (3)	Is C _d > C _{yms} ?	YMS Wasteload Allocation
Chlorides (mg/l)	---	---	---	---	---	N/A	---
Sulfates (mg/l)	6.5	13.8775	29	17	17	No	---
TDS (mg/l)	---	---	---	---	---	N/A	---

(1) Based on Form 2C submitted on June 4, 2003.

(2) From OAC 785:45, Appendix F

The upstream concentration, C_u, is computed using data from OAC 785:45, Appendix F.

(3) The instream concentration, C_d, is calculated using the following mass balance equation:

$$C_d = [(Q_{e(LTA)} \times C_{95}) + Q_{u(LTA)} \times C_u] / (Q_{e(LTA)} + Q_{u(LTA)})$$

Since instream concentration of these parameters did not exceed the Yearly Mean Standard, a wasteload allocation calculation is not required.

COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
WITH SAMPLE STANDARD FOR AGRICULTURE
LOWER ILLINOIS RIVER
OUTFALL 008
(concentration in mg/l)

Parameter	Effluent Conc., C_e (1) mg/l	$C_{95} =$ $C_e \times 2.13$ mg/l	Sample Standard (2) mg/l	Upstream Conc., C_u mg/l	Instream Conc., C_d mg/l	Is $C_d >$ C_{yms} ?	SS Wasteload Allocation mg/l
Chlorides	---	---	---	---	---	N/A	---
Sulfates	6.5	13.878	41	17	17	No	---
TDS	---	---	---	---	---	N/A	---

(4) Based on Form 2C submitted on June 4, 2003.

(5) From OAC 785:45, Appendix F

The upstream concentration, C_u , is computed using data from OAC 785:45, Appendix F.

(6) The instream concentration, C_d , is calculated using the following mass balance equation:

$$C_d = [(Q_{e(LTA)} \times C_{95}) + Q_{u(LTA)} \times C_u] / (Q_{e(LTA)} + Q_{u(LTA)})$$

Since the instream concentration of these parameters did not exceed the Sample Standard, a wasteload allocation calculation is not required.

d. Industrial and Municipal Process and Cooling Water

OAC 785-45-5-15(b) states that this beneficial use "will be protected by application of the criteria for the other beneficial uses." Therefore, additional permit action will not be needed to protect this beneficial use.

e. Primary Body Contact Recreation

The wastewater discharged through Outfall 008 does not include sanitary waste; therefore, it is not expected that Coliform bacteria, Escherichia coli, or Enterococci will be present in the waste stream. Reasonable potential to violate the water quality standards under this beneficial use does not exist and permit action will not be needed.

f. Aesthetics

The following narrative requirement will be included in the permit to meet the requirements of OAC 785:45-5-19(c)(3): "There shall be no discharge of floating solids or visible foam in other than trace amounts."

g. Fish Flesh

Criteria for the protection of human health for the consumption of fish flesh are specified at OAC 785:45-5-20(b), and are implemented according to the procedures in OAC 785:46, Subchapter 7. No pollutants to which a human health/fish flesh criterion applies that are present in the IWTP effluent at measurable levels. Additional human health/fish flesh criteria are recommended by EPA in the NRWQC. However, none of the additional NRWQC criteria are present in the IWTP effluent at measurable levels. Therefore, the permit will not require limits or monitoring requirements for this beneficial use.

B. MONITORING REQUIREMENTS

1. Effluent Monitoring Requirements (Outfall 001)

a. General

In accordance with OAC 252:690-3-90, where reasonable potential to exceed an applicable criterion is not exhibited, the background is unknown and there are fewer than 10 effluent data points to characterize the effluent, further effluent monitoring may be warranted based on use of the TSD method for computing $C_{95(M)}$. The TSD procedure accounts for the inherent uncertainty in characterizing an effluent distribution from a small data set.

b. Applicability

Since no water quality-based limitations are required, all pollutants detectable in the discharge which have state water quality criteria are screened for reasonable potential using $C_{95(M)}$ in place of C_{95} to determine which of them may require effluent monitoring. The same reasonable potential equations as described in sections V.D.2 (toxic substance criteria) and V.D.3 (Agriculture criteria) are used.

c. Results of Reasonable Potential Effluent Screening Using $C_{95(M)}$ (Outfall 001)

Where C_d , calculated using $C_{95(M)}$ in place of C_{95} , exceeds an applicable criterion for a pollutant, a short term effluent monitoring requirement (sufficient to collect a minimum of ten data points) is established in the permit for that pollutant in accordance with OAC 252:690-3-90(a). Reasonable potential may then be reassessed with the larger effluent data set and the permit reopened, if necessary, to add appropriate effluent limitations. Results of the reasonable potential screens using $C_{95(M)}$ are shown in the following tables.

COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
WITH RAW WATER NUMERICAL CRITERIA FOR PUBLIC AND PRIVATE WATER SUPPLY
LOWER ILLINOIS RIVER

OUTFALL 001

PARAMETER	Effluent Concentration $C_{95(M)}$ $\mu\text{g/l}$	Instream Concentration C_d $\mu\text{g/l}$	Instream Raw Water Criteria ($C_{d(Raw)}$) $\mu\text{g/l}$	Is $C_d > C_{d(Raw)}$ Criteria?	WLA $\mu\text{g/l}$
Fluoride	1.860	0.003	4	No	---
Nitrate-Nitrite as N	11.158	0.018	10	No	---
Barium, total	0.211	0.000	1	No	---
Cadmium, total	18.597	0.031	20	No	---
Copper, total	30.995	0.051	1000	No	---
Mercury, total	3.719	0.006	2.0	No	---
Zinc, total	353.343	0.580	5000	No	---

(1) Based on Analytical data submitted on July 9, 2004.

Since none of the parameters exceeded the raw water numerical criteria, effluent monitoring is not required.

COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
WITH HUMAN HEALTH, FISH FLESH AND WATER NUMERICAL CRITERIA FOR PUBLIC AND PRIVATE
WATER SUPPLY
LOWER ILLINOIS RIVER

OUTFALL 001

PARAMETER	Effluent Concentration $C_{95M}(1)$ $\mu\text{g/l}$	Instream Concentration C_d $\mu\text{g/l}$	Instream Raw Water Criteria ($C_{d(Raw)}$) $\mu\text{g/l}$	Is $C_d > C_{d(Raw)}$ Criteria?	WLA $\mu\text{g/l}$
Cadmium, total	55.791	0.016	0.031	No	---
Mercury, total	30.995	0.003	0.006	No	---

(1) Based on Analytical data submitted on July 9, 2004.

Since none of the parameters exceeded the human health, fish flesh and water numerical criteria, effluent monitoring is not required.

COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
WITH AQUATIC TOXICITY NUMERICAL CRITERIA FOR FISH AND WILDLIFE PROPOGATION
LOWER ILLINOIS RIVER

Results of Acute and Chronic Toxicity RP Screens using C_{95m} (Outfall 001)
(concentrations in $\mu\text{g/l}$ unless otherwise specified)

Effluent Characteristic	Acute Toxicity				Chronic Toxicity			
	C_d	C_{acute}	$C_d > C_{acute}?$	WLA_{acute}	C_d	$C_{chronic}$	$C_d > C_{chronic}?$	$WLA_{chronic}$
Cadmium, total	0.472	36.19	No	N/A	0.957	1.19	No	N/A
Copper, total	0.787	20.38	No	N/A	1.595	13.51	No	N/A
Mercury, total	0.094	2.4	No	N/A	0.191	1.302	No	N/A
Zinc, total	8.972	123.48	No	N/A	18.181	111.85	No	N/A

COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
WITH YEARLY MEAN STANDARD FOR AGRICULTURE
LOWER ILLINOIS RIVER
OUTFALL 001

Results of Agriculture RP Screens using C_{95m} (Outfall 001)
(concentrations in $\mu\text{g/l}$ unless otherwise specified)

Parameter	Effluent Conc., C_e (1) mg/l	$C_{95M} = C_e \times 6.199$ mg/l	Yearly Mean Standard (2) mg/l	Upstream Conc., C_u mg/l	Instream Conc., C_d mg/l	Is $C_d > C_{yms}?$	YMS Wasteload Allocation mg/l
Chlorides	---	---	---	---	---	N/A	---
Sulfates	11.1	68.8089	29	17	17	No	---
TDS	---	---	---	---	---	N/A	---

(1) Based on Analytical data submitted on July 9, 2004.

(2) From OAC 785:45, Appendix F

Since instream concentration of these parameters did not exceed the Yearly Mean Standard, effluent monitoring is not required.

COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
WITH SAMPLE STANDARD FOR AGRICULTURE
LOWER ILLINOIS RIVER

Results of Agriculture RP Screens using C_{95M} (Outfall 008)
(concentrations in $\mu\text{g/l}$ unless otherwise specified)

Parameter	Effluent Conc., C_e (1) mg/l	$C_{95M} = C_e \times 2.13$ mg/l	Sample Standard (2) mg/l	Upstream Conc., C_u mg/l	Instream Conc., C_d mg/l	Is $C_d > C_{yms}$?	SS Wasteload Allocation mg/l
Chlorides	---	---	---	---	---	N/A	---
Sulfates	11.1	68.8089	41	17	17.1	No	---
TDS	---	---	---	---	---	N/A	---

(1) Based on Analytical data submitted on July 9, 2004.

(2) From OAC 785:45, Appendix F

Since the instream concentration of these parameters did not exceed the Sample Standard, effluent monitoring is not required.

2. Effluent Monitoring Requirements (Outfall 008)

c. Results of Reasonable Potential Effluent Screening Using $C_{95(M)}$ (Outfall 008)

Where C_d , calculated using $C_{95(M)}$ in place of C_{95} , exceeds an applicable criterion for a pollutant, a short term effluent monitoring requirement (sufficient to collect a minimum of ten data points) is established in the permit for that pollutant in accordance with OAC 252:690-3-90(a). Reasonable potential may then be reassessed with the larger effluent data set and the permit reopened, if necessary, to add appropriate effluent limitations. Results of the reasonable potential screens using $C_{95(M)}$ are shown in the following tables.

COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
WITH RAW WATER NUMERICAL CRITERIA FOR PUBLIC AND PRIVATE WATER SUPPLY
LOWER ILLINOIS RIVER

OUTFALL 008

PARAMETER	Effluent Concentration $C_{95M(1)}$ $\mu\text{g/l}$	Instream Concentration C_d $\mu\text{g/l}$	Instream Raw Water Criteria $(C_{d(Raw)})$ $\mu\text{g/l}$	Is $C_d > C_{d(Raw)}$ Criteria?	WLA $\mu\text{g/l}$
Fluoride	1860	5	4,000	No	---
Nitrate-Nitrite as N	12,398	33	10,000	No	---
Barium, total	248	1	1,000	No	---
Arsenic, total	43.393	0.115	40	No	---
Lead, total	30.995	0.082	100	No	---
Mercury, total	3.719	0.010	2.0	No	---
Selenium, total	61.990	0.164	10	No	---
Zinc, total	353.343	0.936	5000	No	---

(1) Based on Analytical data submitted on July 9, 2004.

Since none of the parameters exceeded the raw water numerical criteria, effluent monitoring is not required.

COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
WITH HUMAN HEALTH, FISH FLESH AND WATER NUMERICAL CRITERIA FOR PUBLIC AND PRIVATE
WATER SUPPLY
LOWER ILLINOIS RIVER

OUTFALL 008

PARAMETER	Effluent Concentration $C_{95M}(1)$ $\mu\text{g/l}$	Instream Concentration C_d $\mu\text{g/l}$	Instream Raw Water Criteria ($C_{d(Raw)}$) $\mu\text{g/l}$	Is $C_d > C_{d(Raw)}$ Criteria?	WLA $\mu\text{g/l}$
Lead, total	30.995	0.001	5	No	---
Mercury, total	3.719	0.000	0.05	No	---

Since none of the parameters exceeded the human health, fish flesh and water numerical criteria, effluent monitoring is not required.

COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
WITH AQUATIC TOXICITY NUMERICAL CRITERIA FOR FISH AND WILDLIFE PROPOGATION
LOWER ILLINOIS RIVER

Results of Acute and Chronic Toxicity RP Screens using C_{95m} (Outfall 008)
(concentrations in $\mu\text{g/l}$ unless otherwise specified)

Effluent Characteristic	Acute Toxicity				Chronic Toxicity			
	C_d	C_{acute}	$C_d > C_{acute}?$	WLA_{acute}	C_d	$C_{chronic}$	$C_d > C_{chronic}?$	$WLA_{chronic}$
Arsenic, total	1.781	360	No	N/A	3.550	190	No	N/A
Lead, total	1.272	88.51	No	N/A	2.536	3.45	No	N/A
Mercury, total	0.153	2.4	No	N/A	0.304	1.302	No	N/A
Selenium	2.544	20	No	N/A	5.072	5	Yes	N/A
Zinc, total	14.499	123.48	No	N/A	28.910	111.85	No	N/A

Since Selenium exceeded the Fish and Wildlife chronic numerical criteria, effluent monitoring is required.

COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
WITH YEARLY MEAN STANDARD FOR AGRICULTURE
LOWER ILLINOIS RIVER

OUTFALL 008

Results of Agriculture RP Screens using C_{95M} (Outfall 008)
(concentrations in $\mu\text{g/l}$ unless otherwise specified)

PARAMETER	Effluent Conc., C_e (1) mg/l	$C_{95M} = C_e \times 6.199$ mg/l	Yearly Mean Standard (2) mg/l	Upstream Conc., C_u mg/l	Instream Conc., C_d mg/l	Is $C_d > C_{yms}?$	YMS Wasteload Allocation mg/l
Chlorides	---	---	---	---	---	N/A	---
Sulfates	6.5	40.294	29	17	17	No	---
TDS	---	---	---	---	---	N/A	---

(1) Based on Form 2C submitted on June 4, 2003.

(2) From OAC 785:45, Appendix F

The upstream concentration, C_u , is computed using data from OAC 785:45, Appendix F.

(3) The instream concentration, C_d , is calculated using the following mass balance equation:

$$C_d = [(Q_{e(LTA)} \times C_{95}) + Q_{u(LTA)} \times C_u] / (Q_{e(LTA)} + Q_{u(LTA)})$$

Since instream concentration of these parameters did not exceed the Yearly Mean Standard, effluent monitoring is not required.

**COMPARISON OF INSTREAM WASTE CONCENTRATION (C_d)
WITH SAMPLE STANDARD FOR AGRICULTURE
LOWER ILLINOIS RIVER**

Results of Agriculture RP Screens using C_{95m} (Outfall 008)
(concentrations in $\mu\text{g/l}$ unless otherwise specified)

PARAMETER	Effluent Conc., C_e (1) mg/l	$C_{95} = C_e \times 2.13$ mg/l	Sample Standard (2) mg/l	Upstream Conc., C_u mg/l	Instream Conc., C_d mg/l	Is $C_d > C_{yms}$?	SS Wasteload Allocation mg/l
Chlorides	---	---	---	---	---	N/A	---
Sulfates	6.5	40.2935	41	17	17.1	No	---
TDS	---	---	---	---	---	N/A	---

(1) Based on analytical data submitted on July 9, 2004.

(2) From OAC 785:45, Appendix F

Since the instream concentration of these parameters did not exceed the Sample Standard, effluent monitoring is not required.

2. Background Monitoring Requirements

OAC 252:690-3-10 requires that, where available, background levels be included in reasonable potential assessments and in calculating wasteload allocations.

a. Determination of Background Monitoring Requirements for Aquatic Toxicity, Human Health and Raw Water Column Criteria

Background levels are known for the following pollutants:

- For Outfall 001: None
- For Outfall 008: None

(1) Zero Background-Based Effluent Limits Required

Where zero background/water quality-based limits are established in a permit (derived from aquatic toxicity, human health and raw water column criteria only) for a pollutant based on an assumed zero background (or a partial background data set consisting of less than 10 data points), background monitoring for that pollutant is required. There are, however, two exceptions to this requirement, both of which exclude background concentration as a component in the wasteload allocation equation. These exceptions are as follows:

- where permit limits are based on a chronic toxicity criterion in an effluent-dominated discharge situation (i.e., where $Q^* > 0.3333$), and
- where permit limits are based on a human health criterion (either fish flesh or fish flesh and water) and the associated wasteload allocation was set equal to that criterion because the discharge is in close proximity to a PWS intake.

The latter exception is not applicable to either Outfall 001 or 008. The first exception, however, is applicable to the selenium effluent monitoring requirements for Outfall 008, which is chronic toxicity-based.

(2) Sensitive BT/C (Background Trigger to Criterion) Ratio

Where permit limits for a pollutant are not required and the background is unknown (i.e., assumed zero), background monitoring may be justified for the purpose of reassessing whether there is reasonable potential to exceed an applicable criterion. In such cases, OAC 252:690-3-12 requires that a background trigger to criterion (BT/C) ratio be used to determine whether background monitoring is warranted for a pollutant. Effluent monitoring for the pollutant may or may not also be required. The trigger background concentration for a given pollutant and water quality criterion is defined in OAC 252:690-1-2 as “the background concentration necessary to trigger reasonable potential for a substance to exceed an applicable criterion given a specified mean effluent concentration.” As described in Appendix J of OAC 252:690, the procedure involves calculating a BT/C ratio for each applicable criterion and comparing each such ratio with an associated threshold value, $(BT/C)_{max}$, which is a function of the magnitude of each criterion. Where the value of the BT/C ratio exceeds 1.0, the C_{95} concentration is less than the criterion and there is no possibility of the pollutant exhibiting reasonable potential to exceed that criterion at any background level less than or equal to the criterion. Where the BT/C ratio ≤ 1.0 , the value of the C_{95} concentration is at least as great as the criterion and, depending on the magnitude of the criterion, background monitoring may be justified. If the BT/C ratio $\leq (BT/C)_{max}$ for any of the applicable criteria for a pollutant, then background monitoring for that pollutant is required. In order for $(BT/C)_{max}$ to be appropriately more sensitive to criteria of smaller magnitude, at which a measurable background level of a pollutant may have a relatively greater impact in the determination of reasonable potential, the value of the $(BT/C)_{max}$ threshold value function increases as the magnitude of a criterion decreases within the range of 1 to 1000 $\mu\text{g/l}$.

(a) Calculation of $(BT/C)_{max}$

The value of $(BT/C)_{max}$ for each applicable criterion is an inverse function of the criterion’s magnitude with two break points (or “hinges”), one at 1 $\mu\text{g/l}$ and the other at 1000 $\mu\text{g/l}$. It is calculated as follows:

$$(BT/C)_{max} = 1.0, \text{ where the criterion} \leq 1.0 \mu\text{g/l.}$$

$$(BT/C)_{max} = \frac{1}{2^{\log(\text{criterion})}}, \text{ where the criterion} > 1.0 \mu\text{g/l and} \leq 1000 \mu\text{g/l.}$$

$$(BT/C)_{max} = 0.125, \text{ where the criterion} > 1000 \mu\text{g/l.}$$

(b) Calculation of BT/C Ratios

Background trigger concentrations are first calculated for all applicable criteria and the BT/C concentration is then calculated by dividing the criterion-specific background trigger concentration

by the applicable criterion. Values of $Q_{e(D)}$, Q^* , C_{95} , C_A , C_C , C_{FF} , C_{FFW} , and C_{Raw} are as previously defined.

(i) Acute Toxicity Criteria

$$BT/C_{Acute} = \frac{\left(\frac{64.63 C_A - Q_{e(30)} C_{95}}{64.63 - Q_{e(30)}} \right)}{C_A}, \text{ where } Q_{e(30)} < 64.63 \text{ mgd.}$$

BT/C_{Acute} is not defined for values of $Q_{e(30)} \geq 64.63$ mgd.

(ii) Chronic Toxicity Criteria

For discharges to streams, the following equations are used for values of $Q^* < 0.3333$:

$$BT/C_{Chronic} = \frac{\left(\frac{(1 + Q^*) C_C - 1.94 Q_{e(30)} C_{95}}{1 - 0.94 Q^*} \right)}{C_C}, \text{ where } Q^* \leq 0.1823$$

$$BT/C_{Chronic} = \frac{\left(\frac{(6.17 - 15.51 Q^*) C_C - C_{95}}{5.17 - 15.51 Q^*} \right)}{C_C}, \text{ where } 0.1823 < Q^* < 0.3333$$

$BT/C_{Chronic}$ is not defined for $Q^* \geq 0.3333$ (i.e., for effluent-dominated discharge situations), since C_b drops out as a component of the chronic toxicity reasonable potential equation at that point.

(iii) Human Health/Fish Flesh Criteria

$$BT/C_{FF} = \frac{(1 + Q^*) C_{FF} - Q^* C_{95}}{C_{FF}}$$

(iv) Raw Water Column Criteria

$$BT/C_{Raw} = \frac{(1 + Q^*) C_{Raw} - Q^* C_{95}}{C_{Raw}}$$

(v) Human Health/Fish Flesh and Water Criteria

$$BT/C_{FFW} = \frac{(1 + Q^*) C_{FFW} - Q^* C_{95}}{C_{FFW}}$$

(3) Summary of Background Monitoring Requirements

(a) Outfall 001

Effluent Characteristic	Effluent limit required? ^a	Backgrd assumed zero? ^b	BT/C ratio procedure applicable?	BT/C Ratio Assessment				Backgrd monitoring required?
				Type Criterion ^c	BT/C Ratio ^d	(BT/C) _{max}	BT/C ratio ≤ (BT/C) _{max} ?	
Fluoride	No	Yes	Yes	Raw	> 1	0.125	No	No
Nitrate-Nitrite (as N)	No	Yes	Yes	Raw	> 1	0.125	No	No
Barium, total	No	Yes	Yes	Raw	> 1	0.125	No	No
Copper, total	No	Yes	Yes	Raw	> 1	0.125	No	No
				Acute	> 1	0.404	No	
				Chronic	> 1	0.457	No	
Cadmium, total	No	Yes	Yes	Raw	> 1	0.406	No	Yes ^e
				FFW	> 1	0.447	No	
				Acute	> 1	0.339	No	
				Chronic	0.763	0.948	YES	
				FF	> 1	0.263	No	
Mercury, total	No	Yes	Yes	Raw	> 1	0.812	NO	Yes ^e
				FFW	0.979	1.000	YES	
				Acute	> 1	0.768	NO	
				Chronic	> 1	0.924	NO	
				FF	0.979	1.000	YES	
Zinc, total	No	Yes	Yes	Raw	> 1	0.125	No	No
				Acute	> 1	0.235	No	
				Chronic	0.995	0.242	No	

^a Includes the criterion (in parentheses) upon which any water quality-based permit limits are based.

^b In addition to background levels calculated from complete data sets consisting of 10 or more data points, the use of background levels published in USGS, BUMP, USAP or TMDL reports will be considered equivalent to a complete background data set and are therefore considered "known." In accordance with OAC 252:690-3-11(d), if only a partial background data set is available (less than 10 data points), it is considered the same as "background assumed zero" for purposes of calculating permit limits and determining whether additional background monitoring may be required.

^c BT/C ratios for all criteria are based on discharge from Outfall 008 to the Illinois River.

^d BT/C ratios ≤ 1 are shown rounded to 3 decimal places.

^e Background monitoring requirement based on a sensitive BT/C ratio.

Based on this analysis, background monitoring is required for Cadmium and Mercury at Outfall 001.

(b) Outfall 008

Background monitoring requirements for Outfall 008 are determined under post-flow consolidation conditions and are summarized by pollutant in the following table.

Summary of Background Monitoring Requirements (Outfall 008)

Effluent Characteristic	Effluent limit required? ^a	Backgrd assumed zero? ^b	BT/C ratio procedure applicable?	BT/C Ratio Assessment				Backgrd monitoring required?
				Type Criterion ^c	BT/C Ratio ^d	(BT/C) _{max}	BT/C ratio ≤ (BT/C) _{max} ?	
Fluoride	No	Yes	Yes	Raw	> 1	0.125	No	No
Nitrate-Nitrite (as N)	No	Yes	Yes	Raw	> 1	0.125	No	No
Barium, total	No	Yes	Yes	Raw	> 1	0.125	No	No
Arsenic, total	No	Yes	Yes	Raw	> 1	0.329	No	No
				Acute	> 1	0.170	No	
				Chronic	> 1	0.206	No	
				FF	> 1	0.201	No	
Lead, total	No	Yes	Yes	Raw	> 1	0.250	No	No
				FFW	1.000	0.616	No	
				Acute	> 1	0.259	No	
				Chronic	0.813	0.689	No	
				FF	> 1	0.379	No	
Mercury, total	No	Yes	Yes	Raw	> 1	0.812	No	Yes ^e
				FFW	0.999	1.000	YES	
				Acute	> 1	0.768	No	
				Chronic	> 1	0.924	No	
				FF	0.999	1.000	YES	
Selenium, total	No	Yes	Yes	Raw	0.936	0.500	No	No
				Acute	0.997	0.406	No	
				Chronic	0.709	0.616	No	
Zinc, total	No	Yes	Yes	Raw	> 1	0.125	No	No
				Acute	> 1	0.235	No	
				Chronic	0.992	0.242	No	

^a Includes the criterion (in parentheses) upon which any water quality-based permit limits are based.

^b In addition to background levels calculated from complete data sets consisting of 10 or more data points, the use of background levels published in USGS, BUMP, USAP or TMDL reports will be considered equivalent to a complete background data set and are therefore considered "known." In accordance with OAC 252:690-3-11(d), if only a partial background data set is available (less than 10 data points), it is considered the same as "background assumed zero" for purposes of calculating permit limits and determining whether additional background monitoring may be required.

