NPDES PERMIT NO. OK0044873
STATEMENT OF BASIS

FOR THE DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

APPLICANT:

Glenpool Pipeline Breakout Station
P.O. Box 2650
Tulsa Oklahoma 74101

ISSUING OFFICE:

U.S. Environmental Protection Agency
Region 6
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DATE PREPARED:
June 5, 2017

PERMIT ACTION

It is proposed that the facility be issued an NPDES permit for a 5-year term in accordance with regulations contained in 40 Code of Federal Regulations (CFR) 122.46(a).

40 CFR CITATIONS: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations, revised as of June 2, 2017.

RECEIVING WATER – BASIN

Coal Creek (Intermittent). Coal Creek is Oklahoma Segment OK120420020030_00 and is a tributary of Polecat Creek located approximately 3 miles downstream of the outfall.

DOCUMENT ABBREVIATIONS

For brevity, Region 6 used acronyms and abbreviated terminology in this Statement of Basis document whenever possible. The following acronyms were used frequently in this document:

BAT	Best Available Technology Economically Achievable)
BOD_5	Biochemical oxygen demand (five-day unless noted otherwise)
BOPD	Barrels of oil per day
BPJ	Best professional judgment
CFR	Code of Federal Regulations
cfs	Cubic feet per second
CPP	Continuing Planning Process
COD	Chemical oxygen demand
COE	United States Corp of Engineers
CWA	Clean Water Act
DMR	Discharge monitoring report
ELG	Effluent limitation guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
F&WS	United States Fish and Wildlife Service
GPD	Gallon per day
µg/l	Micrograms per litter (one part per billion)
mg/l	Milligrams per liter (one part per million)
MGD	Million gallons per day
MSGP	Multi-Sector General Permit
NPDES	National Pollutant Discharge Elimination System
MQL	Minimum quantification level
O&G	Oil and grease
ODEQ	Oklahoma Department of Environmental Quality
OWQS	Oklahoma Water Quality Standards
OWRB	Oklahoma Water Resources Board
Q*	Ratio of effluent flow to stream flow, also known as dilution capacity.
RP	Reasonable potential
SWP3	Stormwater Pollution Prevention Plan
SIC	Standard industrial classification
s.u.	Standard units (for parameter pH)
TDS	Total dissolved solids
TMDL	Total maximum daily load
TOC	Total Organic Carbon
TRC	Total residual chlorine
TSS	Total suspended solids
WET	Whole effluent toxicity
WQBELs	Water Quality-Based Effluent Limits
WQSIP	Water Quality Standards Implementation Plan
WQS	Water Quality Standards

I. PROPOSED CHANGES FROM PREVIOUS PERMIT

None

II. APPLICANT LOCATION and ACTIVITY

Under the SIC Code 4613, the applicant is engaged in Refined Petroleum Pipelines.

As described in the application, the facility is located at 1312 West 126th St. South Jenks, Tulsa Oklahoma. The facility is engaged in interstate refine petroleum products pipeline.

The discharge points showing outfall number, discharge coordinates: latitude and longitude, county, average flow rate in millions gallons per day (MGD), receiving water, and the waterbody identification numbers are shown in the following table:

Outfall Reference Number	Discharge Coordinates Latitude Deg° Min' Sec" Longitude Deg° Min' Sec"	County	Average Flow MGD	Receiving Water	Waterbody ID #
101	Latitude 35° 58' 47.6076" N; Longitude 96° 0' 31.9716" W	Tulsa	8.916 x 10^{-8}	Outfall 001	OK120420020030_00
001	Latitude 35° 58' 49.105" N; Longitude 96° 0' 30.994" W	Tulsa	0.0090	Coal Creek	OK120420020030_00
002	Latitude 35° 58' 49.818" N; Longitude 96° 0' 25.045" W	Tulsa	Varies	Coal Creek	OK120420020030_00
003	Latitude 35° 58' 50.022" N; Longitude 96° 0' 19.325" W	Tulsa	Varies	Coal Creek	OK120420020030_00
004	Latitude 35° 58' 44.318" N; Longitude 96° 0' 11.542" W	Tulsa	Varies	Coal Creek	OK120420020030_00
005	Latitude 35° 58' 34.406" N; Longitude 96° 0' 32.715" W	Tulsa	Varies	Coal Creek	OK120420020030_00
006	Latitude 35° 58' 40.253" N; Longitude 96° 0' 33.667" W	Tulsa	Varies	Coal Creek	OK120420020030_00
007	Latitude 35° 58' 39298" N; Longitude 96° 0' 25.045" W	Tulsa	Varies	Coal Creek	OK120420020030_00

The designated uses of Coal Creek downstream from Sec. 35, T18N, R12E, IM, Oklahoma waterbody ID, OK120420020030_00, are

- PPWS - Public and Private Water Supply beneficial use
- WWAC - Warm Water Aquatic Community subcategory
- PBCR - Primary Body Contact beneficial use
- Agriculture/Livestock and Irrigation and
- Aesthetic Standards.

III. PROCESS AND DISCHARGE DESCRIPTION

The parent company, Explorer Pipeline, moves primarily gasoline, distillates, and diluent from the Gulf Coast to the Chicago area and points in between. Glenpool tank farm consists of pipeline breakout tanks to allow scheduling of the movement of product from the 28-inch pipeline to the 24-inch pipeline.

As described in the application, the facility has 7 outfalls, with six outfalls discharging only stormwater collected within tank dikes. The collected stormwater is directed to a holding pond where water is observed for the presence of sheen prior to discharge. If no sheen is visible, water is discharged and samples are collected and analyzed.

Outfall No. 001 discharges stormwater as well as treated contact water. Contact water enters system entrained in the refined petroleum product. Due to the temperature difference from origin in the Gulf Coast to the breakout tanks in Glenpool, the entrained water separates from the refined petroleum products and is then drawn from the tanks and routed to the treatment process.

Contact water is pumped to an oil/water separator system (OWS); hydrocarbons are sent to a transmix tank and water is sent to the air stripper system. After treatment through air stripper, water goes to a holding tank, where it is held pending analytical testing. If water meets discharge quality, it is released to an evaporation/aeration pond. If the water in the holding tank does not meet discharge quality criteria, the water is returned to the air stripper for retreatment until the water meets the discharge quality criteria. The treated water in the evaporation and aeration pond is only discharged when a significant precipitation occurs.

For Outfalls 002 through 007, stormwater collected within tank dikes is directed to a holding pond. The water is observed for the presence of sheen prior to discharge. If no sheen is visible, water is discharged and samples collected and analyzed.

Based on the discharge description above, an internal monitoring point, Outfall 101 for contact water is established prior to mixing with the stormwater. The facility estimates that the maximum 30-day average discharge flow of the contact water is 3.68×10^{-7} cfs (2.374×10^{-7} MGD) and the long-term average flow is 1.382×10^{-7} cfs (8.916×10^{-8} MGD). The discharge location for internal Outfall 101 is as follows:

Latitude 35º 58’ 47.6076” N; Longitude 96º 0’ 31.9716” W

EPA notes that the effluent discharged from the OWS does not necessarily correlate to specific rainfall events due to storage of stormwater and detention time in the OWS prior to discharge. In addition, samples collected only in association with a precipitation event may not provide data representative of discharges from the Terminal since the effluent includes non-stormwater discharges. Therefore, the Draft Permit requires effluent sampling during periods of discharge from the OWS and not necessarily during periods associated with a specific precipitation event. The Permittee must document the measures and methods used to control flow through the stormwater treatment system in its Stormwater Pollution Prevention Plan (SWPPP).

