AUTHORIZATION TO DISCHARGE UNDER THE OKLAHOMA POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT NUMBER: OK0001309
ID NUMBER: I-72001630

In compliance with the Oklahoma Pollutant Discharge Elimination System (OPDES) Act, 27A O.S. § 2-6-201 *et seq.*, Oklahoma Uniform Environmental Permitting Act, 27A O.S. § 2-14-101 *et seq.*, and the rules of the Oklahoma Department of Environmental Quality promulgated thereunder,

HF Sinclair Tulsa Refining, LLC
1700 South Union Ave.
Tulsa, OK 74107

is authorized to discharge wastewater from their East facility, located at:

SE¼, NW¼, NW¼, Section 23, Township 19N, Range 12EIM
Tulsa County, Oklahoma
or at 902 W 25th St., Tulsa, OK 74107

to receiving waters: Arkansas River in Stream Segment 120420 (Water body ID# OK120420010010_10)

from:

Outfall 002
Latitude 36.119852° N, Longitude 95.995236° W (GPS: NAD83)
SE¼, SE¼, SE¼, Section 14, Township 19N, Range 12EIM,
Tulsa County, Oklahoma

Outfall 003
Latitude 36.119967° N, Longitude 95.995066° W (GPS: NAD83)
SE¼, SE¼, SE¼, Section 14, Township 19N, Range 12EIM,
Tulsa County, Oklahoma

Outfall 004
Latitude 36.119988° N, Longitude 95.995069° W (GPS: NAD83)
SE¼, SE¼, SE¼, Section 14, Township 19N, Range 12EIM,
Tulsa County, Oklahoma

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, and III, hereof.

The above-referenced facility is authorized to retain wastewater in six (6) flow-through surface impoundments (F01 – F06) as described in the Appendix. Surface impoundments shall be maintained in accordance with Parts I, II, and IV hereof.

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

This permit replaces and supersedes the previous permit issued on February 19, 2020.

The issuance date of this permit is Month Date Year.

This permit shall become effective Month Date Year.

This permit and authorization to discharge shall expire at midnight Month Date Year.

For the Oklahoma Department of Environmental Quality:

Jason Ma, P.E., Manager
Industrial Permits Section
Water Quality Division

George Russell IV, Director
Water Quality Division

PART I
EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

SECTION A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Effluent Limitations and Monitoring Requirements for Outfall 002

During the period beginning on the effective date of the permit and lasting through the expiration date, the permittee is authorized to discharge from Outfall 002.

The discharge from Outfall 002 consists of treated effluent from the refinery's wastewater treatment system (WWTS). Such discharge shall be limited and monitored by the permittee as specified below:

Mass and Concentration Limitations - Outfall 002

PARAMETERS	DISCHARGE LIMITATIONS			
	MASS LOADING LIMITS (lbs/day unless otherwise specified)		CONCENTRATION LIMITS (mg/L unless otherwise specified)	
	MONTHLY AVERAGE	DAILY MAXIMUM	MONTHLY AVERAGE	DAILY MAXIMUM
Flow (MGD) STORET: 50050	Report	Report	---	---
Biochemical Oxygen Demand, (BOD_5) STORET: 00310	280	505	22.1	39.8
Total Suspended Solids (TSS) STORET: 00530	225	352	17.7	27.8
Chemical Oxygen Demand (COD) STORET: 00340	1953	3774	154	298
Oil and Grease STORET: 00552	81.7	154	6.44	12.1
Phenols, total STORET: 32730	1.83	3.76	0.14	0.30
Ammonia, total (as N) STORET: 00610	141	310	11.1	24.5
Sulfide (as S) STORET: 00745	1.36	3.05	0.11	0.24
Dissolved Oxygen (DO) STORET: 00300	---		2.0 (Instantaneous Daily Minimum)	
pH (S.U.) STORET: 00400	Between 6.0 – 9.0			

NOTE: See Parts II and III for Additional Requirements.

There shall be no discharge of a visible sheen of oil or globules of oil or grease on or in the water. Oil and grease shall not be present in quantities that adhere to stream banks and coat bottoms of water courses.

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

The discharge shall not contain chemical, physical, or biological substances in concentrations that are irritating to skin or sense organs or are toxic or cause illness upon ingestion by human beings.

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

Outfall 002: At the sample house located adjacent to the outlet weir of impoundment F04, at Latitude 36.119852° N, Longitude 95.995236° W (GPS: NAD83), in the SE¼, SE¼, SE¼, Section 14, Township 19N, Range 12EIM, Tulsa County, Oklahoma.

Monitoring Requirements and Sample Types – Outfall 002

PARAMETERS	MEASUREMENT FREQUENCY (1)	SAMPLE TYPE
Flow (MGD)	Continuous	Record
BOD_5	2/month	24-hr composite
TSS	1/week	24-hr composite
COD	2/month	24-hr composite
Oil & Grease	2/week	Grab
Phenols, total	2/month	Grab
Ammonia, total as N (2)	2/month	24-hr composite
Sulfide (as S)	2/month	Grab
Dissolved Oxygen (DO) (3)	2/month	Grab
pH (S.U.)	Continuous	Record

(1) When discharging.
(2) See WET testing requirements for Outfall TX2 in Section A.4. Results from concurrent ammonia analyses for Outfall TX2 may be used in partial fulfillment of ammonia monitoring requirements at Outfall 002.
(3) See Part II, Section I about waiving the monitoring requirement for DO after the first year of the permit cycle.

2. Effluent Limitations and Monitoring Requirements for Outfall 003

During the period beginning on the effective date of the permit and lasting through the expiration date, the permittee is authorized to discharge from Outfall 003.

The discharge from Outfall 003 consists of stormwater runoff from non-process areas, once through city water used for boilerhouse jacket cooling, boilerhouse blowdown, low-pH rinse water from the boilerhouse, hydrostatic test water, non-contact cooling water, contact stormwater runoff, unintentional spills and releases of chemicals/hydrocarbons, un-captured fire-fighting water, and steam condensate. Such discharge shall be limited and monitored by the permittee as specified below:

Mass and Concentration Limitations - Outfall 003

PARAMETERS	DISCHARGE LIMITATIONS			
	MASS LOADING LIMITS (lbs/day unless otherwise specified)		CONCENTRATION LIMITS (mg/L unless otherwise specified)	
	MONTHLY AVERAGE	DAILY MAXIMUM	MONTHLY AVERAGE	DAILY MAXIMUM
Flow (MGD) STORET: 50050	Report	Report	---	---
Oil and Grease STORET: 00552	---	---	Report	15
Total Suspended Solids (TSS) STORET: 00530	---	---	Report	45
Total Organic Carbon (TOC) STORET: 00680	---	---	Report	50
pH (S.U.) STORET: 00400	Between 6.5 – 9.0			

NOTE: See Parts II and III for Additional Requirements.