^c BT/C ratios for all criteria are based on discharge from Outfall 008 to the Illinois River.

^d BT/C ratios ≤ 1 are shown rounded to 3 decimal places.

^e Background monitoring requirement based on a sensitive BT/C ratio.

Based on this analysis, background monitoring is required for Mercury at Outfall 008.

V. NON-DISCHARGE REQUIREMENTS

A. SURFACE IMPOUNDMENT INFORMATION

1. The facility's permit application includes information for four total retention surface impoundments (4) T01-T04 and Eleven (11) flow through total retention surface impoundments (F01 – F11) described as follows:

Description of Surface Impoundments

Wastewater Classification and Surface Impoundment Description OAC 252:616-1-2			Liner Type OAC 252:616-7-2	Impoundment Capacity (top dimensions)	Wastewater Destination
S.I. No.	Impoundment Description	Wastewater Description			
T01	Fertilizer Pond 3W	Groundwater from 95A collection trench Class III	Compacted Clay and Hypalon liner	400 X 400 X 25' top 14,460,000 gallons	Total Retention, evaporation and land application
T02	Fertilizer Pond 3E	Out of Service (1)	Compacted Clay and Hypalon liner	400 X 400 X 25' top 18,020,000 gallons	Total Retention and evaporation
T03	Fertilizer Pond 4	Out of Service (1)	Compacted Clay and Hypalon liner	415 X 420 X 25' top 16,360,000 gallons	Total Retention and evaporation
T04	Fertilizer Pond 5	Stormwater from the Raffinate sludge storage ponds –Class III	Compacted Clay and Hypalon liner	405 X 405 X 25' top 16,360,000 gallons	Total Retention, evaporation and land application
T05	Fertilizer Pond 6	Out of Service (1)	Compacted Clay and Hypalon liner	405 X 405 X 25' top 18,020,000 gallons	Total Retention, and evaporation
F01	Pond 2	Wastewater consists of stormwater runoff from synthetic liner cover Out of Service (1)-Class III	HDPE Synthetic Liner	300 X 700 X 18' top 2,960,000 gallons	Outfall 008
F02	Clarifier 1A	Raffinate Sludge Storage, Recovered Groundwater – Class III	Compacted Clay and Hypalon liner	188 X 238 X 13' top 2,580,000 gallons	Clarifier 3A
F03	Clarifier 2A	Raffinate Sludge Storage, Recovered Groundwater- Class III	Compacted Clay and Hypalon liner	188 X 238 X 13' top 2,580,000 gallons	Clarifier 3A
F04	Clarifier 3A	Raffinate Sludge Storage, Recovered Groundwater – Class III	Compacted Clay and Hypalon liner	188 X 238 X 13' top 2,580,000 gallons	Pond 5
F05	Clarifier 4A	Raffinate Sludge Storage – Class III	Compacted Clay and Hypalon liner	188 X 238 X 13' top 2,580,000 gallons	Clarifier 3A
F06	Fluoride Holding Basin 1	Calcium Fluoride Sludge Storage – Out of Service (1) Class III	Compacted Clay	130 X 190 X 16' top 1,490,000 gallons	Outfall 008
F07	Fluoride Holding Basin 2	Calcium Fluoride Sludge Storage – Out of Service (1) Class III	Compacted Clay	150 X 220 X 9' top 1,610,000 gallons	Outfall 008

F08	North Fluoride Settling Basin	Calcium Fluoride Sludge Storage – Out of Service (1) Class III	Compacted Clay	75 X 120 X 7.5 top 370,000 gallons	Outfall 001
F09	South Fluoride Settling Basin	Calcium Fluoride Sludge Storage – Out of Service (1) Class III	Compacted Clay	75 X 120 X 7.5 top 370,000 gallons	Outfall 001
F10	Emergency Basin and North Ditch	Radiological Treatment of Stormwater Class III	Native Soil	405 X 405 X 25' top 16,360,000 gallons	Outfall 008
F11	Fluoride Clarifier	Calcium Fluoride Sludge Storage – Out of Service (1) Class III	Compacted Clay	85 X 220 X 14' top 820,000 gallons	Outfall 001

- (1) These impoundments are no longer in use and closure plans have been approved but not yet implemented.

Location of Surface Impoundments

S.I.	Legal Location	Relative Location of Impoundments
T01	N/2, NW/4, SW/4, SE/4 & S/2 SE/4, NW/4, SE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Approximately 400 yds. south of the Main Processing Building
T02	N/2, NW/4, SW/4, SE/4 & S/2 SE/4, NW/4, SE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Approximately 400 yds. south of the Main Processing Building
T03	N/2, NE/4, SE/4, SE/4 & S/2 SW/4, NE/4, SE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Approximately 400 yds. south of the Main Processing Building
T04	N/2, NW/4, SW/4, SE/4 & S/2 SW/4, NW/4, SE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Approximately 400 yds. south of the Main Processing Building
T05	NE/4, SE/4, SE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Approximately 400 yds. south of the Main Processing Building
F01	SW/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located west of the Clarifier ponds
F02	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located east of Pond 2 and north of the fluoride settling ponds
F03	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located east of Pond 2 and north of the fluoride settling ponds
F04	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located east of Pond 2 and north of the fluoride settling ponds
F05	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located east of Pond 2 and north of the fluoride settling ponds
F06	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located south of the Fluoride Settling Basins
F07	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located in the Northwest corner of the facility
F08	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located south of the Clarifier A basin area
F09	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located south of the Clarifier A basin area

F10	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located within the Process area
F11	SE/4, SW/4, NE/4, Section 21, Township 12N Range 21EIM, Sequoyah County, Oklahoma	Located south of the Clarifier A basin area

2. Other Surface Impoundment Requirements

a. Freeboard Requirements [OAC 252:616-7-1(7)]

A minimum freeboard of three (3) feet shall be maintained on all Total Retention Surface impoundments and a minimum freeboard of two (2) feet shall be maintained on all Flow Through Surface impoundments.

- b. The permit may be reopened to implement and/or require impoundment modifications, additions, extensions, and/or operational changes; monitoring and reporting; reclassification of wastes; sludge management plans; best management practices; closure plans; and/or other appropriate actions.

c. Depth to Groundwater

The minimum depth to groundwater shall be fifteen (15) feet in accordance with OAC 252:616-7-1(4). In accordance with OAC 252:616-7-1(4)(B), the DEQ may waive the fifteen (15) foot requirement based on the use of enhanced liners that will protect waters of the state. The average depth to groundwater from the base of the impoundment system is approximately 21'. Since these impoundments are 25" deep, the base of the impoundments is below the water table indicating that the separation requirements have not been satisfied. However, since the impoundments were constructed with clay or clay and a Hypalon (a synthetic rubber reinforced membrane) liner, and constitute an enhanced liner that which will protect groundwater, a variance to the 15' separation requirement is, hereby, granted.

- d. At such time as Surface Impoundments T01 – T04 and F01-F11 are to be permanently taken out of service or at such time as the contents of any of these Surface Impoundments pose a risk to the environment or waters of the State, the owner or operator of the facility shall follow all closure requirements contained in OAC 252:616-13.
- e. Solids, sludge or other pollutants removed in the course of treatment or control of wastewater shall be disposed of in a State-approved industrial waste disposal site or sent for recycling.

If any such industrial wastes are removed from the facility, the permittee shall keep accurate records that include the following information:

- Name and address of company hauling waste.
- The type and amount of waste hauled.
- The final disposal site of waste hauled.

Upon request, the above records shall be made available to the Department's staff for review.

- d. In all other respects, Surface Impoundments T01 – T13 and F01-F11 shall be subject to standard conditions for surface impoundments contained in OAC 252:616, Subchapters 5, 7, and 13, including but not limited to requirements for construction, operation, maintenance, monitoring and closure.

VI. SPECIFIC REQUIREMENTS FOR LAND APPLICATION OF WASTEWATER

1. Production and Characterization of wastewater to be land applied.

Wastewater to be land applied is derived from produced water from recovery trenches 095 and 005, Pond 5 and from Raffinate de-watering. It is estimated that that approximately 9,590,000 gallons/year of wastewater will be available for land application. An evaluation of past land application activities was conducted to determine if excess loading of Nitrogen and metals has occurred. This analysis indicated that Total Nitrogen loading has been in the 300-400 lbs/acre/yr and included fractional amounts of several metals. An assessment of the wastewater that will be land applied in the future indicated that the metals concentration in the Raffinate de-water is considerably higher than the historic loading. However, this waste stream will make up only about 11% of the total volume of wastewater to be land applied. In order to insure that excessive metals loading does not occur, annual metals loading limits as defined in OAC 252:606 which adopts by reference 40 CFR §503, "Standards for the Use or Disposal of Sewage Sludge" will be included in the permit.

The following table shows the composition of wastewater samples used to calculate soil loading:

Parameter	095 Trench	005 Trench	Pond 5 (from run off)	Raffinate De-Water
Nitrate Nitrogen (mg/l)	1700	286	379	3490
Ammonia-N (mg/l)	--	--	345 (est)	1620
Volume of Wastewater Land Applied Annually (gal)	210,000	340,000	8,000,000	1,040,000
Percent of total liquids land applied annually	2.19	3.55	83.42	10.84

The facility has identified eleven land application sites (L01-L11) that may be utilized for the land application of wastewater. These eleven sites total 338.8 acres (owned by Sequoyah Fuels) and are used to grow Bermuda grass hay around the plant site. The application sites (all located in T12N, R21E1M) are shown in the following table:

Location of Land Application Sites

Site Designation	Legal Description	Acres Available
L01- Agland # 1	A - W/2, SW, Sec 21 B - E/S, NW, NW, NW, SEC 21	58.9
L02- Agland #2	A - NE, NW, NW, SEC 21 B - E/2, SE, NW, NW, SEC 21	8.7
L03- Agland #3	A - NE, NW, SW, SEC 21 B - SW, SE, SW, SEC 21 C - W/2, SE, SE, SW, SEC 21	25 est
L03- Agland #4	A - E/2, SW, NE, SW, SEC 21 B - W/2, SE, NE, SW, SEC 21 C - W/2, NE, SE, SW, SEC 21	4.5
L04- North Meadow	A - E/2, NE, NE SE, SEC 21 B - E/2, SE, NE, SE, SEC 21 C - E/2, NE, SE, SE, SEC 21	13.3
L05 South Meadow	A - N/2, NE, SE, SEC 28	24.8
L06- Pond Area	A - NW, SE, SE, SEC 21 B - S/2, SW, NE, SE, SEC 21 C - N/2, SW, SE, SEC 21 D - E/2, NE, SE, SE, SEC 21 E - E/2, SE, NE, SW, SEC 21	53.8

	F – E/2, NE, NE, SW, SEC 21 G – N/2, NW, NW, SE, SEC 21 H – N/2, SW, SE, SE, SEC 21 I – N/2, SE, SW, SE, SEC 21 J – N/2, SW, SE, SE, SEC 21	
L07- Timber North #1	A – S/2, SE, SE, SE, SEC 16 B – SE, SW, SE, SEC 16, LESS COE C – N/2, NE, NE, SEC 21 D – N/2, NW, NE, SEC 21, LESS COE	53.7
L08- Timber North #2	A – S/2, SE, SE, SE, SEC 16 B – SE, SW, SE, SEC 16, LESS COE C – N/2, NE, NE, SEC 21 D – N/2, NW, NE, SEC 21, LESS COE	11.4
L09- Timber South #1	A – S/2, NE, NW, SE, SEC 21 B – NW, NE, SE, SEC 21 C – N/2, SW, NE, SE, SEC 21	13.8
L10- Timber South #2	A – W/2, SE, NE, SE, SEC 21 B – W/2, NE, SE, SE, SEC 21 C – SE, SE, SE, SEC 21	13.3
L11- Timber South #3	A – NW, NE, SEC 28, NORTH OF I-40 B – NW, NE, NW, SEC 28 C – S/2, NE, NE, NW, SEC 28 D – SW, NE, NW, SEC 28 E – SE, NE, NW, SEC 28, NORTH OF I-40	57.6

2. Agronomic Cropping

In order to determine the mass loading for nitrogen it is necessary to determine the % plant available nitrogen (%PAN) in the waste to be land applied. The percentage is calculated by using the following formula:

$\%PAN = \%nitrate + VF \times \% Ammonia-n + MF \times (\%TKN - \%Nitrate - \%Ammonia-n)^*$ where
 VF = the ammonia volatilization factor equals 0.5 for surface spreading
 MF = the Mineralization Factor equals 0.2 for surface spreading

Nitrogen Loading contribution from liquid material:

Constituent percentages are calculated from analytical data for liquids to be land applied included in the permit application.