Table1: Internal Outfall 101 – Contact Water

The table below shows the facility’s pollutant concentration sent in an additional information dated April 18, 2017.

Parameter	**Max Concentration, mg/L unless noted**	**Average Concentration, mg/L unless noted**
Flow, MGD	2.374×10^{-7}	8.916×10^{-8} MGD
Benzene	0.05	0.01502
Toluene	0.05	0.0168
Ethyl Benzene	0.058	0.02855

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Xylene	0.178	0.0343

Table 2: Discharge Characteristics for Outfall 001

The table below shows facility's pollutant concentrations contained in the NPDES application.

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Flow, MGD	0.0297	0.0090
pH, su	8.46	8.46
BOD	5.00	5.00
TSS	221	221
COD	24.2	24.2
TOC	12	12
Ammonia	<0.250	<0.250
Oil & Grease	<5.1	<5.1
Temperature, winter, º F	47	46
Temperature, summer, º F	75	73
Chloride	12.9	10.76
Sulfate	99.2	84.44
Total Dissolved Solids	309	274.57
Aluminum	1.65	0.94
Lead	0.00714	0.00714
Zinc	0.0275	0.0198

Table 3: Discharge Characteristics for Outfall 002 -Stormwater

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Flow, MGD	Varies	Varies
pH, su	8.22	8.22
BOD	5.00	5.00
TSS	49	49
COD	21.1	21.1
TOC	15	15
Ammonia	<0.250	<0.250
Oil & Grease		

Table 4: Discharge Characteristics for Outfall 003 - Stormwater

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Flow, MGD	Varies	Varies
pH, su	7.88	7.88
BOD	4.00	4.00
TSS	36.0	36.0

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
COD	26.2	26.2
TOC	11	11
Ammonia	<0.250	<0.250

Table 5: Discharge Characteristics for Outfall 004 - Stormwater

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Flow, MGD	Varies	Varies
pH, su	7.61	7.61
BOD	6.00	6.00
TSS	293	293
COD	54.5	54.5
TOC	11	11
Ammonia	<0.250	<0.250

Table 6: Discharge Characteristics for Outfall 005 - Stormwater

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Flow, MGD	Varies	Varies
pH, su	8.27	8.27
BOD	<3.00	<3.00
TSS	79.0	79.0
COD	13.6	13.6
TOC	9	9
Ammonia	<0.250	<0.250

Table 7: Discharge Characteristics for Outfall 006 - Stormwater

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Flow, MGD	Varies	Varies
pH, su	8.27	8.27
BOD	<3.00	<3.00
TSS	79.0	13.6
COD	13.6	26.2
TOC	9	9
Ammonia	<0.250	<0.250

Table 8: Discharge Characteristics for Outfall 007 - Stormwater

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Flow, MGD	Varies	Varies
pH, su	7.55	7.55
BOD	6.00	6.00

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
TSS	43.0	43.0
COD	12.9	12.9
TOC	13	13
Ammonia	<0.250	<0.250

IV. REGULATORY AUTHORITY/PERMIT ACTION

In November 1972, Congress passed the Federal Water Pollution Control Act establishing the NPDES permit program to control water pollution. These amendments established technology-based or end-of-pipe control mechanisms and an interim goal to achieve "water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water;" more commonly known as the "swimmable, fishable" goal. Further amendments in 1977 of the CWA gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry and established the basic structure for regulating pollutants discharges into the waters of the United States. In addition, it made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions. Regulations governing the EPA administered NPDES permit program are generally found at 40 CFR §122 (program requirements & permit conditions), §124 (procedures for decision making), §125 (technology-based standards) and §136 (analytical procedures). Other parts of 40 CFR provide guidance for specific activities and may be used in this document as required.

It is proposed that the permit be issued for a 5-year term following regulations promulgated at 40 CFR 122.46(a). The facility was previously covered under the Petroleum Storage Tank General Permit, OKG340000. EPA terminated the General Permit in September 30, 2015, and dischargers needing to continue coverage under the NPDES permit program were required to file an individual NPDES Permit application. As a result of the termination, the facility applied for an individual permit. An NPDES Application for a Permit to Discharge (Form 1) and Form 2C were received on June 17, 2016, and was deemed administratively complete on May 8, 2017. Additional permit application information was received on May 15, 2017, May 5, 2017, April 28, 2017, April 27, 2017, April 18, 2017, and February 27, 2017.

V. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS

A. OVERVIEW of TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITION FOR PERMIT ISSUANCE

Regulations contained in 40 CFR §122.44 NPDES permit limits are developed that meet the more stringent of either technology-based effluent limitation guidelines, numerical and/or narrative water quality standard-based effluent limits, on best professional judgment (BPJ) in the absence of guidelines, and/or requirements pursuant to 40 CFR 122.44(d), whichever are more stringent. Technology-based effluent limitations are established in the proposed draft permit for BTEX, Benzene, Toluene, Ethyl benzene, TOC, pH, TSS, Oil and grease. Water quality-based effluent limitations are established in the proposed draft permit for pH and Lead.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

Regulations promulgated at 40 CFR §122.44 (a) require technology-based effluent limitations to be placed in NPDES permits based on ELGs where applicable, on BPJ in the absence of guidelines, or on a combination of the two. In the absence of promulgated guidelines for the discharge, permit conditions may be established using BPJ procedures. EPA establishes limitations based on the following technology-based controls: BPT, BCT, and BAT. These levels of treatment are:

BPT - The first level of technology-based standards generally based on the average of the best existing performance facilities within an industrial category or subcategory.

BCT - Technology-based standard for the discharge from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and O&G.

BAT - The most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. BAT effluent limits represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

Effluent Limitations

There are no published ELG's for this type of activity. Permit limits are proposed based on BPJ. Since discharge events at Glenpool Breakout Station are batch discharges of short term duration, the draft permit will not propose mass limits since flow is variable and intermittent. Concentration limits will be protective of the stream uses. These limitations are based on the BPJ of the permit writer and are consistent with oil & gas industry.

VOCs such as benzene, toluene, ethyl benzene, and the three xylene compounds (i.e., total xylenes) (BTEX) are found at relatively high concentrations in gasoline and light distillates including diesel fuel. BTEX concentrations decrease in the heavier grades of petroleum distillate products such as fuel oils. Studies show that benzene is an appropriate BAT parameter representing the toxic hydrocarbons which may be present in contact wastewater discharges. The additional information submitted by the permittee shows that the average concentration of benzene measured at the air stripper effluent prior to mixing with stormwater is 15.02 µg/l. BAT is selected as 50 µg/L. The ODEQ WQS standard for Benzene is 0.022 mg/l (22 µg/l). Since the ODEQ WQS is more stringent than the BAT, benzene limit of 22 µg/l is proposed in the draft permit.

Information contained in the application showed that the ethylbenzene, toluene, and xylene are present at air stripper effluent. There is no known BAT for these pollutants. The ODEQ WQS for ethylbenzene and toluene are 530 µg/l and 875 µg/l respectively, which are also proposed as the effluent limits for these pollutants. Xylene does not have an ODEQ WQS.