There shall be no discharge of a visible sheen of oil or globules of oil or grease on or in the water. Oil and grease shall not be present in quantities that adhere to stream banks and coat bottoms of water courses.

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

The discharge shall not contain chemical, physical, or biological substances in concentrations that are irritating to skin or sense organs or are toxic or cause illness upon ingestion by human beings.

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

Outfall 003: At the outlet weir of the Off-Unit Storm Detention Pond (F05), at Latitude 36.119967° N, Longitude 95.995066° W (GPS: NAD83) SE¼, SE¼, SE¼, Section 14, Township 19N, Range 12EIM, Tulsa County, Oklahoma.

Monitoring Requirements and Sample Types - Outfall 003

PARAMETERS	MEASUREMENT FREQUENCY (1)	SAMPLE TYPE
Flow (MGD)	Daily	Record
Oil & Grease	Daily	Grab
TSS	Daily	Grab
TOC	Daily	Grab
pH (S.U.)	Daily	Grab

(1) When discharging. Sample is to be taken during the first hour of discharge and daily thereafter.

3. Effluent Limitations and Monitoring Requirements for Outfall 004

During the period beginning on the effective date of the permit and lasting through the expiration date, the permittee is authorized to discharge from Outfall 004.

Outfall 004 can be used by the facility during wet weather or emergency events in which the facility cannot discharge through Outfall 002. Additionally, the facility may discharge through Outfall 004 as needed for maintenance purposes. The same monitoring frequency, mass loading limitations, and concentration limitations for Outfall 002 will apply to Outfall 004 when the facility is discharging through Outfall 004. In addition to the requirements for Outfall 002, the following requirements also apply:

- If HFSTR discharges out of Outfalls 002 and 004 during the same day, HFSTR must take samples for all parameters from both Outfalls. HFSTR must also determine the loading for the day from each Outfall and report the total loading from both Outfalls for each parameter that has a loading limit.
- The facility cannot discharge out of Outfalls 002 and 004 at the same time.
- The facility must change the discharge back to Outfall 002 as soon as possible.

Mass and Concentration Limitations - Outfall 004

PARAMETERS	DISCHARGE LIMITATIONS			
	MASS LOADING LIMITS (lbs/day unless otherwise specified)		CONCENTRATION LIMITS (mg/L unless otherwise specified)	
	MONTHLY AVERAGE	DAILY MAXIMUM	MONTHLY AVERAGE	DAILY MAXIMUM
Flow (MGD) STORET: 50050	Report	Report	---	---
Biochemical Oxygen Demand, (BOD_5) STORET: 00310	280	505	22.1	39.8
Total Suspended Solids (TSS) STORET: 00530	225	352	17.7	27.8
Chemical Oxygen Demand (COD) STORET: 00340	1953	3774	154	298
Oil and Grease STORET: 00552	81.7	154	6.44	12.1
Phenols, total STORET: 32730	1.83	3.76	0.14	0.30
Ammonia, total (as N) STORET: 00610	141	310	11.1	24.5
Sulfide (as S) STORET: 00745	1.36	3.05	0.11	0.24
Dissolved Oxygen (DO) STORET: 00300	---		2.0 (Instantaneous Daily Minimum)	
pH (S.U.) STORET: 00400	Between 6.0 – 9.0			

NOTE: See Parts II and III for Additional Requirements.

There shall be no discharge of a visible sheen of oil or globules of oil or grease on or in the water. Oil and grease shall not be present in quantities that adhere to stream banks and coat bottoms of water courses.
There shall be no discharge of floating solids or visible foam in other than trace amounts.

The discharge shall not contain chemical, physical, or biological substances in concentrations that are irritating to skin or sense organs or are toxic or cause illness upon ingestion by human beings.

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

Outfall 004: At the sample port located prior to the effluent discharge box and commingling with effluent from Outfall 003, at Latitude 36.119988° N, Longitude 95.995069° W (GPS: NAD83) SE¼, SE¼, SE¼, Section 14, Township 19N, Range 12EIM, Tulsa County, Oklahoma.

Monitoring Requirements and Sample Types - Outfall 004

PARAMETERS	MEASUREMENT FREQUENCY (1)	SAMPLE TYPE
Flow (MGD)	Continuous	Record
BOD_5	2/month	24-hr composite
TSS	1/week	24-hr composite
COD	2/month	24-hr composite
Oil & Grease	2/week	Grab
Phenols, total	2/month	Grab
Ammonia, total as N (2)	2/month	24-hr composite
Sulfide (as S)	2/month	Grab
Dissolved Oxygen (DO) (3)	2/month	Grab
pH (S.U.)	Continuous	Record

(1) When discharging.
(2) See WET testing requirements for Outfall TX2 in Section A.4. Results from concurrent ammonia analyses for Outfall TX2 may be used in partial fulfillment of ammonia monitoring requirements at Outfall 002.
(3) See Part II, Section I about waiving the monitoring requirement for DO after the first year of the permit cycle.

4. Biomonitoring Requirements for Outfall TX2

a. Whole Effluent Toxicity Reporting and Monitoring Requirements

(i) Daphnid Species

During the period beginning the effective date of the permit and lasting through the expiration date, the permittee is authorized to discharge from Outfall TX2 (functionally identical to Outfall 002). The discharge from Outfall 002 consists of treated effluent from the refinery's wastewater treatment system (WWTS). Such discharge shall be limited and monitored by the permittee as specified below.

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 retests/repeat tests be necessary.

All laboratory analyses for the biomonitoring parameters specified in this permit must be performed by a laboratory accredited by the Oklahoma Department of Environmental Quality for those parameters.

Whole effluent toxicity reporting and monitoring requirements apply beginning the effective date of the permit. Compliance with the Whole Effluent Toxicity Limit is required beginning the effective date of the permit.