Based on this information a weighted average composition for liquids is calculated as follows:

Constituent	095 Trench	005 Trench	Pond 5	Raffinate De-Water	Weighted Average Concentration (mg/l)
TKN	--	--	--	--	0
Ammonia-N	0.021 x 1700	0.0355 x 286	0.8342 x 379	0.1084 x 3490	740
Nitrate-N	--	--	0.8342 x 345	0.1084 x 1620	463

The weight of each constituent from liquids to be land applied is calculated as follows:

$weight\ kg/yr = constituent\ concentration\ kg/l \times 0.2642\ l/gal \times volume\ of\ liquid\ to\ be\ land\ applied\ gal/yr$

Constituent	Weighted Average Concentration (mg/l)	conversion factor	Volume of liquid to be land applied	Total Weight of Constituent Land Applied = Column 2 x Column 3 x Column 4 (kg/yr)
TKN	--	0.000003875	9590000	--
Nitrate-N	740	0.000003875	9590000	27499
Ammonia-N	463	0.000003875	9590000	17221

The Total weight of all constituents to be land applied is equal to the sum of the solid and liquid contribution and is shown as follows:

Constituent	Total weight of Constituents to be Land Applied (kg)	Percent of Total Nitrogen
TKN	--	--
Nitrate-N	27499	61
Ammonia-N	17221	39

At this point it is necessary to determine what fraction of the total weight of the nitrogen will available for plant growth. The %Plant Available Nitrogen (%PAN) is calculated by the formula shown in Section 3 above and is as follows:

$$\%PAN = \%nitrate + VF \times \% ammonia-n + MF \times (\%TKN - \%Nitrate-N - \%Ammonia-N)$$

Using this formula the amount of plant available nitrogen from the total amount of nitrogen solids to be land applied is calculated as follows:

$$\%PAN = 61 + 0.5 \times (39) + 0.2 \times (0 - 61 - 39)$$

$$\%PAN = 61 + 19.5 - 20 = 60.5 \%$$

For purposes of calculating land application loading rates, the %PAN will be applied to the total weight of Nitrogen available. The remaining fraction of nitrogen (39.5%) is lost by volatilization (this is usually the ammonia-n fraction being held by the soil as organic nitrogen which is not available for plant growth) or by leaching to the groundwater. Soil samples taken twice a year to evaluate future loading rates do not indicate downward migration of nitrogen to the groundwater.

As such, nitrogen loading is calculated as follows:

The weight of total nitrogen available for land application is $(27,499 + 17,221) = 44,717$ kg/yr
Therefore the weight of PAN is $44,717$ kg/yr \times $0.605 = 27,054$ kg/yr.

This facility has 338.8 acres (137.1 hectares) available for land application. The Total Nitrogen application rate would then be $44,717$ kg/yr / 137.1 hectares = 326.13 kg/hectare/yr or 290.93 lbs/acre/yr of which 176.01 lbs/acre/yr would be considered to be PAN.

The Facility is using the PAN to grow Bermuda hay which has a maximum annual nitrogen plant uptake rate that ranges from 475 to 600 kg/hectare/yr (423 - 534 lbs/acre/yr). The proposed PAN loading rate is well within the uptake range of the Bermuda grass.

4. Other Specific Requirements for Land Application of Wastewater and Sludge

- a. The hydraulic loading at land application sites L01-L11 shall be maintained to prevent surface runoff of applied wastewater and to prevent persistent flooding (persistent flooding is defined as soil which remains saturated for more than 24 hours). The annual rate shall not exceed 700 pounds of Total Nitrogen (or 423 lbs/acre/yr of PAN) per acre per year. These limits are set so as not to exceed the maximum nitrogen uptake of Bermuda grass of 600 kg/ha/yr. The SFC NRC license includes limits for Radium-226 of 2 pCi/l and Uranium limits of 0.1 mg/l. These limits will be included in this permit.
- b. The nitrogen loading at land application sites L01-L11 shall be maintained to minimize the formation and infiltration of nitrates and nitrate-producing compounds in concentrations that may impact the groundwater.
- c. Land application of wastewater shall not occur during periods of precipitation, when the soil is frozen or while the soil is saturated. The wastewater must be stored in the surface impoundments T01 and T02 until the soil is capable of receiving wastewater without persistent flooding or surface water runoff.
- d. Land application of wastewater shall not cause permanent vegetative damage or otherwise prevent growth after cessation of application of wastewater.
- e. Land application sites L01-L11 shall be managed to prevent site conditions that have the potential to impact aesthetics, including but not limited to, odors, waste piles, and sludges.
- f. The land application of wastewater shall not occur within 250 feet of a well used for potable water.
- g. The land application of wastewater shall not occur within 100 feet of a stream or body of water and shall not occur within two feet of the highest seasonal water level on a site.
- h. A 10 foot buffer zone is required between the land application site and the adjacent property boundary. A buffer is not required between adjacent sites.
- i. The permit may be reopened to implement and/or require land application modifications, additions, extensions, cessation and/or operational changes; additional monitoring and reporting (including but not limited to soil sampling); reclassification of wastes, sludge management plans; best management practices; land application site closure and/or closure plans; remediation and/or remediation plans; monitoring wells and/or subsurface monitoring plans; and/or other appropriate actions.

The following table summarizes the Annual Land Application loading limits:

**Annual Land Application Loading Limitations
(Units are Lbs/Acre/Year unless otherwise specified)**

Wastewater Constituent	Allowed Maximum	Previous Permit	Draft Permit
Nitrogen, PAN	426	423**	423
Arsenic, Total*	1.79	N/A	1.79
Cadmium, Total*	1.69	N/A	1.69
Chromium, Total*	134	N/A	134
Copper, Total	67	N/A	67
Nickel, Total*	18.75	N/A	18.75
Lead, Total*	13.39	N/A	13.39

Selenium, Total*	4.46	N/A	4.46
Mercury, Total*	0.76	N/A	0.76
Zinc, Total*	125	N/A	125
Radium 226 (pCi/l)	2.0	2.0**	2.0
Uranium (mg/l)	0.1	0.1**	0.1

* Annual Mass Loading limit allowed by 40 CFR Part 503, "Standards for the Use or Disposal of Sewage Sludge".

** Limits established by the Nuclear Regulatory Commission (NRC) and included in the facilities NRC license.

l. Wastewater Monitoring Requirements

- (1) Each waste stream that contributes wastewater to be land applied shall be tested annually. The Permittee shall collect representative samples of each waste stream and have them analyzed for the following constituents: soil pH and the nutrients – Total Kjeldahl Nitrogen (TKN), nitrogen (N), ammonia (NH₄)-N, nitrate (NO₃)-N, potassium (K) and phosphorus (P) and the metals included in 40 CFR Part 503, "Standards for the Use or Disposal of Sewage Sludge".
- (2). Based on the results of the tests, the annual nitrogen loading rate may be adjusted to insure the plant uptake is not exceeded.

m. Soil Monitoring Requirements

(1) Soil sampling

Soil samples shall consist of a composite sample taken from sites proposed or used for the land application of wastewater. Soil testing procedures applicable for use in the local area in accordance with Oklahoma State University soil testing guidance or the local NRCS may be used. Sampling of proposed land application sites is required to determine the background concentration of constituents to be land applied for disposal.

(2) Soil monitoring.

Each land application site that receives solids, sludge or wastewater shall be tested annually to determine the residual nitrogen content. The Permittee shall collect representative soil samples from each land application site that received waste or wastewater and have them analyzed for the following constituents: soil pH and the nutrients – Total Kjeldahl Nitrogen (TKN), nitrogen (N), ammonia (NH₄)-N, nitrate (NO₃)-N, potassium (K) and phosphorus (P) and the metals included in 40 CFR Part 503, "Standards for the Use or Disposal of Sewage Sludge".

- (3). Based on the results of the soil tests, the annual nitrogen loading rate may be adjusted to insure the plant uptake is not exceeded.

5. Record keeping and Reporting Requirements

(a). Records. Maintain the following land application records:

- (1) location, day and hour land application began and ended, and the method of application;
- (2) analytical data, volume and source(s) of wastewater applied;
- (3) loading rates;
- (4) weather conditions during the application period;
- (5) type of crop, grass or vegetation grown on site;
- (6) pH of wastewater at beginning of application, or weekly if application exceeds seven consecutive days; and
- (7) monitoring records, including the date, time and exact place of the sampling or measurement, the name of the sampler, when analysis began, the name of the certified laboratory and the analytical results.

(b) Reporting requirements:

- (1) The owner or operator shall submit reports of monitoring and land application records by month on a quarterly basis unless otherwise specified.
- (2) The quarterly reports will be due on or before the last working day of the month following the close of each quarter (i.e., April, July, October and January).
- (3) Monitoring information shall be submitted to the DEQ on self-monitoring report (SMR) forms or other forms provided or approved by the DEQ.
- (4) The owner or operator shall submit copies of the Ammonium Nitrate Fertilizer Application Program annual completion report required by the Facility NRC license.

VII. DRAFT PERMIT LIMITS AND OTHER REQUIREMENTS

A. DISCHARGE LIMITATIONS

Permit requirements are based on NPDES regulations (40 CFR §122, 123, and 436) and OAC 252:606 and OAC 252:690.

Concentration Limits for Outfall 001

Parameters	Technology-based		Water-Quality-based		Previous Permit		Draft Permit	
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Daily Avg.	Daily Max.	Monthly Avg.	Daily Max.
Flow (MGD)	Report	Report	Report	Report	Report	Report	Report	Report
Total Suspended Solids (mg/l)	57	114	N/A	N/A	57	114	57	114
Ammonia-N	2.6	10.5	N/A	N/A	2.6	10.5	2.6	10.5
Total Fluoride	3.2	7.9	N/A	N/A	3.2	7.9	3.2	7.9
Nitrate-N	7.9	32	N/A	N/A	7.9	32	7.9	32
COD	Report	Report	N/A	N/A	N/A	N/A	Report	Report
Radium 226	Report	30 pCi/l	N/A	N/A	Report	30 pCi/l	Report	30 pCi/l
Uranium	Report	300 pCi/l	N/A	N/A	Report	Report	Report	300 pCi/l
Thorium 230	Report	100 pCi/l	N/A	N/A	N/A	N/A	Report	100 pCi/l
pH (S.U.)	Within 6.0 to 9.0		Within 6.5 to 9.0		Within 6.0 to 9.0		Within 6.0 to 9.0	

Mass Loading Limitations and Reporting Requirements (001)
(Units are Lbs/Day unless otherwise specified)

Effluent Characteristic	Technology/BPJ Basis		Water Quality Stds Basis		Previous Permit Basis		Draft Permit	
	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Daily Avg	Daily Max	Monthly Avg	Daily Max
Flow (MGD)	Report	Report	N/A	N/A	Report	Report	Report	Report
Total Suspended Solids (mg/l)	780	616	N/A	N/A	543	1086	543	616
Ammonia-N	36	144	N/A	N/A	25	100	25	100
Total Fluoride	44	108	N/A	N/A	30	75	30	75

Nitrate-N	108	438	N/A	N/A	75	300	75	300
COD	N/A							
Radium 226	N/A							
Uranium	N/A							
Thorium 230	N/A							

Mass loading limit (in lb/day) = Conc limit (in mg/l) × $Q_{e(30)}$ (in MGD) × 8.34

Where $Q_{e(30)}$ = 1.641 MGD or continued from previous permit.

Monitoring Requirements for Outfall 001

PARAMETERS	MONITORING REQUIREMENTS	
	MEASUREMENT FREQUENCY (1)	SAMPLE TYPE
Flow	Continuous	Record
Ammonia (as N)	1 / Month	24 hour Comp.
Fluoride	1 / Week	24 hour Comp.
Nitrate-Nitrogen (as N)	1 / Week	24 hour Comp.
Total Suspended Solids	1 / Week	24 hour Comp.
Radium 226	1/Month	Grab
COD	1/Month	24 hour Comp.
Uranium, Total	1/Month	24 hour Comp.
Thorium 230	1/Month	24 hour Comp.
pH	Daily	in-situ meter

Whole Effluent Toxicity Reporting and Monitoring Requirements

OUTFALL TX1 (BIOMONITORING)

Outfall TX1 is designated for biomonitoring reporting purposes. It is functionally identical to Outfall 001.