Benzene, toluene, ethylbenzene, and xylenes are among the hydrocarbons typically found in water contaminated by liquid or gaseous petroleum hydrocarbons. The daily maximum level of BTEX representing BAT is 100µg/l. The ODEQ does not have BTEX standard. As a result, a BTEX daily maximum limit of 100µg/l is proposed in the draft permit.

Polycyclic Aromatic Hydrocarbons (PAHs) are a group of organic compounds that form through the incomplete combustion of hydrocarbons and are present in petroleum derivatives and residuals. Discharge of these products can introduce PAHs into surface water where they may volatilize, photolyze, oxidize, biodegrade, bind to suspended particles or sediments, or accumulate in aquatic organisms (with bioconcentration factors often in the 10-10,000 range). In soils, PAHs may also undergo degradation, accumulation in plants, or transport via groundwater. In an estuarine environment, volatilization and adsorption to suspended sediments with subsequent deposition are the primary removal processes for medium and high molecular weight PAHs. Several PAHs are well known animal carcinogens, while others can enhance the response of the carcinogenic PAHs. There are 16 PAH compounds identified as priority pollutants under the CWA (see Appendix A to 40 CFR §423). Group I PAHs are comprised of seven known animal carcinogens. They are: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Group II PAHs are comprised of nine priority pollutant PAHs which are not considered carcinogens, but which can enhance or inhibit the response of the carcinogenic PAHs. They are: acenaphthene, acenaphthylene, anthracene, benzo(g,h,i)perylene, fluoranthene, fluorene, naphthalene, phenanthrene, and pyrene.

Total Petroleum Hydrocarbons (TPH) measures the total concentration of all petroleum related hydrocarbon within a specified carbon range. An aggregate measurement of the hydrocarbon compounds can also serve as an indicator of overall relative pollutant concentration and as an indicator for assessing water quality impacts.

Limitations for Benzene, Toluene, Ethylbenzene, BTEX, pH, TPH and PAH are proposed for internal Outfall 101. A daily maximum limits for PAH of 0.010 mg/l; and TPH of 15 mg/l is established in the draft permit. These limitations are based on the nature of the treatment systems and is the best available technology economically achievable (BAT), based on the BPJ of the permit writer.

A daily maximum limitation for TOC of 50 µg/L for Outfall 001 is proposed in the draft permit. Narrative standards for oil, grease, or related residue have been placed in the proposed permit. A technology-based limit of 15 mg/l for Oil and Grease for Outfall 001 should assure that the narrative criterion is maintained. A pH of 6.5 to 9.0 s.u. is proposed at Outfall 001. The proposed limitation for TSS is 45 mg/l maximum at Outfall 001.

Stormwater has been identified by the permittee as a component of the discharge through Outfalls 001 to 007. Stormwater pollution prevention requirements are established in the proposed permit.

It is proposed that the facility to conduct an annual inspection of the facility to identify areas contributing to the storm water discharge and identify potential sources of pollution which may affect the quality of storm water discharges from the facility.

The proposed permit requires the permittee to maintain a site map. The site map shall include all areas where storm water may contact potential pollutants or substances which can cause pollution. It is also proposed that all spilled product and other spilled wastes be immediately cleaned up and properly disposed. The permit prohibits the use of any detergents, surfactants or other chemicals from being used to clean up spilled product. Additionally, the permit requires all waste fuel, lubricants, coolants, solvents or other fluids used in the repair or maintenance of vehicles or equipment be recycled or contained for proper disposal. All diked areas surrounding

storage tanks or stormwater collection basins shall be free of residual oil or other contaminants so as to prevent the accidental discharge of these materials in the event of flooding, dike failure, or improper draining of the diked area. The permittee shall amend the SWP3 whenever there is a change in the facility or change in operation of the facility.

Outfalls 002 to 007 are stormwater Outfalls. The Daily Maximum concentrations are based on BPJ, using the previous State and NPDES permits. The daily maximum concentrations for TOC, Oil & grease and TSS are 50 mg/L,15 mg/L, and 45 mg/L respectively.

BPT, BAT and BCT Concentration Effluent Limitations – Outfalls 002 Through 007

Regulated Pollutants	**Concentration Limits (mg/l)**	
	Maximum Daily	Monthly Average
TOC	50	N/A
Oil and Grease	15	N/A
Total Suspended Solids	45	N/A

C. WATER QUALITY BASED LIMITATIONS

1. General Comments

The Clean Water Act in Section 301 (b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at 40 CFR 122.44(d) state that if a discharge poses the reasonable potential to cause an in-stream excursion above a water quality criterion, the permit must contain an effluent limit for that pollutant. If the discharge poses the reasonable potential to cause an in-stream violation of narrative standards, the permit must contain prohibitions to protect that standard.

The narrative and numerical stream standards are provided in OWQS, as amended (OAC 785:45), and implementation criteria contained in OACs 785:46 and 252:690, promulgated by the OWRB, effective as of September 11, 2015, and Department of Environmental Quality (DEQ), respectively. This is to ensure that no point-source will be allowed to discharge any wastewater which: (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical state water quality standard; (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation which threatens human health.

2. Reasonable Potential

EPA develops draft permits to comply with State WQS, and for consistency, attempts to follow OWQS, OWQS implementation criteria in OAC 785:46 and OAC 252:690, and the CPP document where appropriate. ODEQ develops WQBELs following both a 1991 EPA Region 6 approach and the method prescribed in the 1991 EPA Technical Support Document for water Quality-Based Toxics Control, EPA/505/2-90-001 (“TSD”). However, EPA is bound by the State’s WQS, not State guidance, including the OWQSIP, in determining permit decisions. EPA performs its own technical and legal review for permit issuance, to assure compliance with all applicable State and Federal requirements, including State WQS, and makes its determination based on that review.

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 the regulatory mixing zone equations defined in OAC 785:46. The computed instream concentrations are then compared with the applicable criteria to determine whether RP is exhibited. 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 and its associated daily maximum limitations are established in the draft permit for each pollutant requiring such limitations.

3. Reasonable Potential-Calculations

a. Toxics

Regulatory receiving water flows are established in OAC 785:46. Effluent regulatory flows, as well as regulatory effluent and background pollutant concentrations are established in OAC 252:690, Subchapter 3.

The definitions and values for these terms are as follows:

a. Effluent and Upstream Receiving Water Regulatory Flows

$Q_{e(30)}$ For an industrial discharge, this is the high 30-day average effluent flow occurring during the two year period or record.

$Q_{e(LTA)}$ Long-term average effluent flow rate. This value is used in the human health and agriculture screens.

$Q_{u(7Q2)}$ Upstream 7Q2 flow rate. This is the annual 7-day, 2-year low flow of the receiving stream. Where flow data published in the USGS publication, Statistical Summaries of Streamflow Records in Oklahoma Through 1999 (WRIR 02-4025), R.L. Tortorelli, is available, minor adjustments for known upstream or downstream perennial flows, as appropriate, may be utilized to estimate the 7Q2 for a specific location upstream or downstream of the USGS gaging station. If streamflow is intermittent, if USGS 7Q2 data is not available, or if the applicant has not developed a site-specific 7Q2, a default value of 1 cfs (0.6463 mgd) is assumed.