Whole Effluent Toxicity Limit and Monitoring Requirements

Effluent Characteristic	Effluent Limitation	Monitoring Requirements (1)(2)	
	48-hour Min	Testing Frequency	Sample Type
Whole Effluent Toxicity Limit (*Daphnia magna*, lowest acute LC_{50}) [STORET 51923]	>100%	1/quarter	24-hr. comp

(1) See Part II, Section F, Whole Effluent Toxicity Limit, for additional monitoring and reporting conditions.
(2) Results of monthly tests conducted pursuant to prior test failure may be substituted for a routine test result if the monthly test coincides within the testing period of the routine testing (See Part II, Section F, Item 2.a).

Whole Effluent Toxicity Reporting and Monitoring Requirements

Effluent Characteristic				Reporting Requirements	Monitoring Requirements (1)	
Test		Critical Dilution (2)	Parameter	48-hour Min	Testing Frequency	Sample Type
Testing	*Daphnia magna*, 48-hour acute LC_{50} static renewal, freshwater	100%	Pass/Fail Survival [TEM3C]	Report	1/quarter (3)	24-hr. comp
			LC_{50} Effluent Conc [TAM3C]	Report		
			% Mortality at 100% Effluent [TJM3C]	Report		

(1) See Part II, Section F, Whole Effluent Toxicity Limit, for additional monitoring and reporting conditions.
(2) All acute WET testing shall use the dilution series specified in Part II, Section F, Item 1.
(3) Quarterly reporting periods commence with the effective date of the permit. A valid WET test shall be reported for *D. magna* for each reporting period. Results of monthly tests conducted pursuant to prior test failure may be substituted for a routine test result if the monthly test coincides within the testing period of the routine testing (See Part II, Section F, Item 2.a).

D. magna whole effluent toxicity reporting and monitoring requirements apply beginning _____, and the first reporting period is _____ to _____.

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 F, Item 4.

Sampling Location

Samples taken in compliance with the monitoring requirements specified above for Outfall TX2 shall be taken at the following location: the same location as for Outfall 002.

(ii) Fatheads Species

During the period beginning the effective date of the permit and lasting through the expiration date, the permittee is authorized to discharge from Outfall TX2 (functionally identical to Outfall 002). The discharge from Outfall 002 consists of treated effluent from the refinery's wastewater treatment system (WWTS). Such discharge shall be limited and monitored by the permittee as specified below.

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 retests/repeat tests be necessary.

All laboratory analyses for the biomonitoring parameters specified in this permit must be performed by a laboratory accredited by the Oklahoma Department of Environmental Quality for those parameters.

Whole Effluent Toxicity Reporting and Monitoring Requirements

Effluent Characteristic				Reporting Requirements	Monitoring Requirements [1]	
	Test	Critical Dilution [2]	Parameter	48-hour Min	Testing Freq. [3]	Sample Type
Testing	*Pimephales promelas* (Fathead minnow), 48-hour acute LC_{50} static renewal, freshwater	100%	Pass/Fail Survival [TIM6C]	Report	1/quarter [4]	24-hr. comp
			LC_{50} Effluent Conc. [TAM6C]	Report		
			% Mortality at 100% Effluent [TJM6C]	Report		
Retesting	Retest #1 – Pass/fail survival for species experiencing test failure [STORET 22415] [5]			Report	As Required [6]	24-hr. comp
	Retest #2 – Pass/fail survival for species experiencing test failure [STORET 22416] [5]			Report		

(1) See Part II, Section G, Whole Effluent Toxicity Testing, for additional monitoring and reporting conditions.
(2) All acute WET testing shall use the dilution series specified in Part II, Section G, Item 1.
(3) See provision for monitoring frequency reduction after the first year (Part II, Section G, Item 5).
(4) 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).
(5) Applies according to results of test failure triggering monthly retests.
(6) Monthly retesting required only if routine test for reporting period fails. Fill out ONLY these two retest parameters on the retest DMRs, do not change the original results, and put the correct submission date in the lower right hand corner of the DMR.

P. promelas (Fathead minnow) whole effluent toxicity reporting and monitoring requirements apply beginning _____, and the first reporting period is _____ to _____.

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.

Sampling Location

Samples taken in compliance with the monitoring requirements specified above for Outfall TX2 shall be taken at the following location: the same location as for Outfall 002.

b. Whole Effluent Toxicity Concurrent Testing Provision

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. Concurrent analysis of TDS and constituent ion species is required for each individual effluent sample collected for *Daphnia magna* WET testing or retesting. For purposes of concurrent testing requirements, TDS constituent ion species are: K^+ (potassium), Na^+ (sodium), Ca^{+2} (calcium), Mg^{+2} (magnesium), Cl^- (chloride), HCO_3^- (bicarbonate) and SO_4^{-2} (sulfate).

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 Testing Requirements for Acute WET Testing

Effluent Characteristic	Concentration			Monitoring Requirements	
	Daily Min	Monthly Avg.	Daily Max	Monitoring Frequency	Sample Type
Ammonia, total (mg/L) [STORET 00610] (1)	Report	Report	Report	1/quarter (2)	24-hr. comp
pH (S.U.) [STORET 00400] (1)	Report	---	Report	1/quarter (2)	Measured in each composite effluent sample just prior to first use
Total Dissolved Solids (mg/L) [STORET 70300] (3)	Report	Report	Report	1/quarter	24-hr. comp

(1) Two sets of samples for concurrent analyses are required for ammonia and pH: Report only those effluent samples collected for WET testing of the *Pimephales promelas*.

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 a WET testing laboratory shall NOT undergo any preservation other than refrigeration to maintain a temperature at or below 6°C but not frozen prior to arrival and processing at the WET testing laboratory. These results should be used in the table above. Samples sent directly to a state accredited analytical laboratory must be composite samples that are properly preserved. These results may be included in the results for Outfall 002.

A second concurrent analysis is required for the sample that is sent to the WET testing laboratory and for the table above. 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 ammonia (NH_3-N) at a state accredited laboratory. The pH measurement required for the above table must be taken just prior to the acidification step. These pH and ammonia readings should NOT be included in the results for Outfall 002.

(2) See provision for WET testing monitoring frequency reduction after the first year (Part II, Section G, Item 5).

(3) One sample for concurrent analysis required for TDS: Report only those effluent samples collected for WET testing of the *Daphnia magna.*

The concurrent TDS sample is taken at the beginning of the biomonitoring test. Only one sample is necessary and it must be sent to a state accredited analytical laboratory for the TDS analyses. The analyses must include the constituent ion species listed for TDS above the concurrent table.