1. Previous Permit

The previous permit required only chronic WET testing and contained no WET limits. The monitoring requirements are described in the following table:

Previous Permit's WET Test Reporting and Monitoring Requirements (Outfall TX1)

Effluent Characteristic			Reporting Requirements		Monitoring Requirements	
Test	Critical Dilution	Parameter	30-day Avg Min	7-day Min	Testing Frequency	Sample Type
<i>Ceriodaphnia dubia</i> , 7-day chronic NOEC static renewal, freshwater	100%	Pass/Fail Survival [TLP3B]	Report	Report	1/semi-annual	24-hr comp
		NOEC _L Survival [TOP3B]	Report	Report		
		NOEC _S Reproduction [TPP3B]	Report	Report		
		% Coeff of Variation [TQP3B]	Report	Report		
<i>Pimephales promelas</i> (Fathead minnow), 7-day chronic NOEC static renewal, freshwater	100%	Pass/Fail Survival [TLP6C]	Report	Report	1/quarter	24-hr comp
		NOEC _L Survival [TOP6C]	Report	Report		
		NOEC _S Growth [TPP6C]	Report	Report		
		% Coeff of Variation [TQP6C]	Report	Report		

2. Draft Permit

During the period beginning the effective date of the permit and lasting through the expiration date, the permittee is authorized to discharge from Outfall TX1 (functionally identical to Outfall 001). The discharge consists of raw water basin overflow and excess water bypass of Tenkiller Reservoir water, process area stormwater, stormwater overflow from the South Yellowcake sump emergency overflow and Calcium Fluoride Clarifier overflow, and the laundry. The monitoring requirements are described in the following table:

**Whole Effluent Toxicity Reporting and Monitoring Requirements
(Outfall TX1)**

Effluent Characteristic			Reporting and Monitoring Requirements ^a		
Test	Critical Dilution ^f	Parameter	48-hour Min	Testing Frequency ^b	Sample Type
Routine Testing <i>Daphnia pulex</i> , 48-hour acute LC ₅₀ static renewal, freshwater	100%	Pass/Fail Survival [TIM3D]	Report	1/quarter ^c	24-hr comp
		LC ₅₀ Effluent Conc [TAM3D]	Report		
		% Mortality at 100% Effluent [TJM3D]	Report		
Routine Testing <i>Pimephales promelas</i> (Fathead minnow), 48-hour acute LC ₅₀ static renewal, freshwater	100%	Pass/Fail Survival [TIM6C]	Report	1/quarter ^c	24-hr comp
		LC ₅₀ Effluent Conc [TAM6C]	Report		
		% Mortality at 100% Effluent [TJM6C]	Report		
Retesting	Retest #1 [22415] ^d		Report	As required ^e	24-hr comp
	Retest #2 [22416] ^d		Report		

- ^a See Part II, Section G, Whole Effluent Toxicity Testing of the permit, for additional monitoring and reporting conditions.
- ^b See provision for monitoring frequency reduction after second year (Part II, Section G, Item 5 of the permit).
- ^c Results of retests conducted pursuant to prior test failure shall not be submitted on DMRs in lieu of routine test results (see Part II, Section G, Item 2.a of the permit).
- ^d Applies to either or both test species, according to results of test failure triggering monthly retests.
- ^e Monthly retesting required only if routine test for reporting period (for either species) fails.
- ^f All acute WET testing shall use the dilution series specified in Part II, Section G, Item 1 (of the permit).

D. pulex whole effluent toxicity reporting and monitoring requirements apply beginning the effective date of this permit.

P. promelas (Fathead minnow) whole effluent toxicity reporting and monitoring requirements apply beginning the effective date of this permit.

WET testing summary reports: Reports of all WET testing initiated, regardless of whether such tests are carried to completion, shall follow the requirements of Part II, Section G, Item 4 (of the permit).

b. Concurrent Testing Provision for Acute WET Testing

Concurrent analysis of total ammonia and pH is required for each individual effluent sample collected for acute WET testing or retesting of the Fathead minnow species. Reporting of concurrent testing results shall be in accordance with the following requirements. Results shall also be submitted in or concurrently with each WET test report.

**Concurrent Effluent Testing for Acute WET Tests – Reporting Requirements
Outfall TX1**

Effluent Characteristic	Concentration			Monitoring Requirements	
	Daily Min	Monthly Avg	Daily Max	Monitoring Frequency ^a	Sample Type
Ammonia, total (mg/l) ^b [STORET 00610]	Report	Report	Report	1/quarter	24 hr comp ^c
pH (std units) ^b [STORET 00400]	Report	N/A	Report	1/quarter	Measured in each composite effluent sample, including static renewals, just prior to first use ^c

^a See provision for WET testing monitoring frequency reduction after second year (Part II, Section G, Item 5, of the permit).

^b Report only those effluent samples collected for WET testing of the Fathead minnow species. Samples collected for WET testing purposes, including static renewals, shall be of sufficient volume to allow for the required concurrent analyses in addition to the WET testing itself. Samples sent directly to WET testing laboratories shall not undergo any preservation other than refrigeration to 4 ° C prior to arrival and processing at the WET testing laboratory.

^c Two sets of samples for concurrent analyses are required for ammonia and pH:

Concurrent ammonia analyses for the table above must be performed on composite samples that are properly preserved and delivered directly to a state certified analytical laboratory. These results may be included in the results for Outfall 001.

A second concurrent analysis is required for the sample that is sent to the WET testing laboratory. Just prior to first use of each composite sample for WET testing purposes, the biomonitoring laboratory shall take an adequately-sized portion of each composite sample, acidify it in accordance with preservation requirements in 40 CFR 136, and have it analyzed for total ammonia, also. The pH measurement required for the above table must be taken just prior to the acidification step. These pH readings should NOT be included in the results for Outfall 001.

Outfall 008: The discharge consists of stormwater runoff from the DUF4 building, Pond 2, solid waste burial areas and facility grounds.

Concentration Limits for Outfall 008

Parameters	Technology-based		Water-Quality-based		Previous Permit		Draft Permit	
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Daily Avg.	Daily Max.	Monthly Avg.	Daily Max.
Flow (MGD)	Report	Report	Report	Report	Report	Report	Report	Report
Total Suspended Solids (mg/l)	Report	45	N/A	N/A	Report	Report	Report	114
Ammonia-N	Report	10.5	N/A	N/A	Report	10.5	Report	10.5
Total Fluoride	Report	7.9	N/A	N/A	Report	7.9	Report	7.9
Nitrate-N	Report	32	N/A	N/A	Report	32	Report	32
COD	Report	Report	N/A	N/A	N/A	N/A	Report	Report
Radium 226	Report	30 pCi/l	N/A	N/A	Report	30 pCi/l	Report	30 pCi/l
Selenium, Total	N/A	N/A	Report	Report	N/A	N/A	Report	Report
Uranium	Report	300 pCi/l	N/A	N/A	Report	Report	Report	300 pCi/l
Thorium 230	Report	100 pCi/l	N/A	N/A	N/A	N/A	Report	100 pCi/l
pH (S.U.)	Within 6.0 to 9.0		Within 6.5 to 9.0		Within 6.0 to 9.0		Within 6.0 to 9.0	

Because the discharge from Outfall 008 consists entirely of stormwater runoff, and is intermittent and variable, mass loading limits were not placed in the permit for this outfall, based on BPJ.

Monitoring Requirements for Outfall 008

PARAMETERS	MONITORING REQUIREMENTS	
	MEASUREMENT FREQUENCY (2)	SAMPLE TYPE
Flow	Continuous	Record
Ammonia (as N)	Daily	24 hour Comp.
Fluoride	Daily	24 hour Comp.
Nitrate-Nitrogen (as N)	Daily	24 hour Comp.
Total Suspended Solids	Daily	24 hour Comp.
Radium 226	Daily	Grab
COD	Daily	24 hour Comp.
Selenium, Total	1 / Month	24 hour Comp.
Uranium, Total	1/Month	24 hour Comp.
Thorium 230	1/Month	24 hour Comp.
pH	Daily	in-situ meter

VIII. SUMMARY OF BACKGROUND MONITORING REQUIREMENTS

A. Outfall 001

PARAMETERS	MONITORING REQUIREMENTS	
	MEASUREMENT FREQUENCY (2)	SAMPLE TYPE
Cadmium, Total	1/Month	Grab
Mercury, Total	1/Month	Grab

B. Outfall 008

PARAMETERS	MONITORING REQUIREMENTS	
	MEASUREMENT FREQUENCY (2)	SAMPLE TYPE
Mercury, Total	1/Month	Grab

Background monitoring of the headwaters of the Lower Illinois River shall be conducted for a period of one year after the effective date of this permit.

IX. 303(d) LIST CONSIDERATIONS

Outfalls 001 and 008 discharge through Outfall 01F to the Lower Illinois River located in Stream Segment No. 121700 (WBID No. 121700010010) of the Middle Arkansas River Basin. The Illinois River is listed as being impaired for organic enrichment and flow alteration. Since this facility does not discharge pollutants that contribute to the listing cause, 303(d) list considerations do not apply.

X. ENDANGERED SPECIES ACT

The DEQ has concluded that issuance of this OPDES permit will have no effect on any endangered or candidate species or the critical habitat since this facility does not use any form of priority organics or organic enrichment. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving stream as aquatic habitat.

XI. ANTIDegradation Provisions

Appendix A of OAC 252:690 describes the processes, procedures and methodologies utilized to ensure that programs within jurisdictional areas of environmental responsibility comply with antidegradation standards and lead to: (A) maintenance of water quality where beneficial uses are supported, (B) removal of threats to water quality where beneficial uses are in danger of not being supported and (C) restoration of water quality where beneficial uses are not being supported.

The antidegradation policy in the OWQS also prohibits an increase in loading that would impair or further impair an existing use. In addition, the policy prohibits degradation of outstanding resource waters and high-quality waters, even if existing and designated uses would still be attained. To insure that these requirements are met, discharge of wastewater to streams identified as Outstanding Resource Waters, Appendix B Waters, High Quality Waters, and Sensitive Public and Private Water Supplies is prohibited under this General Permit. These uses are identified in OAC 785:46-13-4 and 13-5 as requiring Tier 2 and Tier 3 levels of protection respectively by the OWQS. For all other beneficial uses identified in Part III, OAC 785:46-13 states that the beneficial uses will be maintained and protected. This level of protection is identified as Tier I by the OWQS.

Since no changes are being made to this permit that would increase flow of contaminant loading, no specific conditions related to antidegradation are required.

XII. CHANGES FROM PREVIOUS PERMIT

A. OUTFALL 001 AND 008:

1. The reporting frequency for limited parameters has been changed from Daily Average to Monthly Average to be consistent with DEQ policy.
2. Technology based permit limits have of 300 pCi/l daily maximum have been added for Uranium as required by the NRC.
3. Technology based permit limits have of 100 pCi/l daily maximum have been added for Thorium 230 as required by the NRC.
4. A monitoring requirement for Chemical Oxygen Demand (COD) has been added to the permit.
5. A BPJ concentration based limit for Total Suspended Solids has been added at Outfall 008 replacing a report requirement in the previous permit.
6. An effluent monitoring requirement is being added for Total Selenium at Outfall 008.

B. BACKGROUND MONITORING:

Based on the results of the screen model study, background stream monitoring will be required for Total Cadmium and Total Mercury at Outfall 001 and Total Mercury at Outfall 008 for a period of one year from the effective date of this permit.

- C. Section V of the permit has been added for the regulation of four total retention and eleven flow through surface impoundments used to manage wastewater.
- D. Section VI of the permit has been added to define and regulate the land application of wastewater being used to grow Bermuda grass hay.

XIII. ADMINISTRATIVE RECORD

The following sources were used to prepare this permit and constitute a part of the administrative record for this permit:

A. APPLICATIONS

- Permit Application (Forms 1, 2C) submitted July 1, 2003, and supplemental information received through March 2005.

B. CLEAN WATER ACT CITATIONS

- Sections 301, 303(d)(4) and 402(a).

C. 40 CFR CITATIONS

- 40 CFR §122, 124, 136, and 423.

D. FEDERAL REGISTER CITATIONS

- None

E. STATE LAW, STANDARDS, AND RULES AND REGULATIONS

- Oklahoma Pollutant Discharge Elimination System (OPDES) Act, 27A O.S. §2-6-201 *et seq.*
- OAC 252:606, Discharge Standards.
- OAC 252:616, Industrial Wastewater Systems
- OAC 252:690, Water Quality Standards Implementation.
- OAC 785:45, Oklahoma Water Quality Standards (OWQS).
- OAC 785:46, OWQS Implementation.
- Oklahoma Continuing Planning Process (CPP) Document, as revised.

F. MISCELLANEOUS

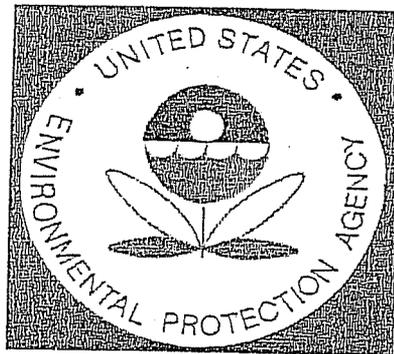
- OPDES Permit No. OK0000191.
- Permit Compliance System (PCS) data retrieval.
- Statistical Summaries of Streamflow Records in Oklahoma and Parts of Arkansas, Kansas, Missouri, and Texas Through 1999, Heimann and Tortorelli, USGS, 2000.