$Q_{u(LTA)}$ Upstream long-term average flow rate. This is the mean annual flow of the receiving stream. Where flow data published in the USGS publication, Statistical Summaries of Streamflow Records in Oklahoma Through 1999 (WRIR 02-4025), R.L. Tortorelli, is available, minor adjustments for known upstream or downstream perennial flows, as appropriate, may be utilized to estimate the mean annual flow for a specific location upstream or downstream of the USGS gaging station. If published mean annual flow data is not available, it may be approximated by multiplying the receiving water's drainage area at the point of discharge by the mean annual runoff per unit area published in the CPP.

$Q_{u(STA)}$ Upstream short-term average flow rate (used only in the Agriculture sample standard (SS) screen.

$Q_{u(STA)} = 0.68 \times Q_{u(LTA)}$.

Outfall 001 is located on Coal Creek (Intermittent). Coal Creek is Oklahoma Segment OK120420020030_00 and is a tributary of Polecat Creek located approximately 3 miles downstream of the outfall. Coal Creek is in the Middle Arkansas River Basin, basin number 2-4.

CRITICAL FLOWS

Outfall 001 has a Contributing Area of 6.28 Square Miles.

Q(u)(7Q2) = 1.0 cfs (default for streams in Oklahoma without data)
Q(u)(LTA) = CA x Runoff Coefficient = 6.28 x 0.5 = 3.14 cfs
Q(u)(STA) = 0.68 x Q(u)(LTA) = 0.68 x = 2.14 cfs

Where Q(u)(7Q2) is the upstream 7Q2 flow rate, Q(u)(LTA) is the upstream long-term average flow rate, and Q(u)(STA) is the short-term average flow rate.

The long-term average effluent flow rate is Q(e)(LTA) = 0.014 cfs (0.0090 MGD); the high thirty day average flow rate is Q(e)(30) = 0.046 cfs (0.02970 MGD).

b. Dilution Ratios (Q*)

Q* Ratio of effluent flow to stream flow, also known as dilution capacity. The Q* ratios for industrial dischargers, as well as their values, are defined in the following table.

Q* Values – Outfall 001

Critical Dilutions

Q Dilution Ratio	WQ Screen	Implementation Reference	Value
Q(e)(30) / Q(u)(7Q2)	Temp, Chronic Toxicity	OAC 785:46-11-3	**0.02970**
Q(e)(LTA) / Q(u)(LTA)	Human Health	OAC 785:46-9-3	**1.00000**
Q(e)(30) / Q(u)(LTA)	Raw Water	OAC 785:46	**3.30000**
Q(e)(30) / Q(u)(STA)	AG SS	OAC 785:46	**0.04595**
Qe(LTA) / Qu(LTA,AG	Ag YMS	OAC 785:46	**0.00947**

c. Characterization of Pollutant Effluent Concentrations

C_{mean} Either the geometric mean or arithmetic average of an effluent data set, depending on the nature of the effluent data set. C_{mean} is calculated as a geometric mean if the full effluent data set for a pollutant is available, it consists of at least ten data points, and at least five of those data points are measurable. Otherwise, C_{mean} is calculated as an arithmetic average from the available data. Where a data set is unavailable, a long-term average

submitted in an application (Form 2C) is assumed to be an arithmetic average (OAC 785:46-9-5(b)). If only one data point is available, it represents C_{mean}.

C_{max} The highest concentration in an effluent data set. If only one data point is available, it represents C_{max}.

C_{95} The 95th percentile effluent concentration of a pollutant for the purpose of assessing whether water quality-based effluent limitations are required for that pollutant. 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:

$$C_{95} = \mathrm{EXP}\left(\ln(x)_{avg} + 1.645 \times s_{\ln(x)}\right)$$

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

The term, $\ln(x)_{avg}$, represents the arithmetic average of the set of log-transformed data points.

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

The term, $s_{\ln(x)}$, represents the standard deviation of the set of log-transformed data points.

If less than 10 effluent data points are available, C_{95} must be estimated from the available data. In this case, $C_{95} = C_{mean} \times 2.135$.

$C_{95(M)}$ 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 12 data points. $C_{95(M)}$ is calculated, assuming a log-normal distribution, according to the following equation:

$$C_{95(M)} = C_{max} \times RPF_{95(M)}$$

$RPF_{95(M)}$ 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). $RPF_{95(M)}$ is calculated, assuming a log-normal distribution, according to the following equation:

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

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 the resulting value of $RPF_{95(M)}$ for values of N from 1 to 9 are shown in the following table.

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
$RPF_{95(}$	6.199	3.795	3.000	2.585	2.324	2.141	2.006	1.898	1.811

CV Coefficient of variation of a data set. CV is defined as the standard deviation of a data set divided by its arithmetic average.

$$CV = \frac{s_x}{C_{avg}}$$

Where fewer than 10 data points are available, a default CV value of 0.6 is assumed.

Values of C_{95} , $C_{95(M)}$ and CV are summarized for quantifiable pollutants with applicable water quality criteria in the following table.

C_e Effluent concentration. The geometric mean reported on Form 2C. If only one value is available, it will be considered to be the geometric mean. If only average values are available, the arithmetic mean of the average values will be used.

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

Pollutants	No. of Data Points (N)	Concentration (µg/l unless otherwise specified)				CV [1]
		C_{mean}	C_{95}	C_{max}	$C_{95(M)}$	
Lead	3	7.14	15.24	7.14	21.42	---
Zinc	3	19.8	42.27	27.50	82.50	---
Chloride, mg/L	3	10.76	22.97	12.9	38.70	---
Sulfate, mg/L	3	84.44	180.28	99.2	297.60	---
Todal Dissolved Solids, mg/L	3	274.57	586.21	309	927.00	---

[1] A coefficent of variation (CV) is calculated only where an effluent data set consists of at least ten data points, of which at least five must be

measurable. A CV value of 0.6 is assumed where a data set is of insufficient size to calculate a CV directly (see OAC 252:690-3-7).

T_a Ambient receiving water temperature in °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.

d. Pollutant Background Concentrations

C_u & C_b **Cb** Upstream or background concentration of a pollutant. Specific data is used where available. Where such data is not available, and in streams where Qu(7Q2) = 0 in the absence of known upstream toxicants, background concentrations are assumed to be zero. For the agriculture screens, Cb 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 Cb = 2* YMS – SS. Background levels are described in the following table.

Background Concentrations of Pollutants Present in Effluent – Outfall 001

Pollutants	No. of Data Pts (N)	Background Conc (C_b) (mg/l unless otherwise specified)	Data Source
Chlorides	3	513	Calculated [1]
Sulfates	3	116	Calculated [1]
Total Dissolved Solids	3	1124	Calculated [1]

1 Since site-specific background data is not available, background concentration is calculated from segment-averaged YMS and SS criteria in accordance with OAC 252-690-3-16(a).

e. Other Applicable Terminology

$C_{criterion}$ Numerical water quality criterion for a specific pollutant. For some pollutants, aquatic toxicity criteria are pH – or hardness-dependent. In such cases, in accordance with OAC 785:46-5-8, site-specific pH or hardness data, if available, may be used. If site-specific pH or hardness data is not available, the segment averaged pH or hardness from OAC 785:46, Appendix B, is used. Where a specific pollutant screen exhibits reasonable potential, $C_{criterion}$ is used to calculate the wasteload allocation (WLA). Criteria applicable to the discharges from this facility are as follows:

- Fish and wildlife propagation (F&WP/WWAC) use

- C_A: Acute toxicity criterion
- C_C: Chronic toxicity criterion

- Fish consumption use
  - C_{FF}: Human health criterion for the consumption of fish flesh