The sample must be a composite that is properly preserved and refrigerated to maintain a temperature at or below 6°C but not frozen prior to arrival and processing. This result may be included in the results for Outfall 002, if required.

Sampling Location

Samples taken in compliance with the monitoring requirements specified above for Outfall TX2 shall be taken at the following location: the same location as for Outfall 002.

SECTION B. BACKGROUND MONITORING REQUIREMENTS – OUTFALL 999 (UPSTREAM)

The following parameters shall be monitored in the Arkansas River at a point immediately upstream of the main outfall, but not affected by the discharge.

Background Monitoring Requirements – Outfall 999

PARAMETERS	CONCENTRATION LIMITATIONS (µg/L, unless otherwise specified)		MEASUREMENT FREQUENCY (1)	SAMPLE TYPE
	MONTHLY AVERAGE	DAILY MAXIMUM		
Total Mercury STORET:71900	Report	Report	1/month	Grab

(1) Background requirements are established in this permit for the purpose of collecting 12 data points only. Monitoring shall be performed for twelve (12) consecutive months beginning the 37th month after the effective date of the permit.

SECTION C. SCHEDULE OF COMPLIANCE

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

SECTION D. REPORTING OF MONITORING RESULTS

Monitoring results shall be reported in accordance with the provisions of Part III, Section E(4) of the permit. Monitoring results obtained during the previous month shall be summarized and electronically reported on an electronic Discharge Monitoring Report (eDMR) form due to the Oklahoma Department of Environmental Quality, Water Quality Division, Wastewater Compliance Tracking Section no later than the 15th day of the month following the completed monthly test. If no discharge occurs during the reporting period, an eDMR form stating "No Discharge" shall be electronically submitted according to the above schedule. Instructions on how to register as a "Preparer" or "Signatory" for eDMRs, as well as how to prepare and submit eDMRs, can be found on DEQ's website at https://oklahoma.gov/deq/divisions/water-quality/wastewater-stormwater/electronic-reporting.html. Assistance is also available by contacting DEQ at (405) 702-8100 or deqreporting@deq.ok.gov.

The first report is due on _____.

PART II
OTHER PERMIT REQUIREMENTS

A. REGULATORY NOTICE

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 rules of the Oklahoma Department of Environmental Quality, 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 Director's approval, grant and issuance of this Permit, permittee acknowledges receipt of true, correct, and current copies of Oklahoma's Water Quality Standards and the rules of the Oklahoma Department of Environmental Quality.

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 advances. Modification or revocation and reissuance of the Permit shall follow regulations listed at 40 C.F.R. § 124.5.

C. LABORATORY ACCREDITATION

All laboratory analyses for the parameters specified in this permit must be performed by a laboratory accredited by the Oklahoma Department of Environmental Quality for those parameters.

D. ANALYTICAL REQUIREMENTS

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 in 40 C.F.R. Part 136. Appendices A, B, and C to 40 C.F.R. Part 136 are specifically referenced as part of this requirement. Amendments to 40 C.F.R. Part 136 promulgated and incorporated by reference in OAC 252:606-1-3(b)(7) after the effective date of this Permit shall supersede these requirements as applicable.

E. MINIMUM QUANTIFICATION LEVEL (MQL)

If any individual analytical test result taken for compliance with this permit is a non-detect, then the detection limit shall be used for DMR calculations. Any time a non-detect value is used for DMR calculations, the value reported on the DMR shall use the less than sign (<).

F. WHOLE EFFLUENT TOXICITY TESTING FOR DAPHNID SPECIES

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 bio-monitor for *Daphnia magna* 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 to ensure sufficient time remains in the reporting period should retests/repeat tests be necessary.

All laboratory analyses for the biomonitoring parameters specified in this permit must be performed by a laboratory accredited by the Oklahoma Department of Environmental Quality for those parameters.

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

- Monthly: 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.

APPLICABLE TO OUTFALL(S):	002
REPORTED ON DMR AS OUTFALL(S):	TX2
CRITICAL DILUTION:	100%
EFFLUENT DILUTION SERIES (ALL TESTS):	32%, 42%, 56%, 75%, 100%
SAMPLE TYPE:	Defined at Part I
TEST SPECIES/METHODS:	40 C.F.R. Part 136, except for changes required by EPA, Region 6.

Daphnia magna, 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.

b. Acute test failure –Acute test failure (LC_{50} test) is defined as 50% or more lethality (toxicity) at 48 hours to test organisms at any effluent concentration. The 48-hour LC_{50} effluent value must be >100% to indicate a passing test. Any 48-hour LC_{50} effluent value of 100% or less (or equivalently, a survival value of less than 50.1% in any test dilution) will constitute a test failure.

c. The conditions of this item are effective beginning with the effective date of the WET limit, as established in Part I of this permit. When a whole effluent toxicity test for *Daphnia magna* results in an LC_{50} value of 100% or less (i.e., greater than or equal to 50% lethality (toxicity) in any effluent dilution), the permittee shall be considered in violation of this permit, and the frequency of testing for that species will increase to monthly until such time as compliance with the LC_{50} whole effluent toxicity limit is demonstrated for that test species for a period of three (3) consecutive months , at which time the permittee may return to the testing frequency for each species stated in Part I of this permit. The increased frequency for WET testing after a violation is used to determine the duration of a toxic event. A test that meets all test acceptability criteria and demonstrates significant toxic effects does not need additional confirmation. Such testing cannot confirm or disprove a previous test result. Testing conducted pursuant to the provision shall be reported in accordance with Item 3 of this section.

d. Reopener clause – This permit may be reopened to require chemical specific effluent limits, additional testing, and/or other appropriate actions to address toxicity. Accelerated or intensified testing may be required in accordance with Section 308 of the Clean Water Act.

e. Upon becoming aware of the failure of any test, the permittee shall immediately notify the DEQ Water Quality Division biomonitoring coordinator, and shall provide written notification within five (5) working days of the test failure with a summary of the results of and any other pertinent circumstances associated with the failed test.

2. Testing Requirements due to Test Failure

Upon becoming aware of the failure of any test, the permittee shall immediately notify the DEQ Water Quality Division biomonitoring coordinator, and shall provide written notification 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.