XIV. REVIEW BY OTHER AGENCIES AND FINAL DETERMINATION

A draft permit and draft public notice will be sent to the District Engineer, Corps of Engineers; and to the Regional Director of the U.S. Fish and Wildlife Service prior to the publication of that notice. If comments are received from these agencies or other State or Federal agencies with jurisdiction over fish, wildlife, or public health, the permit may be denied or additional conditions may be included in accordance with regulations promulgated under 40 CFR §124.59.

The public notice describes the procedures for the formulation of final determinations.

NPDES
REPORTING
REQUIREMENTS
HANDBOOK



August 1, 1997

Environmental Protection Agency
Region 6 (6EN-WC)
1445 Ross Avenue
Dallas, TX 75202

This booklet is designed to assist the permittee in complying with the reporting requirements in the NPDES permit. We will take you step-by-step in filling out the Discharge Monitoring Report (DMR) and submitting non-compliance and other reports. We have listed the most commonly asked questions with the answers. You will also find helpful information in the form of commonly used math formulas and acceptable abbreviations for filling out the DMR.

PROGRAM AUTHORITY

Facilities that discharge wastewater to receiving waters of the United States must apply for a National Pollutant Discharge Elimination System (NPDES) permit for that discharge. Program Authority is in accordance with Sections 301, 302, 308, 402 and 503 of the Federal Water Pollution Control Act of 1972, as amended by the Clean Water Act of 1977. The Permittee is responsible for understanding and meeting all permit requirements and submitting complete, accurate and legible self-monitoring data.

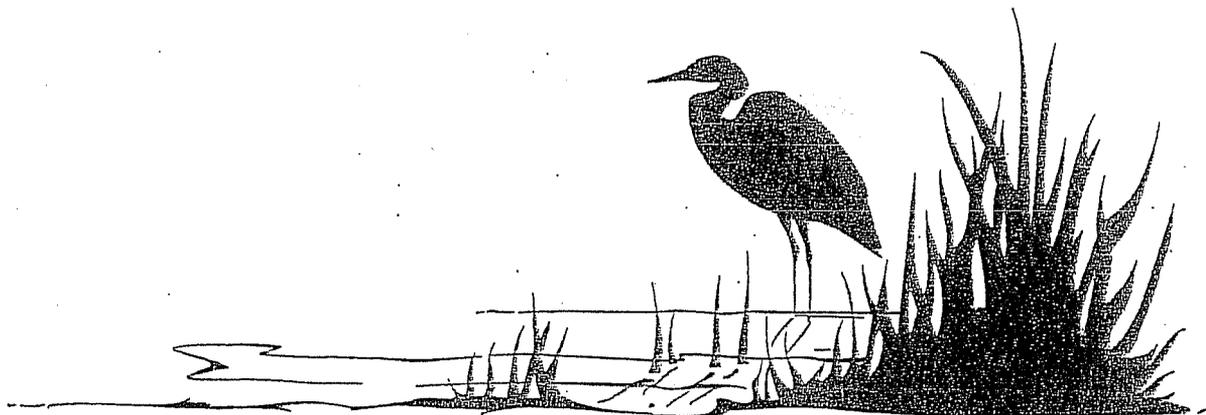


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DISCHARGE MONITORING REPORTS (DMRS)

The required sample collection and analytical results must be reported to the EPA/NPDES State Agency through the submission of DMRS (EPA Form 3320-1). These DMRS are to be submitted on the date specified in the permit. It is extremely important that the data reported on the DMR be accurate and timely. The reported data will be compared with the current limits contained in the permit or any enforcement order to determine facility compliance.

SEE PAGES 4-6 FOR FIGURE 1 INSTRUCTIONS FOR COMPLETION

Figure 1

PERMITTEE NAME/ADDRESS (Include Facility Name, Location if Different)
NAME **1**

ADDRESS **2**

FACILITY LOCATION **3**

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMRS)

4 PERMIT NUMBER **5** DISCHARGE NUMBER

MONITORING PERIOD

FROM: YEAR / MO / DAY TO: YEAR / MO / DAY

6 Check here if No Discharge

NOTE: Read instructions before completing this form

Form Approved
OMB No. 2040-0004
Approval Expires 05-31-90

PARAMETER (22-27)	SAMPLE MEASUREMENT	QUANTITY OR LOADING (14-21)			QUALITY OR CONCENTRATION (14-21)			NO. OF ANALYSES (14-21)	FREQUENCY OF ANALYSES (14-21)	SAMPLE TYPE (14-21)
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM			
7	8	9							8A 8B 8C	
	SAMPLE MEASUREMENT									
	PERMIT REQUIREMENT									
	SAMPLE MEASUREMENT									
	PERMIT REQUIREMENT									
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	SAMPLE MEASUREMENT									
	PERMIT REQUIREMENT									

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER **10**

TYPED OR PRINTED

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT **11**

TELEPHONE **12**

DATE **13**

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here) **14**

DMR Instructions

(from back of DMR)

PAPER WORK REDUCTION ACT NOTICE

Public reporting burden for this collection of information is estimated to vary from a range of 10 hours as an average per response for some minor facilities, to 110 hours as an average per response for some major facilities, with a weighted average for major and minor facilities of 18 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

GENERAL INSTRUCTIONS

1. If form has been partially completed by preprinting, disregard instructions directed at entry of that information already pre-printed.
2. Enter "Permittee Name/Mailing Address (and facility name/ location, if different)," "Permit Number," and "Discharge" where indicated. (A separate form is required for each discharge.)
3. Enter dates beginning and ending "Monitoring Period" covered form where indicated.
4. Enter each "Parameter" as specified in monitoring requirements of permit.
5. Enter "Sample Measurement" data for each parameter under "Quantity" and "Quality" in units specified in permit. "Average" is normally arithmetic average (geometric average for bacterial parameters) of all sample measurements for each parameter obtained during "Monitoring Period"; "Maximum" and "Minimum" are normally extreme high and low measurements obtained during "Monitoring Period". (Note to municipals and secondary treatment requirement: Enter 30-day average of sample measurements under "Average", and enter maximum 7-day average of sample measurements obtained during monitoring period under "Maximum.")
6. Enter "Permit Requirement" for each parameter under "Quantity" and "Quality" as specified in permit.
7. Under "No Ex" enter number of sample measurements during monitoring period that exceeded maximum (and/or minimum or 7-day average as appropriate) permit requirement for each parameter. If none, enter "0".

8. Enter "Frequency of Analysis" both as "Sample Measurement" (actual frequency of sampling and analysis used during monitoring period) and as "Permit Requirement" specified in permit. (e.g. Enter "Cont," for continuous monitoring, "1/7" for one day per week, "1/30" for one day per month, "1/90" for one day per quarter, etc.)
9. Enter "Sample Type" both as "Sample Measurement" (actual sample type used during monitoring period) and as "Permit Requirement", (e.g. Enter "Grab" for individual sample, "24HC" for 24-hour composite, "CONT" for continuous monitoring, etc.)
10. Where violations of permit requirements are reported, attach a brief explanation to describe cause and corrective actions taken, and reference each violation by date.
11. If "No Discharge" occurs during monitoring period, check the box for "No Discharge".
12. Enter "Name/Title of Principal Executive Officer" with "Signature of Principal Executive Officer or Authorized Agent", "Telephone Number", and "Date" at bottom of form.
13. Mail signed Report to Office(s) by date(s) specified in permit. Retain copy for your records.
14. More detailed instructions for use of this Discharge Monitoring Report (DMR) form may be obtained from Office(s) specified in permit.
15. Facilities using the digital form of the DMR must first obtain approval from the NPDES authority in their state. The parameters and data on the form must be mono-spaced (e.g. Courier) and have a size of 10 pitch (12 points). Approval for EPA Region 6 can be obtained by contacting Cathy Bius at (214)665-6456. Permittees holding a storm water general permit in New Mexico, Texas, or Oklahoma do not need approval if they use the correct type as specified above. **THE FORM MAY NOT BE ALTERED IN ANY MANNER.**

LEGAL NOTICE

This report is required by law (33 U.S.C. 1318; 40 C.F.R. 125.27). Failure to report or failure to report truthfully can result in civil penalties not to exceed \$11,000 per day of violation; or in criminal penalties not to exceed \$27,500 per day of violation, or by imprisonment for not more than one year, or by both.

DISCHARGE MONITORING REPORTS (DMRS)

Instructions for Completion

See Figure 1
DISCHARGE MONITORING REPORT

1. Permittee Name/Address - Name and mailing address of permittee.
2. Facility/Location - Enter if different from mailing address.
3. Permit Number - State abbreviation and permit number as it appears on the NPDES permit, which consists of two alpha and seven numeric characters. In the case of General Permits, the first three characters will be alpha with the last six numeric.
4. Discharge Number (Outfall Number) - Consists of a combination of four alpha and numeric characters. (EX: 001A, 002Q, 003S, 004Y).

Some exceptions include, but are not limited to, biomonitoring/toxicity. The first two characters are TX, indicating toxicity testing. The last two characters are usually an assigned code used for Agency tracking purposes (EX: TX1A, TX1S, TX1Y, etc.).

5. Monitoring Period - From first day of monitoring period through last day of monitoring period. The dates should be displayed as YR MO DAY. Applicable monitoring periods will be specified in each permit. Some examples include but are not limited to:

Monthly	-	96	01	01	to	96	01	31
Quarterly	-	96	01	01	to	96	03	31
Semi-annual	-	96	01	01	to	96	06	30
Annual	-	96	01	01	to	96	12	31

6. No Discharge - If facility has no flow/no discharge for a specific outfall and/or monitoring period, "NO DISCHARGE" must be indicated for that outfall and monitoring period.
7. Parameters - Specified in the permit as effluent characteristics for each discharge number (outfall), one parameter per box. Each box must display the parameter name and corresponding storet code number. (EX: BOD (00310), pH (00400), TSS (00530), flow (50050)). The parameters should display on the DMR form in numeric order by storet code number.

8. Sample Measurement - Sample measurement data for each parameter under "Quantity or Loading" or "Quality or Concentration" in accordance with permit limitations. Indicate units (lbs/day, mg/l, su, etc) as specified in the permit. It may be necessary to do calculations to convert data to the units required in the permit. "Average" is normally arithmetic average (geometric average for bacterial parameters) of all sample measurements for each parameter obtained during the monitoring period. "Maximum" and "Minimum" are normally the highest and lowest measurements obtained during the monitoring period. (See TABLE 1 - MATH FORMULAS.)
- A. No. EX (Number of Exceedances) - Total of sample measurements that exceed the daily maximum, daily minimum, 7-day (weekly) average permit limit. DO NOT include monthly average or daily average violations in this field. If none, enter "0". Permittees with continuous pH, or temperature monitoring requirements should consult the permit for what constitutes an exceedance and report accordingly.
- B. Frequency of Analysis - Actual frequency of analysis used during the monitoring period; the minimum requirement is as specified in the permit. Enter "CONT" for continuous monitoring, "01/07" for one day per week, "01/30" for one day per month, "01/90" for one day per quarter, etc. Some examples are included in TABLE 2.
- C. Sample Type - Actual sample type used during monitoring period. Enter "GRAB" for individual sample, "24HC" for 24-hour composite, "CONT" for continuous monitoring. Some examples are included in TABLE 3.
9. Permit Requirement - Effluent limitations for each parameter as specified in the permit are displayed on the DMR under "Quantity or Loading" and/or "Quality or Concentration". Monitoring requirements for frequency of analysis and sample type as specified in the permit are also displayed. The DMR must reflect the most current monitoring and reporting requirements.
10. Name/Title Principal Executive Officer or Authorized Agent - See the permit for qualifications of Principal Executive Officer and signature authorization.
11. Signature - Original legible signature of authorized Principal Executive Officer or Authorized Agent. Every page of the DMR must have an original signature.

In the event a revised or corrected DMR is necessary, an original authorized signature and date of signature is required on each page. The word REVISED should be clearly visible on each page of the form.

12. Telephone - Telephone number of Principal Executive Officer.
13. Date - Actual date of signature certifying authenticating data submitted on DMR.
14. Comments - May contain any clarifying information by either Agency or Permittee.

NOTE: The results of any additional monitoring of parameters at the location(s) designated in the permit, using approved analytical methods, must be included on the DMR (see Part III.D.5 of permit).

MOST RECENT VERSION OF DISCHARGE MONITORING REPORT CAN BE FOUND ON THE INTERNET AT:

<http://www.epa.gov/earthlr6/6en/w/forms.htm>



PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)
(17-19)

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

PERMIT NUMBER

DISCHARGE NUMBER

MONITORING PERIOD

YEAR	MO	DAY	TO	YEAR	MO	DAY

FACILITY LOCATION

Check here if No Discharge

NOTE: Read Instructions before completing this form

PARAMETER (32-37)	(3 Card Only) (46-53)			(4 Card Only) (38-45)			(54-61)			NO EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMP TYPI (69-7)	
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<p>NAME/TITLE PRINCIPAL EXECUTIVE OFFICER</p> <p>DATE</p>													
<p>COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)</p> <p>TYPED OR PRINTED</p>													
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT										AREA CODE	NUMBER	YEAR	MO

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER THE DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE ACCURACY AND COMPLETENESS. I HAVE PERSONALLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED BASED ON THE INFORMATION PROVIDED TO ME BY THE PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR THE INFORMATION. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. (Penalties under these statutes may include fines up to \$10,000 and or maximum imprisonment of between 6 months and 5 years.)