- Public and private water supply (PPWS) use
  - C_{FFW}: Human health criterion for the consumption of fish flesh and water
  - C_{RAW}: Raw water column criterion

- Agriculture use
  - C_{YMS}: Yearly mean standard
  - C_{SS}: Sample standard

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

Other Toxic Pollutants

a.1 Toxicity from Halogenated Oxidants

Based on the permit application, halogenated oxidants are not present in the discharge from any outfalls. Thus, neither effluent limits nor monitoring requirements for halogenated oxidants are established in the permit.

a.2 Ammonia Toxicity

Based on the permit application, ammonia was not detected in the discharge from any of the outfalls. As a result, neither effluent limits nor monitoring requirements for ammonia toxicity are established in the draft permit.

b. pH

The daily minimum and daily maximum permit limits of 6.0 standard units to 9.0 standard units on similar permits are developed by other EPA Regions and States. OAC 785:45-5-12(f)(3) states, "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 water quality–based daily minimum pH limit of 6.5 is more stringent than the technology-based daily minimum pH limit of 6.0 standard units. As a result, the Oklahoma Water Quality Based limits of 6.5 standard units to 9.0 standard units are established in the proposed permit for Outfall 001; and a pH limit of 6.0 to 9.0 is proposed at internal Outfall 101.

c. Narrative Limitations

1. Aesthetic Standards

OWQS, OAC 785:45-5-12(f) (4) states that narrative protection for aesthetic standards will propose that surface waters shall be maintained so that oil, grease, or related residue will not produce a visible film or globules of grease on the surface or coat the banks or bottoms of the

watercourse; or cause toxicity to man, aquatic life, or terrestrial life. A narrative condition prohibiting the discharge of any visible sheen of oil or globules of oil or grease will be included in the proposed permit. In addition, the technology-based limit of 15 mg/l for Oil and Grease should assure that the narrative criterion is maintained.

A narrative condition prohibiting the discharge of any visible sheen of oil or globules or oil or grease will be included in the draft permit for Outfall 101. Numerical limits are already established for Outfalls 002 through 007.

d. Public and Private Water Supplies (PPWS) (OAC 785:45-5-10)

The discharge water should not contain substances listed in Raw Water Numerical Criteria (785:45-5-10(1)) and Water Column Criteria to protect for the consumption of fish, flesh and water (785:45-5-10(6)) at levels which would have reasonable potential to violate numerical criteria.

Based on the permit application information, the average concentration of benzene measured at the air stripper effluent prior to mixing with stormwater is 15.02 µg/l. The ODEQ WQS standard for Benzene is 0.022 mg/l (22 µg/l). BAT is selected as 50 µg/L. Since the ODEQ WQS is more stringent than the BAT, benzene limit of 22 µg/l is proposed in the draft permit. Similarly, information contained in the application showed that the concentration of ethylbenzene and toluene are respectively 28.55 µg/l and 16.8 µg/l respectively. Since there is almost a zero flow at internal Outfall 101, an end- of- pipe limit is proposed for Benzene, ethylbenzene and toluene at internal Outfall 101. The ODEQ WQS for ethylbenzene and toluene are 530 µg/l and 875 µg/l respectively, which are also proposed as the effluent limits for these pollutants. There is no known BAT for these pollutants.

Since PPWS is a designated use, Raw water & Water Column Criteria for the consumption of Human Health Fish Flesh & Water (FFW) apply. The Water Quality Screen performed showed that Lead has reasonable potential to exceed Oklahoma WQS at Outfall 001. The limiting criterion is FFW. The draft permit establishes a monthly average and daily maximum limits for Lead of 10 µg/L and 18.94 µg/L respectively. Since flow is intermittent, concentration only limits are protective of stream uses. Mass limits will not be established. These limitations are based on the BPJ of the permit writer and are consistent with oil & gas industry.

e. Fish and Wildlife Propagation (OAC 785:45-5-12) / Warm Water Aquatic Community (Arkansas River and the Coal Creek)

The discharge water should not contain substances listed in Toxic Substances (785:45-5-12(f)(6)) and Water Column Criteria to protect for the consumption of fish, flesh and water (785:45-5-10(6)) at levels which would have reasonable potential to violate numerical criteria.

Warm Water Aquatic Community subcategory being one of the designated use means a subcategory of the beneficial use category "Fish and Wildlife Propagation" where the water quality and habitat are adequate to support climax fish communities.

e.1. DO and DO-Demanding Substances

According to OAC 785:45-5-12(f)(1)(A), dissolved oxygen (DO) criteria are designed to protect the diverse aquatic communities of Oklahoma. Based on the nature of the discharge, the

wastewater is not expected to contain oxygen demanding substances at levels which would have reasonable potential to violate numerical criteria. Therefore, no permit limit or monitoring requirement is imposed for this criterion.

f. Agriculture/Livestock and Irrigation (OAC 785:45-5-13)

Agriculture use criteria are determined in accordance with OAC 785:45-5-13 which states that the surface waters of the State shall be maintained so that toxicity does not inhibit continued ingestion by livestock or irrigation of crops. Agriculture use criteria are implemented according to procedures in OAC 785:46, Subchapter 9, OAC 252:690-3-79 through 3-85, and Chapter 3 of the CPP.

f.1. Determination of Reasonable Potential and Wasteload Allocation

OAC 785:46-9-5 defines the reasonable potential equation for a pollutant's instream concentration C_d after complete mixing as follows:

$$C_d = \frac{(C_{95}\, Q^* + C_b)}{(1 + Q^*)}$$

(f.1.1) Yearly Mean Standard

(a) Outfall 001

The results of the YMS screen for Outfall 001, using Q* = 0.00947, are shown in the following table.

Results of YMS Screen for Outfall 001
(concentrations in mg/l unless otherwise specified)

Pollutant	**C_{mean}**	**C_{95}**	**C_b**	**C_d**	**C_{YMS}**	**Default Criteria Floor**	**$C_d > C_{YMS}$?***	**WLA_{YMS}**
Chloride	10.76	22.97	513	508.5	719	250	No	N/A
Sulfate	84.44	180.28	116	117.7	147	250	No	N/A
Total Dissolved Solids	274.57	586.21	1124	1122.2	1496	700	No	N/A

* To determine whether C_d> Criterion, the Criterion is the higher of the YMS Criterion or the default criterion floor.

As shown in the above table, there is no reasonable potential for any of the pollutants to exceed the State water quality standards.

(b) Outfalls 002 through 007

Based on the permit application, discharges of storm water through these outfalls are intermittent and in amounts that would have no or insignificant effects on the receiving streams; therefore, it is the BPJ of the permit writer that chlorides, sulfates and total dissolved solids are not present at concentrations that would show a reasonable potential to exceed the State water quality standards for this beneficial use.

(f.1.2) Sample Standard

(a) Outfall 001

The results of the SS screen for Outfall 001, using Q* = 0.04595, are shown in the following table:

Results of SS Screen for Outfall 001
(concentrations in mg/l unless otherwise specified)

Pollutant	**C_{mean}**	**C_{95}**	**C_b**	**C_d**	**C_{SS}**	**Default Criteria Floor**	**$C_d > C_{SS}$?****	**WLA_{SS}**
Chloride	10.76	22.97	513	491.5	925	250	No	N/A
Sulfate	84.44	180.28	116	118.8	178	250	No	N/A
Total Dissolved Solids	274.57	586.21	1124	1100.4	1868	700	No	N/A

** To determine whether C_d> Criterion, the Criterion is the higher of the SS Criterion or the default criterion floor.

As shown in the above table, there is no reasonable potential for any of the pollutants to exceed the State water quality standards.