Beginning with the effective date of the WET limit, as established in Part I of this permit, the following testing requirements due to acute test failure apply:

a. When there is an acute test failure for *Daphnia magna* during routine testing, at least three additional monthly tests for *Daphnia magna* are required (Part II, Section F.1.c above). The additional tests shall be conducted monthly during subsequent consecutive months until there are three consecutive months of passing tests at which time the frequency of testing shall return to that stated in Part 1 of the permit. The permittee may substitute one of the monthly tests that coincides within the quarter of a routine toxicity testing.

b. A full laboratory report for the failed routine test and all additional tests shall be provided and submitted to DEQ in accordance with the procedure outlined in Item 3.

c. If the permittee cannot pass three tests in a row within the next six months, DEQ will review the test results and may require a Toxicity Identification Evaluation (TIE) be done to determine the cause of the toxicity. If the TIE cannot detect the problem, another Toxicity Reduction Evaluation (TRE) may be required.

d. Suspension of monthly testing requirements during a TRE – Monthly testing requirements in Item 2.a are temporarily suspended upon submittal of a TRE Action Plan. Such suspension of monthly testing 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 magna* survival test.

(3) The percent coefficient of variation between replicates shall be 40% or less in the critical dilution unless significant toxicity is exhibited in the *Daphnia magna* survival test.

(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.

If the above criteria or criteria listed in Item 1.a are not met the test will be considered invalid. Test failure may not be construed or reported as invalid due to a coefficient of variation value for toxicity of greater than 40% for replicates tested at the critical dilution. A repeat test shall be conducted and the biomonitoring enforcement coordinator notified, within the reporting period of any test determined to be invalid.

b. The permittee shall follow the requirements listed below in determining success or failure of a WET test:

The statistical analyses in the *Daphnia magna* survival test, 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. The permittee shall use dilution water that meets the following standards:

(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. In OAC 252:606-6-36, for discharges to a receiving stream classified as intermittent or to a receiving stream with no flow due to zero flow, 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. In the event that the receiving stream has sufficient flow for a sample to be collected, the facility will return to receiving stream water instead of synthetic.

(2) If the receiving water is unsatisfactory as a result of instream toxicity (fails to meet the test acceptance criteria in 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);

(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; and

(d) the receiving water test must be conducted at the start of each permitting cycle.

d. The permittee shall collect samples that are representative of their effluent by following the criteria listed below:

(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 the requirements listed 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 permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 36 hours. The permittee must initiate the toxicity test within 36 hours after the collection of the last portion of the first composite sample. The first composite sample shall be used to initiate each test. The second composite sample shall be used for 24-hour static renewal of each dilution concentration for each test. Samples shall be chilled to maintain a temperature at or below 6° C but not frozen 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 composite sample, the permittee must ensure that the first composite sample is of sufficient volume to complete the required testing with daily renewal of effluent. The abbreviated 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 below. 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 retain each full report pursuant to the records retention provisions of Part III of this permit. The permittee shall also submit to the DEQ biomonitoring enforcement coordinator a copy of the full laboratory test reports at TX2 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, including any test which is considered invalid, is terminated early for any reason, or which indicates receiving water toxicity. The reports shall be received no later than the 15th day of the month following the end of the testing period.

b. A valid test for *Daphnia magna* (excluding retests) at TX2 must be reported on the DMR for each reporting period specified in Part I of this permit. DMRs must be received by the 15th day of the month following the end of the testing period. The full report for the test (see Item 3.a above) shall be submitted along with the DMR. If a test is determined to be invalid, the repeat test must be conducted in the coinciding testing period; if the first sample of the repeat test is taken after the last day of the final month in a testing period, the facility will be out of compliance with the reporting period. If monthly retesting is required as a result of a WET limit permit violation, the monthly DMR will be reported to TX2A. Quarterly testing at TX2Q shall continue; the facility may substitute a monthly test from TX2A for the quarterly report if the test falls within the testing period. If more than one valid test (excluding retests) is performed on a species during a reporting period, the permittee shall report the lowest lethal test results as the 48-hour minimum and the *D. magna* [51923] result.

c. If any test results in anomalous LC_{50} findings (i.e., it indicates an interrupted dose response across the dilution series), DEQ recommends that the permittee contact the DEQ biomonitoring coordinator for a technical review of the test results prior to submitting the full laboratory test report and DMR. A summary of all tests initiated during the reporting period, including invalid tests, repeat tests, and monthly tests, shall be attached to the reporting period DMR for DEQ review.

A test is a <u>REPEAT</u> test if it is performed as the result of a previously invalid test. A test is a <u>RETEST</u> if it is performed as the result of a previously failed test, the exception being where the test is the first (valid) test of a reporting period, in which case it is reported as such on the DMR for that period.

(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.

d. 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.

Daphnia magna

(1) Parameter TEM3C: If the *Daphnia magna* 48-hour LC_{50} for survival is equal to or less than 100%, report a "1"; otherwise, report a "0".

(2) Parameter TAM3C: Report the *Daphnia magna* 48-hour LC_{50} value for survival.

(3) Parameter TJM3C: Report the *Daphnia magna* 48-hour percent mortality in the 100% effluent concentration.

(4) Parameter 51923: Report the lowest acute LC_{50} for *Daphnia magna*.

e. The permittee shall report the results for all toxicity monthly testing on the DMR(s) for the reporting period in which monthly testing is required, which shall be received no later than the 15th day of the month following the end of the monthly period. Results of all required monthly tests shall be reported under TX2A of the DMR for the reporting period (see Item 4.b above). If the permittee passes three consecutive tests in the six months after the initial failure, the permittee will return to quarterly testing. If the permittee takes the first sample of the monthly test after the last day of the final month in the monthly period, the facility will be out of compliance with the reporting period. The full laboratory report for the WET tests (see Item 4.a above) shall be submitted along with the retest DMR. Should test failures necessitate the continuation of monthly testing into subsequent reporting periods, the results of the first test in any reporting period will be reported using the parameter STORET codes listed in Items 4.c above. If monthly testing is not required during a given reporting period, the permittee shall leave these DMR fields blank and DMR TX2A will not be activated.

f. Whole effluent toxicity limit – The permittee shall report the lowest LC_{50} value across these species for the 48-hour minimum under STORET No. *D. magna* [51923] on the DMR for the reporting period in accordance with Part III of this permit.

G. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENT – FATHEAD SPECIES

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 bio-monitor for *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 to ensure sufficient time remains in the reporting period should retests/repeat tests be necessary.

All laboratory analyses for the biomonitoring parameters specified in this permit must be performed by a laboratory accredited by the Oklahoma Department of Environmental Quality for those parameters.

Provisions for performance-based monitoring frequency reductions are contained in Item 5 of this section. Intervals between test initiation dates shall be a function of the required testing frequency, as follows:

- Monthly: 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.

APPLICABLE TO OUTFALL(S):	002
REPORTED ON DMR AS OUTFALL(S):	TX2
CRITICAL DILUTION:	100%
EFFLUENT DILUTION SERIES (ALL TESTS):	32%, 42%, 56%, 75%, 100%
SAMPLE TYPE:	Defined at Part I
TEST SPECIES/METHODS:	40 C.F.R. Part 136, except for changes required by EPA, Region 6.

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 (LC_{50} test) is defined as 50% or more lethality (toxicity) at 48 hours to test organisms at any effluent concentration. The 48-hour LC_{50} effluent value must be >100% to indicate a passing test. Any 48-hour LC_{50} effluent value of 100% or less (or equivalently, a survival value of less than 50.1% in any test dilution) 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 Test Failure

Upon becoming aware of the failure of any test, the permittee shall immediately notify the DEQ Water Quality Division biomonitoring coordinator, and shall provide written notification 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 *Pimephales promelas* during routine testing, the frequency of testing for *Pimephales promelas* 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 *Pimephales promelas* 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 DEQ in accordance with procedures outlined in Item 4 of this section.

b. Persistent toxicity – If either of the two additional tests results in an LC_{50} value less than or equal to 100%, persistent toxicity is exhibited. Then 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 only if the permittee is under a compliance schedule defined in an OPDES permit or an enforcement order to effect aquatic toxicity reduction measures.

c. Intermittent toxicity – If both additional tests result in an LC_{50} value of greater than 100%, persistent toxicity is not exhibited. However, if any routine test failure occurs within 18 months of a prior test failure,

intermittent toxicity is exhibited, and the permittee may be required by DEQ to initiate a TRE, as described in Item 6 of this section, based on the severity and pattern of such toxic effect over time.

d. Suspension of Retesting Requirement 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 Fathead minnow survival test.

(3) The percent coefficient of variation between replicates shall be 40% or less in the critical dilution, unless significant toxicity is exhibited in the Fathead minnow survival test.

If the above criteria or criteria listed in Item 1.a are not met the test will be considered invalid. Test failure may not be construed or reported as invalid due to a coefficient of variation value for toxicity of greater than 40% for replicates tested at the critical dilution. A repeat test shall be conducted and the biomonitoring enforcement coordinator notified, within the reporting period of any test determined to be invalid.

b. The permittee shall follow the requirements listed below in determining success or failure of a WET test:

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

c. The permittee shall use dilution water that meets the following standards:

(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. In OAC 252:606-6-36, for discharges to a receiving stream classified as intermittent or to a receiving stream with no flow due to zero flow, 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. In the event that the receiving stream has sufficient flow for a sample to be collected, the facility will return to receiving stream water instead of synthetic.

(2) If the receiving water is unsatisfactory as a result of instream toxicity (fails to meet the test acceptance criteria in 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);

(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; and

(d) the receiving water test must be conducted at the start of each permitting cycle.

d. The permittee shall collect samples that are representative of their effluent by following the criteria listed below:

(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 the requirements listed 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 permittee must collect the composite samples so that the maximum holding time for any effluent sample shall not exceed 36 hours. The permittee must initiate the toxicity test within 36 hours after the collection of the last portion of the first composite sample. The first composite sample shall be used to initiate each test. The second composite sample shall be used for 24-hour static renewal of each dilution concentration for each test. Samples shall be chilled to maintain a temperature at or below 6° C but not frozen 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 composite sample, the permittee must ensure that the first composite sample is of sufficient volume to complete the required testing with daily renewal of effluent. The abbreviated 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 below. 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 retain each full report pursuant to the records retention provisions of Part III of this permit. The permittee shall also submit to the DEQ biomonitoring enforcement coordinator a copy of the full laboratory test reports at TX2 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, including any test which is considered invalid, is terminated early for any reason, or which indicates receiving water toxicity. The reports shall be received no later than the 15th day of the month following the end of the testing period.

b. A valid test for *Pimephales promelas* (excluding retests) at TX2 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. An electronic DMR and a copy of the lab report must be received by the 15th day of the month following the end of the testing period.

If a test is determined to be invalid, the repeat test must be conducted in the coinciding testing period; if the first sample of the repeat test is taken after the last day of the final month in a testing period, the facility will be out of compliance with the reporting period. If a lethal failure is experienced for *Pimephales promelas*, two (2) monthly WET retests are required during the two-month period following the month in which the test failure is experienced.

If more than one valid test (excluding retests) is performed on a species during a reporting period, the permittee shall report the lowest lethality LC_{50} effluent concentrations for all such tests as the 7-day minimum on the DMR for the reporting period in question, specifying the 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.

c. If any test results in anomalous LC_{50} findings (i.e., it indicates an interrupted dose response across the dilution series), DEQ recommends that the permittee contact the DEQ biomonitoring coordinator for a technical review of the test results prior to submitting the full laboratory 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 the result of a previously invalid test. A test is a RETEST if it is performed as the result of a previously failed test, the exception being where the test is the first (valid) test of a reporting period, in which case it is reported as such on the DMR for that period.

(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.

d. 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.

Pimephales promelas (Fathead Minnow)

(1) Parameter TIM6C: If the Fathead minnow 48-hour LC_{50} for survival is equal to or less than 100%, report a "1"; otherwise, report a "0".

(2) Parameter TAM6C: Report the Fathead minnow 48-hour LC_{50} value for survival.