PART III
STANDARD CONDITIONS FOR OPDES INDUSTRIAL DISCHARGE PERMITS

SECTION A. DEFINITIONS

In addition to the definitions included in the Oklahoma Pollutant Discharge Elimination System Act (OPDES Act), Title 27 O.S. Supp. 2000, Section 2-6-201, et seq., and the rules of the State of Oklahoma Department of Environmental Quality (DEQ) adopted thereunder (See OAC 252:605); the following definitions shall apply to this permit:

1. "Act" means the OPDES Act, as amended.
2. "Applicable effluent standards and limitations" means all state and federal effluent standards and limitations to which a discharge is subject under the Act, including, but not limited to, effluent limitations, standards of performance, toxic effluent standards and prohibitions, and pretreatment standards.
3. "Applicable water quality standards" means all water quality standards to which a discharge is subject under the Act.
4. "Average limitations" shall be calculated as follows:
 - a. "7-day average" or "weekly average," other than for coliform bacteria, is the arithmetic mean of the daily values for all effluent samples collected during a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week. The "7-day average" or "weekly average" for coliform bacteria is the geometric mean of the values for all effluent samples collected during a calendar week.
 - b. "30-day average" or "monthly average," other than for coliform bacteria, is the arithmetic mean of the daily values for all effluent samples collected during a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. The "30-day average" or "monthly average" for coliform bacteria is the geometric mean of the values for all effluent samples collected during a calendar month.
5. "Average loading" shall be determined by the summation of all the calculated loadings for the calendar month divided by the number of samples analyzed during the calendar month.
6. "Bypass" means the intentional or unintentional diversion of waste streams from any portion of a treatment, disposal or collection facility.
7. "Daily average discharge" shall be determined by calculating the total discharge by weight during a calendar month divided by the number of days in the month that the production or commercial facility was operating. Where less than daily sampling is required by the permit, the "daily average discharge" shall be determined by the summation of all the measured "daily discharge(s)" by weight divided by the number of days during the calendar month when the measurements were made.
8. "Daily average discharge limitation" means the highest allowable average of "daily discharge(s)" measured during a calendar month divided by the number of "daily discharge(s)" measured during that month. When the permit establishes daily average concentration effluent limitations or conditions, the daily average concentration means the arithmetic average (weighted by flow) of all "daily discharge(s)" of concentration determined during the calendar month where C = daily concentration, F = daily flow and n = number of daily samples; daily average discharge =
$$\frac{C_1F_1 + C_2F_2 + \dots + C_nF_n}{F_1 + F_2 + \dots + F_n}$$
9. "Daily discharge" means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in terms of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the sampling day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the sampling day. "Daily discharge" determination of concentrations made using a composite sample shall be the concentration of the composite sample. When grab samples are used, the "daily discharge" determination of concentration shall be the arithmetic average (weighted by flow value) of all samples collected during that sampling day.
10. "Daily maximum discharge limitation" means the highest allowable "daily discharge" during the calendar month.
11. "Department of Environmental Quality" (DEQ) means the State of Oklahoma Department of Environmental Quality.
12. "Director" or "Executive Director" means the Executive Director of the Department of Environmental Quality.
13. "Discharge Monitoring Report" or "DMR" means the EPA uniform national form, including any subsequent additions, revisions or modifications for the reporting of self-monitoring results by permittees.
14. "Disposal system" means a system for disposing of wastewater, including treatment systems.
15. "Environmental Protection Agency" (EPA) means the U.S. Environmental Protection Agency.
16. "Industrial user" means a nondomestic discharger, as identified in 40 CFR 403, introducing pollutants to a publicly owned treatment works.
17. "Loading" (in lbs/day) shall be calculated by multiplying each sample concentration (in mg/l) by the simultaneous effluent flow rate (in MGD) with a conversion factor of 8.34.
18. "Maximum loading" means the highest single loading for all samples analyzed during the month.
19. "Oklahoma Pollutant Discharge Elimination System" (OPDES) means the state program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under the Act.
20. "OPDES Act" means the Oklahoma Pollutant Discharge Elimination System Act, 27 O.S. Supp. 2000 Section 2-6-201, et seq.
21. "Sample" has one of the following meanings, as appropriate:
 - a. For coliform bacteria, a sample consists of one effluent grab portion collected during a 24-hour period at peak loads.
 - b. "Grab sample" means an individual sample collected in less than 15 minutes.
 - c. "24-hour composite sample" consists of a minimum of 12 effluent portions collected at equal time intervals over the 24-hour period and combined proportional to flow or a sample collected at frequent intervals proportional to flow over the 24-hour period.
 - d. "12-hour composite sample" consists of a minimum of six effluent portions collected at equal time intervals over the 24-hour period and composited according to flow. The daily sampling intervals shall include the highest flow periods.
 - e. "6-hour composite sample" consists of six effluent portions collected no closer together than one hour (with the first portion collected no earlier than 10:00 a.m.) and composited according to flow.
 - f. "3-hour composite sample" consists of three effluent portions collected no closer together than one hour (with the first portion collected no earlier than 10:00 a.m.) and composited according to flow.
22. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
23. "Sewage sludge" means the solids, residues and precipitates separated from or created in sewage by the unit processes of a publicly owned treatment works. Sewage as used in this definition means any wastes, including wastes from humans, households, commercial establishments, industries, and storm water runoff, that are discharged to or otherwise enter a publicly owned treatment works.
24. "Surface impoundment" means an excavated soil or lined basin either below or above ground level which is designed, maintained and/or operated to store, recycle, treat and/or dispose of industrial wastewater or storm water, and shall include but is not limited to natural and man-made topographic depressions, excavations, basins, diked areas, lagoons, pits and ponds.
25. "System" means pipelines or conduits, pumping stations and force mains, and all other construction, devices, appurtenances and facilities used for collecting, conducting, or disposing of water or wastewater, including disposal systems and treatment systems or treatment works.

26. "Treatment works" means any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage and industrial wastes of a liquid nature to implement the Act, or necessary to recycle or reuse water at the most economical cost over the estimated life of the works, including intercepting sewers, sewage collection systems, pumping, power and other equipment, and their appurtenances, extension, improvement, remodeling, additions, and alterations thereof.
27. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
28. "Lbs/day" means pounds per day.
29. "MGD" means million gallons per day.
30. "mg/l" means milligrams per liter or parts per million (ppm).
31. "µg/l" means micrograms per liter or parts per billion (ppb).

SECTION B. GENERAL CONDITIONS

1. Introduction
In accordance with the provisions of 40 CFR 122.41 et seq., (adopted by reference in OAC 252:605-1-5) this permit incorporates by reference all conditions and requirements applicable to OPDES Permits set forth in the Act, as amended, as well as all applicable regulations.
2. Duty to Comply
- All authorized discharges shall comply with the rules of the DEQ, which are hereby incorporated by reference; the Federal Clean Water Act and OPDES Regulations, and all provisions, conditions and requirements included in this permit.
 - The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the applicable federal and state laws, including the Federal Clean Water Act, the OPDES Act and the Oklahoma Environmental Quality Code, and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.
3. Toxic Pollutants
- Notwithstanding Section III.B.5 of this permit, if any toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under the Act for a toxic pollutant which is present in the discharge and that standard or prohibition is more stringent than any limitation on the pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition.
 - The permittee shall comply with effluent standards or prohibitions established under of the Act for toxic pollutants within the time provided in the regulations that established those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.
4. 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 application shall be submitted at least 180 days before the expiration date of this permit unless otherwise authorized by the Executive Director. The Executive Director may grant permission to submit an application less than 180 days in advance but no later than the permit expiration date. Continuation of expiring permits shall be governed by regulations promulgated at 40 CFR 122.6 and any subsequent amendments.
5. Permit Actions
This permit may be modified, revoked and reissued, or terminated for cause in accordance with 40 CFR 122.62-64 and Title 27 O.S. Supp. 2000, Section 2-6-201 et seq., and the rules of the State of Oklahoma Department of Environmental Quality (DEQ) adopted thereunder (See OAC 252:605). The filing of a request for a permit modification, revocation and

reissuance, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

6. Property Rights
This permit does not convey any property rights of any sort, or any exclusive privilege.
7. Duty to Provide Information
The permittee shall furnish to the Executive Director within a reasonable time, any information which the Executive 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 Executive Director, upon request, copies of records required to be kept by this permit.
8. Criminal and Civil Liability
Except as provided in permit conditions on "bypassing" and "upsets," 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 the permit, the Act, or applicable regulations, which avoids or effectively defeats the regulatory purpose of the permit may subject the permittee to criminal enforcement pursuant to 18 U.S.C. Section 1001.
9. 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 Act.
10. 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 under authority preserved by Section 510 of the Act.
11. Severability
The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit, shall not be affected thereby.

SECTION C. PROPER OPERATION AND MAINTENANCE

1. Need to Halt or Reduce Not a Defense
It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
2. Duty to mitigate
The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
3. Proper Operation and Maintenance
- The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee as efficiently as possible and in a manner which will minimize upsets and discharges of excessive pollutants and will 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 this permit.

- b. The permittee shall provide an adequate operating staff which is duly qualified to carry out operation, maintenance and testing functions required to insure compliance with the conditions of this permit.
4. Bypass of Treatment Facilities
- a. Bypass Not Exceeding Limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the reporting requirements of Parts III.C.4.b and 4.c.
- b. Notice
- (1) Anticipated Bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
- (2) Unanticipated Bypass. The permittee shall, within 24 hours, submit notice of an unanticipated bypass as required in Part III.E.7.
- c. Prohibition of Bypass
- (1) Bypass is prohibited, and the Executive Director may take enforcement action against a permittee for bypass, unless:
- (a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and,
- (c) The permittee submitted notices required by Part III.C.4.b.
- (2) The Executive Director may allow an anticipated bypass after considering its adverse effects, if the Executive Director determines that it will meet the three conditions listed at Part III.C.4.c.(1).
5. Upset Conditions
- a. Effect of an Upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Part III.B.3.b are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- b. Conditions Necessary for Demonstration of Upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate through properly signed, contemporaneous operating logs, or other relevant evidence that:
- (1) An upset occurred and that the permittee can identify the specific cause(s) of the upset;
- (2) The permitted facility was at the time being properly operated;
- (3) The permittee submitted notice of the upset as required in Part III.E.7. of this permit; and
- (4) The permittee complied with any remedial measures under Part III.C.2.
- c. Burden of Proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.
6. Removed Substances
- a. Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a state-approved industrial waste disposal site or to a company for recycling. Disposal shall be in a manner such as to prevent any pollutant from such materials from entering waters of the state and in compliance with applicable rules of the DEQ. If any such industrial wastes are removed from the facility, the permittee shall keep accurate records which include the following information:
- (1) Name and address of company hauling waste.
- (2) The type and amount of waste hauled.
- (3) The final disposal site of waste hauled.
- (4) Copy of permit or authorization of sludge management plan issued by DEQ.
- b. Upon request, the records required in Part III.C.6.a shall be made available to DEQ staff for review.
7. Percent Removal
- For publicly owned treatment works, the 30-day average or monthly average percent removal for Biochemical Oxygen Demand and Total Suspended Solids shall not be less than 85 percent unless otherwise authorized by the permitting authority in accordance with 40 CFR 133.103.

SECTION D. MONITORING AND RECORDS

1. Inspection and Entry

The permittee shall allow the Executive Director, and/or his/her authorized representative(s), upon presentation of credentials and such other documents as may be required by the 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, the Act, or DEQ rules;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), maintenance, practices or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location.

2. Representative Sampling

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

3. Retention of Records

Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original recordings for continuous monitoring instrumentation, 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 three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Executive Director at any time.

4. Record Contents

Records of monitoring information shall include:

- a. The date, exact place, and time of sampling or measurements;
- b. The individual(s) who performed the sampling or measurements;
- c. The date(s) and time(s) analyses were performed;
- d. The individual(s) who performed the analyses;
- e. The analytical techniques or methods used; and
- f. The results of such analyses.

5. Monitoring Procedures

- a. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.
- b. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instruments at intervals frequent enough to insure accuracy of measurements and shall maintain appropriate accuracy of measurements and shall maintain an appropriate records of such activities.
- c. An adequate analytical quality control program, including the analyses of sufficient standards, spikes and duplicate samples to insure the accuracy of all required analytical results shall be maintained by the permittee or designated commercial laboratory.

6. Flow Measurements
Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than 10% from true discharge rates throughout the range of expected discharge volumes.