(b) Outfalls 002 Through 007

Based on the permit application, discharges of storm water through these outfalls are intermittent and in amounts that would have no or insignificant effects on the receiving streams; therefore, it is the BPJ of the permit writer that chlorides, sulfates and total dissolved solids are not present at concentrations that would show a reasonable potential to exceed the State water quality standards for this beneficial use.

g. Primary Body Contact Recreation (OAC 785:45-5-16) (a) & (b).

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 to human beings.

The discharge water should not contain coliform bacteria, Escherichia coli, and Enterococci at significant levels. Since this facility does not have sanitary wastewater, bacteria is not expected in the effluent. As a result, there is no reasonable potential to violate water quality standards for this beneficial use.

h. Temperature (Arkansas River and Coal Creek)

1. Criteria and Implementation

Temperature criteria is determined in accordance with OAC 785:45-5-12(e)(2)(A), which states that 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 outside the mixing zone.

Temperature criteria is implemented in accordance with OAC 785:46-11-2(b)(1), which states that the temperature criterion for Habitat Limited Aquatic Community and/or Warm Water Aquatic Community, T_c, is the critical temperature plus 2.8°C outside the mixing zone.

$$T_c = T_{critical} + 2.8\ °C,$$

In the absence of data and in accordance with OAC 785:46-11-2(b)(2), $T_{critical}$ is 32.24°C.

2. Determination of Reasonable Potential and Wasteload Allocation

Temperature mixing zone reasonable potential is determined in accordance with OAC 785:46-11-6 based on the dilution capacity of the receiving stream as:

(A) $\Delta T_{max} = [1.94Q^* \times (T_{95} - T_a)]/(1+Q^*)$, for $Q^* \leq 0.1823$

(B) $\Delta T_{max} = (T_{95} - T_a)/(6.17 - 15.51Q^*)$, for $0.1823 < Q^* < 0.33$

(C) $\Delta T_{max} = T_{95} - T_a$ for $Q^* \geq 0.33$

The dilution capacity, Q*, is determined in accordance with OAC 786:46-11-3, as $Q_{e(30)}/Q_{u(7Q2)}$. Q* = 0.02970.

(a) Outfall 001

The results of the temperature screen for Outfall 001, using Q* = 0.02970, are shown in the following table

Temperature Criterion – Outfall 001

T_{95}	T_a	Q*	ΔT_{max} (°C)	ΔT_{max} > 2.8°C	WLA (°C)
28.9	29.44	0.02970	-0.031	No	No

The above table shows that a temperature limitation is not necessary because $\mathbf{\Delta}T_{max}$ is less than the 2.8°C maximum temperature increase at the edge of the mixing zone and the mixing zone reasonable potential criterion is not exceeded.

(b) Outfall 002 Through 007

Because only storm water is discharghed, it is the BPJ of the permit writer that the discharges would not show any reasonable potential to exceed the State water quality standards for temperature criteria.

Solids and Foam

The prohibition of the discharge of floating solids or visible foam in other than trace amounts is established in the proposed permit. In addition, there shall be no discharge of visible films of oil, globules of oil, grease or solids in or on the water, or coatings on stream banks.

I. MONITORING FREQUENCY FOR LIMITED PARAMETERS

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity, 40 CFR §122.48(b), and to assure compliance with permit limitations, 40 CFR §122.44(i)(1). The monitoring frequencies are based on BPJ, taking into account the nature of the facility, the previous permit, and past compliance history.

Flow shall be estimated daily when discharging. pH, oil & grease, TSS, BTEX, benzene, ethylbenzene, toluene, TPH, PAH, TOC and lead shall be monitored daily when discharging, using grab sample.

J. WHOLE EFFLUENT TOXICITY LIMITATIONS

Biomonioring is the most direct measure of potential toxicity which incorporates both the effects of synergism of effluent components and receiving stream water quality characteristics. According to OAC 785:45-5-12(e)(6)(A), "Surface waters of the state shall not exhibit acute toxicity and shall not exhibit chronic toxicity outside the [chronic] mixing zone. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity.

Two types of WET tests are used to implement the narrative toxicity criteria: 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. The vertebrate species is *Pimephales promelas* (Fathead minnow-tested for survival and growth), and the invertebrate species are *Daphia pulex* (acute testing) and *Ceriodaphnia dubia* (chronic testing).

The facility discharges contact water which is pumped to an oil/water separator system and then to an air stripper for treatment. After treatment through air stripper, water goes to a holding tank. Because the treated water in the evaporation and aeration pond is only discharged when a significant precipitation occurs. As a result, biomonitoring requirements are established at Outfall 001, when discharge occurs.

In accordance with OAC 252:690-3-31, the type of WET test(s) required is based on the value of Q* ($Q_{e(30)}/Q_{u(7Q2)}$) as follows:

- Where $Q^* < 0.054$, acute testing only will be required.
- Where $Q^* > 0.33$, chronic testing only will be required.
- Where $0.054 \leq Q^* \leq 0.33$, both acute and chronic testing will be required.

Based on 252:690-3-31, acute testing is required since $Q^* < 0.054$ in streams. Q* is 0.02970. In accordance with OAC 252:690-3-35, the acute critical dilution (ACD) is 100%. Also in accordance with OAC 252:690-3-33, the dilution series for the acute test is as follows:100%, 75%, 56%, 42%, and 32%, plus a dilution water control. 100% is the critical dilution.

Outfall 001

The 2016 ODEQ Implementation Plan (OAC 252:690-3-41 and 42) directs the WET test to be an acute test using *Daphnia pulex* and *Pimephales promelas* at a once per 3 months' frequency for the first year of the permit. If all WET tests pass during the first year, the permittee may request a monitoring frequency reduction for the either or both test species for the following 2-5 years of the permit. The vertebrate species (*Pimephales promelas*) may be reduced to once per year. The invertebrate species (*Daphnia pulex*) may be reduced to twice per year. If any tests fail during that time the frequency will revert back to the once per three months' frequency for the remainder of the permit term. Both species shall resume quarterly monitoring at a once per three months' frequency on the last day of the permit.

The proposed permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests based on a 0.75 dilution series. These additional effluent concentrations shall be 32%, 42%, 56%, 75%, and 100%. The low-flow effluent concentration (critical low-flow dilution) is defined as 100% effluent.

Since the facility is a new discharger, there is no WET data; as a result, EPA will not perform reasonable potential analysis.

During the period beginning the effective date of the permit and lasting through the expiration date of the permit, the permittee is authorized to discharge from Outfall 001, the discharge to Coal Creek, in Oklahoma Waterbody Segment OK120420020030_00. Coal Creek is a tributary of Polecat Creek located approximately 3 miles downstream of the outfall and is in the Middle Arkansas River Basin. Discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	DISCHARGE MONITORING	
	30-DAY AVG MINIMUM	48-Hr. MINIMUM
Whole Effluent Toxicity Testing (48 Hr. Static Renewal) 1/		
Daphnia pulex	REPORT	REPORT
Pimephales promelas	REPORT	REPORT

EFFLUENT CHARACTERISTIC	MONITORING REQUIREMENTS	
	FREQUENCY	TYPE
Whole Effluent Toxicity Testing (48 Hr. Static Renewal) 1/		
Daphnia pulex	1/Quarter	24-Hr. Composite
Pimephales promelas	1/Quarter	24-Hr. Composite

FOOTNOTES

1/ Monitoring and reporting requirements begin on the effective date of this permit. See Part II, Whole Effluent Toxicity Testing Requirements for additional WET monitoring and reporting conditions.