(3) Parameter TJM6C: Report the Fathead minnow 48-hour percent mortality in the 100% effluent concentration.

e. 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 Fathead minnow results in a 48-hour LC_{50} 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 Fathead minnow results in a 48-hour LC_{50} 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 received no later than the 15th day of the month at the end of the testing period for 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 for 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 the first year of testing for Fathead minnow with no lethal effects demonstrated at or below the critical dilution. Certification in accordance with Item 5.b of this section shall be submitted with the application for monitoring frequency reduction. If granted, the monitoring frequency may be reduced to a minimum of once per 6 months (actual testing must occur during the periods June 1 through September 30 and December 1 through March 31) for the approved test specie(s).

b. Certification – The permittee must certify in writing that no lethal 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, LC_{50} concentrations, percent mortality at the 100% effluent dilution, and coefficients of variation for the control and 100% effluent dilution. If the certification is approvable, DEQ will issue a letter of confirmation of the monitoring frequency reduction. A copy of the confirmation letter will be forwarded to DEQ's Permit Compliance Tracking Section to update the permit reporting requirements and TX2S will be activated while TX2Q will be deactivated. DEQ may refuse to approve 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 not approved, the permittee shall continue biomonitoring of the affected test species at a frequency of once per quarter until the permit is reissued.

c. Lethal failures after a monitoring frequency reduction – If any lethal endpoint test is failed at any time after the granting of a monitoring frequency reduction, two monthly retests are required for that species in accordance with Item 2 above and the monitoring frequency for the affected test species shall be increased to the WET testing frequency prescribed in Part I before the frequency reduction was granted and shall remain for the life of the permit. TX2Q will be reactivated and TX2S will be discontinued for the life of the permit. If the permittee is performing a TRE this section does not apply.

6. Toxicity Reduction Evaluation (TRE)

a. Within ninety (90) days of confirming toxicity in the retests for a test species, the permittee shall submit to 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 and include the following:

(1) Specific Activities. DEQ requires that a thorough audit of the design, operation and maintenance of the entire plant be done at the **outset** of the Toxicity Identification Evaluation (TIE) and/or TRE, rather than later in the process.

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 available through the

National Technical Information Service (NTIS)

U.S. Department of Commerce
National Technical Information Service
5301 Shawnee Rd., Alexandria, VA 22312
E-mail: orders@ntis.gov
(800) 553-NTIS (6847), or at the

National Service Center for Environmental Publications (NSCEP)

U.S. EPA/NSCEP
P.O. Box 42419
Cincinnati, Ohio 45242-0419
E-mail: nscep@bps-lmit.com
1-(800) 490-9198

(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 to 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 toxicity 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 submitting the plan and schedule. The permittee shall assume all risks for failure to achieve the required toxicity reduction.

c. The permittee shall submit to DEQ a quarterly TRE Activities Report with the Discharge Monitoring Report in months to be specified in their TRE plan, containing the following information:

(1) all data and/or substantiating documentation which identifies the pollutant(s) and/or source(s) of effluent toxicity;

(2) all studies/evaluations and results on the treatability of the facility's effluent toxicity; and

(3) all data which identifies effluent toxicity control mechanisms that will reduce effluent toxicity to the level necessary to meet no significant toxicity at any dilution.

d. The permittee shall submit to DEQ a Final Report on Toxicity Reduction Evaluation Activities no later than 28 months after confirming toxicity in the retests. The final report shall provide information pertaining to the specific control mechanism(s) selected that will, when implemented, result in reduction of effluent toxicity to a 48-hour LC_{50} effluent value of greater than 100%. The final report shall also provide a schedule for implementing the selected control mechanism(s).

e. Quarterly testing during the TRE is the minimum monitoring requirement. DEQ recommends that permittees performing a TRE not rely on quarterly testing alone. Failure to identify the specific chemical compound(s) causing toxicity test failure will normally result in a permit limit for whole effluent toxicity per federal regulations at 40 C.F.R. § 122.44(d)(1)(v).

H. SURFACE IMPOUNDMENT REQUIREMENTS

1. A minimum freeboard of 1 feet shall be maintained for surface impoundments F01 through F06.

2. The permittee is authorized to withdraw wastewater from F06 (Firewater Pond formerly known as T01) for fire-fighting training and emergency fire-fighting activities. The permittee shall continue to implement and update Best Management Practices (BMP's) designed to prevent or minimize the potential for the release of pollutants from the facility to the waters of the State as a result of any such fire-fighting training or emergency fire-fighting activities. The facility is also authorized to transfer wastewater between F05 and F06 as needed.

3. 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.

4. At such time as any of the impoundments (F01-F06) are to be permanently taken out of service or at such time as the contents of any of the impoundments (F01-F06) pose a risk to the environment or waters of the state, the owner or operator of the facility shall be required to follow all closure requirements contained in OAC 252:616-13.

5. The facility shall develop and maintain a written IMOP that discusses maintenance, operational, and monitoring procedures as specified in OAC 252:616-5-2 for impoundments F01, F02, F03, and F04 that contain Class I wastewater. The written IMOP is due six months following the effective date of the permit. The IMOP shall be kept on site and made available to DEQ upon request. The IMOP must be followed and updated annually, if necessary. The following shall be addressed in the IMOP.

    a. Maintenance procedures including methods to protect impoundments and liner integrity
    b. Operation procedures used to protect surface impoundments and liner integrity
    c. The name and telephone number of personnel responsible for maintenance, operation and monitoring

6. In all other respects, surface impoundments F01 through F06 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. REQUEST TO WAIVE THE DISSOLVED OXYGEN MONITORING REQUIREMENT

If the facility can show a consistent level of DO above the permit limitation during the first year of monitoring, then after the first year of the permit cycle, the permittee may submit a request to have the DO monitoring waived for the remainder of the five-year permit cycle. All relevant laboratory reports must also be submitted with this request. The monitoring for DO will once again become effective upon subsequent renewals of the permit. Additionally, if the facility can show that the discharge consistently maintains a DO above the permit limitation, then the facility may request a modification of the WQMP to remove the DO limitation, contingent upon DEQ and EPA approval. Any future requests, along with supporting documentation, to have the monitoring for DO waived must be made during the application process.

J. OTHER DISPOSAL METHODS

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewater shall be disposed of at a state-approved industrial waste disposal site or to a company for recycling.

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

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

Upon request, the above records shall be made available to the staff of DEQ for inspection, review, and copying.