SECTION E. REPORTING REQUIREMENTS

1. Planned Changes
- a. Industrial Permits
The permittee shall give notice to the Executive Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
- (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b);
 - (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements listed at Part III.E.10.a.; or
 - (3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. Municipal Permits
Any change in the facility discharge (including the introduction of any new source or significant discharge or significant changes in the quantity or quality of existing discharges of pollutants) must be reported to the permitting authority. In no case are any new connections, increased flows, or significant changes in influent quality permitted that will cause violation of the effluent limitations specified herein.
2. Anticipated Noncompliance
The permittee shall give advance notice of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
3. Transfers
This permit is not transferable to any person except after notice to the Executive Director. The Executive Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as necessary under the Act.
4. Discharge Monitoring Reports and Other Reports
Monitoring results must be reported on a Discharge Monitoring Report (DMR) Form EPA No. 3320-1 or an approved equivalent form, or forms provided or specified by the Executive Director for reporting results of monitoring of sludge use or disposal practices. Reporting periods shall end on the last day of the month. Monitoring reports shall be prepared monthly and the original and one copy shall be submitted to the Oklahoma Department of Environmental Quality at the address shown below no later than the fifteenth (15th) day of the following month. A copy shall also be submitted simultaneously to the appropriate County DEQ office. All operating records and reports shall comply with the OPDES Act, the Oklahoma Environmental Quality Code and the requirements of 40 CFR 122.41(j).
- Water Quality Division
Oklahoma Department of Environmental Quality
P.O. Box 1677
Oklahoma City, OK 73101-1677
5. Additional Monitoring by the Permittee
If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Discharge Monitoring Report (DMR) or sludge reporting form specified by the Executive Director. Such increased monitoring frequency shall also be indicated on the DMR.
6. Averaging of Measurements
Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Executive Director in the permit.
7. Twenty-four Hour Reporting
- a. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. DEQ shall be notified by calling 1-800-256-2365 for around-the-clock reporting. A written submission shall be provided within five days of the time the permittee becomes aware of the circumstances. The report shall contain the following information:
- (1) A description of the noncompliance and its cause;
 - (2) The period of noncompliance including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and,
 - (3) Steps taken to reduce, eliminate, and prevent reoccurrence of the noncomplying discharge.
- b. The following shall be included as information which must be reported within 24 hours:
- (1) Any unanticipated bypass which exceeds any effluent limitation in the permit;
 - (2) Any upset which exceeds any effluent limitation in the permit; and,
 - (3) Any Violation of maximum daily discharge limitation for any of the pollutants listed by the Executive Director in Part II (industrial permits only) of the permit to be reported within 24 hours.
- c. The Executive Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.
8. Other Noncompliance
The permittee shall report all instances of noncompliance not reported under Part III.E.4 and E.7 and Part I.B at the time monitoring reports are submitted. The reports shall contain the information listed at Part III.E.7.
9. Other Information
Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Executive Director, it shall promptly submit such facts or information.
10. Changes in Discharges of Toxic Substances
All existing manufacturing, commercial, mining and silvicultural permittees shall notify the Executive Director as soon as they know or have reason to believe:
- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant listed at 40 CFR Part 122, Appendix D, Tables II and III (excluding Total Phenols) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
- (1) One hundred micrograms per liter (100 µg/l);
 - (2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (1 mg/l) for antimony;
 - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application; or
 - (4) The level established by the Executive Director.
- b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic

SECTION F. PENALTIES FOR VIOLATIONS OF PERMIT CONDITIONS

- pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
- (1) Five hundred micrograms per liter (500 µg/l);
 - (2) One milligram per liter (1 mg/l) for antimony;
 - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application; or
 - (4) The level established by the Executive Director.
11. Signatory Requirements
All applications, reports, or information submitted to the Executive Director shall be signed and certified.
- a. All permit applications shall be signed as follows:
 - (1) 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 operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
 - (2) For a partnership or sole proprietorship - by a general partner or the proprietor, respectively.
 - (3) 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 Executive 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:
 - (1) The authorization is made in writing by a person described above;
 - (2) The authorization specifies 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, or an individual or position having overall responsibility for environmental matters for the company. A duly authorized representative may thus be either a named individual or an individual occupying a named position; and,
 - (3) The written authorization is submitted to the Executive Director.
 - c. Certification. 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."
12. Availability of Reports
Except for applications, effluent data, permits, and other data specified in 40 CFR 122.7, any information submitted pursuant to this permit may be claimed as confidential by the submitter. If no claim is made at the time of submission, information may be made available to the public without further notice.
1. Criminal Penalties
 - a. Negligent Violations
The Act provides that any person who negligently violates permit conditions implementing the Act is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one (1) year, or both.
 - b. Knowing Violations
The Act provides that any person who knowingly violates permit conditions implementing the Act is subject to a fine of not less than \$5,000 nor more than \$50,000 per day of violation, or by imprisonment for not more than three (3) years, or both.
 - c. Knowing Endangerment
The Act provides that any person who knowingly violates permit conditions implementing the Act and who knows at that time that he is placing another person in imminent danger of death or serious bodily injury is subject to a fine of not more than \$250,000, or by imprisonment for not more than fifteen (15) years, or both.
 - d. False Statements
The Act provides that any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document submitted or required to be maintained under this permit, including monitoring reports and reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both.
 - e. Tampering
The Act provides that any person who knowingly falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two (2) years, or by both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment shall be by a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four (4) years, or by both.
 2. Civil Penalties
The Act provides that any person who violates a permit condition implementing the Act is subject to a civil penalty not to exceed \$27,500 per day for each violation.
 3. Administrative Penalties
The Act provides that any person who violates a permit condition implementing the Act is subject to an administrative penalty, as follows:
 - a. Class I Penalty
Not to exceed \$11,000 per violation nor shall the maximum amount exceed \$27,500.
 - b. Class II Penalty
Not to exceed \$11,000 per day for each day during which the violation continues nor shall the maximum amount exceed \$137,500.
 4. State Penalties
 - a. Criminal
Violations of the terms of this permit constitute a misdemeanor under Oklahoma Statutes with various provisions for fines and jail terms.
 - b. Civil and Administrative
For any violation of the limitations and/or conditions of this permit, the State may assess a fine of up to \$10,000 per day per violation.

PART IV
STANDARD CONDITIONS (NON-DISCHARGE REQUIREMENTS ONLY)

SECTION A. GENERAL CONDITIONS

1. Policy
The provisions of these general conditions shall be given an interpretation which is consistent with the policy of this state regarding water quality, as set forth in 27A O.S. Supp. 2000 §2-6-102.
2. Statutory Provisions
The provisions of these general conditions are authorized pursuant to 27A O.S. 2000 Supp. §2-6-101 through 2-6-106 and 2-6-501 through 2-6-501.2.
3. Rule Citations
The permittee must comply with standard conditions contained herein in addition to all applicable rules contained in OAC 252 Chapters 605, 610, 615, and 647 or their replacements.
4. Permit Modification
 - a. The following shall be subject to Tier I requirements found in OAC 252:002-15:
 - (1) change of name, address,
 - (2) typographical errors in nonsubstantive provisions of the permit, or
 - (3) transfer of ownership.
 - b. All other changes in the treatment system, operations, wastes, activities or other changes shall be subject to Tier II requirements as provided in OAC 252:002-15.
5. Penalties
 - a. Criminal
Violations of the terms of this permit constitute a misdemeanor under Oklahoma Statutes with various provisions for fines and jail terms.
 - b. Civil and Administrative
For any violation of the limitations and/or conditions of this permit, the State may assess a fine of up to \$10,000 per day per violation.

SECTION B. OPERATION AND MAINTENANCE

1. Terms and Conditions of Permits
Specific terms and conditions may be included as necessary to protect water quality and to prevent, abate or control pollution of the environment. (See Part II of this permit for the specific requirements)
2. General Pollution Abatement
Storage systems shall be designed and located to prevent water pollution.
3. Prohibitions and Limitations
The Department may deny permit applications for industrial wastewater systems located within any waters of the state. The Department may impose siting requirements to protect waters of the state.
4. Reporting, Records, Compliance and Sampling
 - a. The Department may impose requirements for monitoring, reporting, records, and sampling on permitted facilities. Additional requirements may be included as conditions of pre-closure sampling plan approval, closure plan approval, and remediation plan approval documents. Additional or specific requirements are listed in Part II of this permit.
 - b. Monitoring reports, plans and other reports provided to the Department shall contain data analysis and sample results prepared by a laboratory certified by the Department under OAC 252:300.
 - c. Monitoring and sampling information shall be supplied to the Department on self monitoring report (SMR) forms, other appropriate forms approved by the Department and developed for

the specific purpose or in such other form and format as may be specified by the Department.

SECTION C. SURFACE IMPOUNDMENTS

1. Specific Requirements for Surface Impoundments
The requirements of OAC 252:616, Subchapter 7 apply to the design, construction, operation, and maintenance of total retention, flow-through or other surface impoundments. If the Department determines a surface impoundment is or is likely to become a source of pollution to waters of the state or the environment, the Department may order reconstruction or modification of the impoundment, or pre-treatment of the wastes to be impounded.
2. Additional Requirements
The Department may impose specific requirements for impoundment construction, maintenance, and operation on a case-by-case basis. These additional requirements are listed in Part II of this permit.
3. Impervious Cap or Cover
When impervious caps or covers are proposed to be constructed as a method of closure in connection with a closure plan, the requirements of OAC 252:616-13 shall be met.
4. Impoundment Modifications, Additions, Extensions, and Operational Changes
 - a. All proposed modifications to an impoundment or operational changes must meet the requirements of OAC 252:616. All proposals to take such actions shall be submitted to the Department no less than sixty (60) days prior to the proposed date to commence such activity. Modification of the permit may be required to reflect such proposed changes. Major modifications are subject to the requirements found at OAC 252:002-15.
 - b. If there exist emergency conditions requiring immediate repairs to an impoundment to prevent environmental pollution or adverse effects on public health, welfare or safety, the permittee shall notify the Department by telephone 1-800-256-2365 or 271-2973 (Oklahoma City Metropolitan Area) within 24 hours of becoming aware of such emergency conditions. The permittee shall provide written notice to the Department within seven (7) days of the telephone notification. The written notice shall describe the emergency, all work completed and all actions proposed to be taken to correct the situation.

SECTION D. SEPTIC TANK SYSTEMS

1. Specific Requirements for Septic and Other Tank Systems
The requirements of OAC 252:616, Subchapter 9 apply to the design, construction, operation, and maintenance of total retention, flow-through or other tank systems. The provisions of OAC 252:616, Subchapter 3, requiring a permit and OAC 252:616, Subchapter 9 apply to all septic tank systems containing nonhazardous industrial wastes or wastewater regulated by the Department.
2. Additional Requirements
The Department may impose specific requirements for septic or other tank system construction, maintenance, and operation on a case-by-case basis. These additional requirements are listed in Part II of this permit.
3. Septic and Other Tank System Modifications, Additions, Extensions, and Operational Changes
All modifications to a septic or other tank system or operational changes must meet the requirements of OAC 252:616. All proposals to take such actions shall be submitted to the Department no less than sixty (60) days prior to the proposed date to commence such activity. Modification of the permit may be required to reflect such proposed

changes. Major modifications are subject to the requirements found at OAC 252:002-15.

4. Underground Storage Tanks

For complaints and incidents referred to the Department and for cases of pollution which may involve Underground Storage Tanks which are under the jurisdiction of the Department, the appropriate provisions of the OCC General Rules and Regulations Governing Underground Storage Tanks In Oklahoma (OCC Rules), adopted in December 1988, and effective April 13, 1989, including amendments effective July 12, 1990, amendments effective June 13, 1991, and amendments effective January 6, 1992, and provisions of OAC 252:610 or other applicable rules of the Department will be utilized as appropriate. Said OCC Rules are hereby incorporated by reference.

SECTION E. CLOSURE

1. Termination of Activities Subject to OAC 252:616 and Closure

- a. Notice. The owner or operator of a surface impoundment, septic tank, or other tank system shall provide the Department with a minimum of thirty (30) days written notice prior to permanent cessation or abandonment of the surface impoundment, septic tank, or other tank system.
- b. Contents of Notice. Each notice shall contain, at a minimum, the following:
 - (1) Name, address and title of the person(s) who will remain in charge of or otherwise have continuing management responsibility of the facility or site and who will retain an ownership interest in personal or real property affected by the permitted operation;
 - (2) A detailed schedule of proposed closure activities; and
 - (3) Forwarding addresses and names of each present owner or operator under the current permit.
- c. Requirements are Mandatory. It shall be a violation of this section to permanently cease the use of or abandon any facility or site without complying with notice and closure requirements specified by the Department.
- d. Correction of Environmental Damage. The Department may require such continuing monitoring, sampling, reporting, or remedial measures as deemed appropriate and necessary to correct environmental damage resulting from activities subject to the requirements of OAC 252:616.