K. FINAL EFFLUENT LIMITATIONS

See the draft permit for limitations.

VI. FACILITY OPERATIONAL PRACTICES

A. WASTE WATER POLLUTION PREVENTION REQUIREMENTS

The permittee shall institute programs directed towards pollution prevention. The permittee will institute programs to improve the operating efficiency and extend the useful life of the treatment system.

B. OPERATION AND REPORTING

The permittee must submit Discharge Monitoring Report's (DMR's) quarterly, beginning on the effective date of the permit, lasting through the expiration date of the permit or termination of the permit, to report on all limitations and monitoring requirements in the permit.

Sufficiently Sensitive Analytical Methods (SSM)

The permittee must use sufficiently sensitive EPA-approved analytical methods (SSM) (under 40 CFR part 136 or required under 40 CFR chapter I, subchapters N or O) when quantifying the presence of pollutants in a discharge for analyses of pollutants or pollutant parameters under the permit. In case the approved methods are not sufficiently sensitive to the limits, the most SSM with the lowest method detection limit (MDL) must be used as defined under 40 CFR 122.44(i)(1)(iv)(A). If no analytical laboratory is able to perform a test satisfying the SSM in the region, the most SSM with the lowest MDL must be used after adequate demonstrations by the permittee and EPA approval.

VII. IMPAIRED WATER - 303(d) LIST AND TMDL

Wastewater discharges from the facility flow into Coal Creek, in Oklahoma Waterbody Segment OK120420020030_00. Coal Creek is a tributary of Polecat Creek located approximately 3 miles downstream of the outfall and is in the Middle Arkansas River Basin.

The receiving stream, OK120420020030_00, Coal Creek is not in the 2014 Oklahoma 303 (d) list of impaired waters. No additional requirements beyond the already proposed technology-based and/or water-quality based requirements are needed in the proposed permit.

VIII. ANTIDEGRADATION

The OWRB- OWQS, antidegradation policy, OAC 785:46, Subchapter 13, sets forth the requirements to protect designated uses through implementation of the State WQS. The limitations and monitoring requirements set forth in the proposed permit are developed from the State WQS and are protective of those designated uses. Furthermore, the policy sets forth the intent to protect the existing quality of those waters, whose quality exceeds their designated use. The permit requirements are protective of the assimilative capacity of the receiving waters, which is protective of the designated uses of that water.

There are no antidegradation restrictions listed in Appendix A of the OWQS for Polecat Creek, Coal Creek, and the Arkansas River to which the facility discharges. As a result, no further protection beyond the Tier1 level (maintenance and protection of designated uses, as herein described).

IX. ANTIBACKSLIDING

The proposed permit is consistent with the requirements and exemption to meet Antibacksliding provisions of the Clean Water Act, Section 402(o) and 40 CFR Part 122.44(i)(B), which state in part that interim or final effluent limitations must be as stringent as those in the previous permit, unless information is available which was not available at the time of permit issuance. Since this is a first time individual NPDES Permit for this discharge, antibacksliding does not apply.

X. ENDANGERED SPECIES

According to the most recent county listing available at US Fish and Wildlife Service (USFWS), Southwest Region 2 website, http://ecos.fws.gov/ipac/wizard/chooseLocation!prepare.action, five species are listed as endangered or threatened in Tulsa County. The listed species are least tern (*Sterna antillarum*), Red Knot (*Calidris canutus*), Piping Plover (*Charadrius melodus),* American burying beetle (*Nicrophorus americanus)*, and Northern Long-eared Bat. A description of the species and its effects to the proposed permit follows:

LEAST TERN (Sterna Antillarum)

The Least tern populations have declined due to habitat destruction by permanent inundation, destruction by reservoir releases, channelization projects, alterations of Natural River or lake dynamics resulting in vegetational succession of potential nesting sites, and recreational use of potential nesting sites. The interior least tern is known to use reaches of the North Canadian River, South Canadian River, and Red River in Oklahoma (USFWS 2011b). The species also occurs along the Red River in Bryan County, Oklahoma and Fannin County, Texas.

Issuance of this permit is found to have no impact on the habitat of this species, as none of the aforementioned listed activities is authorized by this permitting action.

RED KNOT (Calidris canutus)

Red Knot is a medium-sized shorebird and the largest of the "peeps" in North America, and one of the most colorful. It makes one of the longest yearly migrations of any bird, traveling 15,000 km (9,300 mile) from its Arctic breeding grounds to Tierra del Fuego in southern South America.

Their diet varies according to season; arthropods and larvae are the preferred food items at the breeding grounds, while various hard-shelled molluscs are consumed at other feeding sites at other times.

The Red Knot nests on the ground, near water, and usually inland. The nest is a shallow scrape lined with leaves, lichens and moss. Males construct three to five nest scrapes in their territories prior to the arrival of the females. The female lays three or more usually four eggs, apparently laid over the course of six days. Both parents incubate the eggs, sharing the duties equally. The incubation period last around 22 days.

The birds have become threatened as a result of commercial harvesting of horseshoe crabs in the Delaware Bay which began in the early 1990s. Delaware Bay is a critical stopover point during spring migration; the birds refuel by eating the eggs laid by these crabs (with little else to eat in the Delaware Bay).

PIPING PLOVER (Charadrius melodus)

A small plover has wings approximately 117 mm; tail 51 mm; weight 46-64 g (average 55 g); length averages about 17-18 cm. Inland birds have more complete breast band than Atlantic coast birds. The nonbreeding plovers lose the dark bands. In Laguna Madre, Texas, non-breeding home ranges were larger in winter than in fall or spring. The breeding season begins when the adults reach the breeding grounds in mid- to late-April or in mid-May in northern parts of the range. The adult males arrive earliest, select beach habitats, and defend established territories against other males. When adult females arrive at the breeding grounds several weeks later, the males conduct elaborate courtship rituals including aerial displays of circles and figure eights, whistling song, posturing with spread tail and wings, and rapid drumming of feet. The plovers defend territory during breeding season and at some winter sites. Nesting territory may or may not contain the foraging area. Home range during the breeding season generally is confined to the vicinity of the nest. Plovers are usually found in sandy beaches, especially where scattered grass tufts are present, and sparsely vegetated shores and islands of shallow lakes, ponds, rivers, and impoundments.
Food consists of worms, fly larvae, beetles, crustaceans, mollusks, and other invertebrates. The plovers prefer open shoreline areas, and vegetated beaches are avoided. It also eats various small invertebrates. It obtains food from surface of substrate, or occasionally probes into sand or mud.

Destruction of habitat, disturbance and increased predation rates due to elevated predator densities in piping plover habitat are described as the main reasons for this species' endangered status and continue to be the primary threats to its recovery. The remaining populations, whether on the breeding or wintering grounds, mostly inhabit public or undeveloped beaches. These populations are vulnerable to predation and disturbance.