APPENDIX A

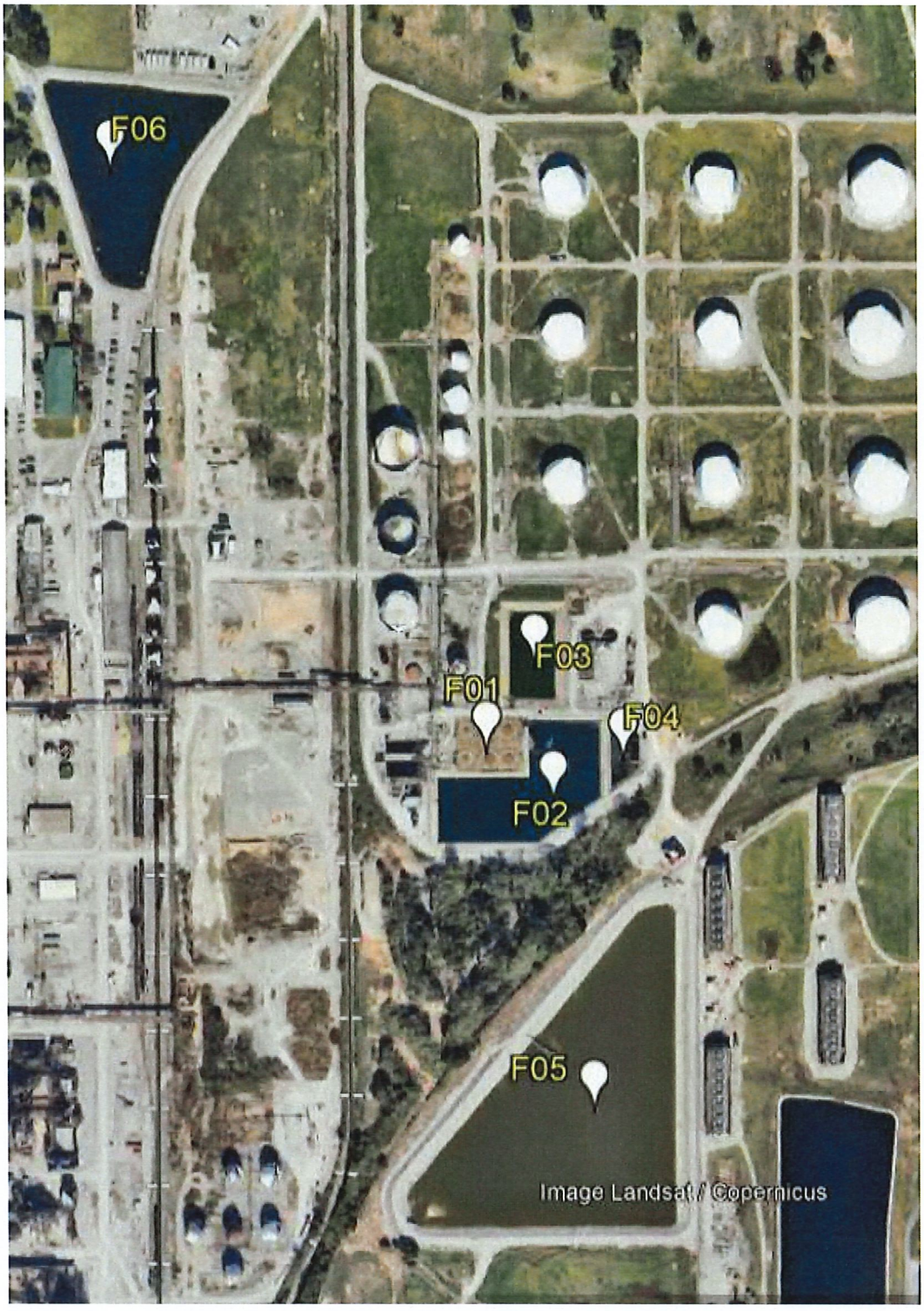
DESCRIPTION OF WASTEWATER TREATMENT/DISPOSAL SURFACE IMPOUNDMENTS (S.I.s)

Classification [1] OAC 252:616-1-2		Liner Type [2]	Holding Capacity or Dimensions OAC 252:616-7-1(6) [2]	Wastewater Destination
S.I.	Wastewater			
F01	Process wastewater, groundwater from hydrocarbon recovery project, stormwater runoff from process areas, Class I	Concrete	138' x 175' x 11.5' 1.5 million gallons	F04
F02	Wastewater from F01, F04, diversion box, or storm pump basin, Class I	Concrete	324' x 445' x 12.5' 6.5 million gallons	API Separator, F01, or F03
F03	Wastewater from F02, Class I	Gunite	175' x 281' x 11.5' 2.84 million gallons	F02
F04	Treated wastewater from clarifiers and DAF unit, Class I	Concrete	85' x 108' x 8' 315,000 gallons	Outfall 002
F05	Stormwater runoff from non-process areas, potential stormwater from process areas during significant rain events, boilerhouse jacket cooling, boilerhouse blowdown, low-pH rinse water, hydrostatic test water, non-contact cooling water, potential spills & firefighting water, and wastewater from F06 - Class III	Bentonite	759' x 880' x 14' 35.6 million gallons	Outfall 003, to F06, or to wastewater treatment plant
F06	Non-contaminated stormwater runoff, potable water from the City of Tulsa, boilerhouse cooling water, and wastewater from F05 - Class III	Excavated Soil	Unknown Dimensions 2.0 million gallons	Evaporation or to F05

(1) Wastewater classification according to OAC 252:616-1-2.
(2) Based on information contained in the application.

Location of Surface Impoundments

S.I.	Legal Location	Relative Location of Impoundments
F01	SW¼, SE¼, SE¼, Section 14, Township 19N, Range 12EIM, Tulsa County, Oklahoma	Located in the central eastern portion of the refinery, immediately to the north and west of F02
F02	SW¼, SE¼, SE¼, Section 14, Township 19N, Range 12EIM, Tulsa County, Oklahoma	Located directly to the south and east of F01
F03	SW¼, SE¼, SE¼, Section 14, Township 19N, Range 12EIM, Tulsa County, Oklahoma	Located directly to the north of F01 and F02
F04	SE¼, SE¼, SE¼, Section 14, Township 19N, Range 12EIM, Tulsa County, Oklahoma	Located directly to the east of F02
F05	NE¼, NE¼, Section 23, Township 19N, Range 12EIM, Tulsa County, Oklahoma	Located in the central eastern portion of the refinery, approximately 500 feet south of F02
F06	SE¼, NW¼, SE¼, Section 14, Township 19N, Range 12EIM, Tulsa County, Oklahoma	Located in the north central portion of the refinery, immediately to the north of the office parking lot


F06
F03
F01
F04
F02
F05
Image Landsat / Copernicus