Research of available material finds that the primary cause for the population decreases leading to threatened or endangered status for these species is destruction of habitat. Issuance of this permit is found to have no impact on the habitat of this species, since the discharge is not expected to lead to the destruction of habitat.

AMERICAN BURYING BEETLE (*Nicrophorus americanus)*

American burying beetle (ABB) is a shiny black with hardened protective covers that meet in a straight line down the back. It has large orange-red marking on the raised portion of the pronotum, a feature shared with no other members of the genus in North America. The American burying beetle also has orange-red frons (a mustache-like feature) and a single orange-red marking on the top of the head (triangular in females and rectangular in males). Antennae are large, with notable orange clubs at the tips.

American burying beetle is nocturnal (active at night), lives for only one year, and typically reproduces only once. During the winter months when temperatures are below 60°F (15°C) American burying beetles bury themselves in the soil. When temperatures are above 60°F (15°C) they emerge from the soil and begin the mating and reproduction process.

The American burying beetle has been found in various types of habitat including oak-pine woodlands, open fields, oak-hickory forest, open grasslands, and edge habitat. Research indicates that American burying beetles are feeding habitat generalists. Data is lacking pertaining to American burying beetle reproductive habitat requirements, but species experts assume that they are more restrictive in selecting their reproductive habitat than feeding habitat.
The cause for the decline of this species could be a result of habitat fragmentation, habitat loss, carcass limitation, pesticides, disease, light pollution, or a combination of these factors. Species experts believe the primary causes of decline are habitat loss and fragmentation. The construction of the Project may cause the loss and disturbance of habitat used by the American burying beetle.

EPA has determined that the issuance of this permit is found to have no impact on the habitat of this species, since the discharge is not expected to lead to the destruction of habitat.

NORTHERN LONG-EARED BAT (Myotis septentrionalis)

The northern long-eared bat is a medium-sized bat about 3 to 3.7 inches in length but with a wingspan of 9 to 10 inches. As its name suggests, this bat is distinguished by its long ears, particularly as compared to other bats in its genus, Myotis, which are actually bats noted for their small ears (Myotis means mouse-eared).
The northern long-eared bat is found across much of the eastern and north central United States and all Canadian provinces from the Atlantic coast west to the southern Northwest Territories and eastern British Columbia. The species range includes 37 states.

White-nose syndrome, a fungal disease known to affect bats, is currently the predominant threat to this bat, especially throughout the Northeast where the species has declined by up to 99 percent from pre-white-nose syndrome levels at many hibernation sites. Although the disease has not yet spread throughout the northern long-eared bats entire range (white-nose syndrome is currently found in at least 25 of 37 states where the northern long-eared bat occurs), it continues to spread. Experts expect that where it spreads, it will have the same impact as seen in the Northeast.

No critical habitat has been designated for this species

The Environmental Protection Agency has evaluated the potential effects of issuance of this permit upon listed endangered or threatened species. After review, EPA has determined that the issuance of this permit will have "*no effect*" on listed threatened and endangered species nor will adversely modify designated critical habitat. EPA makes this determination based on the following:

1. The proposed permit establishes limits to meet the current state water quality standards for the area of discharge. The limits established in the proposed permit are protective and will have no impact on the habitats of this species. The permit includes limitations and/or monitoring requirements for pH, oil & grease, TSS, BETX (sum of benzene, ethyl benzene, toluene and xylene), benzene, ethylbenzene, toluene, PAH, TPH, TOC and lead. The proposed permit also includes biomonitoring requirements for *Daphnia pulex* and *Pimephales promelas.* These requirements are also consistent with the State of Oklahoma implementation guidance.

2. The issuance of this permit will have no effect above the environmental baseline on the listed species.

Based on information described above, EPA Region 6 has determined that discharges proposed to be authorized by the proposed permit will have no effect on the listed species in Tulsa County. The standard reopener clause in the permit will allow EPA to reopen the permit and impose additional limitations if it is determined that changes in species or knowledge of the discharge would require different permit conditions.

XI. HISTORICAL AND ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

The issuance of the permit should have no impact on historical and/or archeological sites since no construction activities are planned in the issuance.

XII. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if relevant portions of the Texas WQS are revised or remanded. In addition, the permit may be reopened and modified during the life of the permit if relevant procedures implementing the WQS are either revised or promulgated. Should the State adopt a new WQS, and/or develop a TMDL, this permit may be reopened to establish effluent limitations for the parameter(s) to be consistent with that approved State standard and/or water quality management plan, in accordance with 40 CFR §122.44(d). Modification of the permit is subject to the provisions of 40 CFR §124.5.

XIII. VARIANCE REQUESTS

No variance requests have been received.

XIV. COMPLIANCE HISTORY

None

XV. CERTIFICATION

This permit is in the process of certification by the State agency following regulations promulgated at 40 CFR 124.53. A draft permit and draft public notice will be sent to the District Engineer, Corps of Engineers; to the Regional Director of the U.S. Fish and Wildlife Service and to the National Marine Fisheries Service prior to the publication of that notice.

XVI. FINAL DETERMINATION

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

XVII. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. APPLICATION

NPDES Application for Permit to Discharge, Form 1 & 2C, received on June 17, 2016. Additional permit application information was received on May 5, 2017, April 28, 2017, April 27, 2017, April 18, 2017, and February 27, 2017.

B. State of Oklahoma References

"Implementation of the Oklahoma Water Quality Standards," Oklahoma Water Resources Board, Title 785, Chapter 46, effective as of September 11, 2015.

Oklahoma Water Quality Standards, (Title 785, Chapter 45) promulgated by the Oklahoma Water Resources Board including all amendments which are effective as of November 7, 2016.

http://www.deq.state.ok.us/wqdnew/305b_303d/2010/2010%20Oklahoma%20Integrated%20Report_complete.pdf

http://www.deq.state.ok.us/wqdnew/305b_303d/2010/2010%20Appendix%20C%20-%20303d.pdf

http://www.owrb.ok.gov/util/rules/pdf_rul/Chap45.pdf

http://ecos.fws.gov/ipac/

http://www.fws.gov/southwest/es/oklahoma/beetle1.htm

http://ecos.fws.gov/ipac/wizard/chooseLocation!prepare.action
https://ecos.fws.gov/ipac/location/EJOIDYB5SBBMBA72XKDJEXNZ6I/resources

D. 40 CFR CITATIONS

Sections 122, 124, 125, 133, and 136

E. MISCELLANEOUS CORRESPONDENCE

Letter from Dorothy Brown, EPA, to Ms. Lauren Sanders, Explorer Pipeline dated May 8, 2017, informing the applicant that its' NPDES application received June 17, 2016 is administratively complete.
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Email from Lauren Saunders, Explorer Pipeline to Maria Okpala, EPA, dated 5/15/17, 5/1/17, 4/28/17, 4/27/17, 4/18/17, and 2/27/17 on additional permit application information.
Email from Robert Kirkland, EPA, to Maria Okpala, EPA, dated April 28, 2017, on critical conditions information.

Email from Lauren Sanders, Explorer Pipeline, to Robert Kirkland, EPA, dated 4/28/17, on the facility flow information.

Email from Robert Kirkland, EPA to Maria Okpala, EPA on OWQS and Oklahoma implementation.

Letter from Dorothy Brown, EPA, to Ms. Lauren Sanders, Explorer Pipeline dated October 28, 2016, informing the applicant that its' NPDES application received June 17, 2016, is administratively incomplete.