NPDES PERMIT NO. TX0009172
STATEMENT OF BASIS

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

APPLICANT:

DCP Midstream, Rock Creek Gas Plant
1000 W. 10th Street
Borger, TX 79007

ISSUING OFFICE:

U.S. Environmental Protection Agency
Region 6
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Dallas, Texas 75202-2733

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DATE PREPARED:

April 2, 2014

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 March 28, 2014.

RECEIVING WATER – BASIN

Unnamed tributary of Rock Creek, thence to Rock Creek, thence to the Canadian River below Lake Meredith, Segment No. 0101B of the Canadian River Basin.

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)
BPJ	Best professional judgment
CFR	Code of Federal Regulations
cfs	Cubic feet per second
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
IP	Procedures to Implement the Texas Surface Water Quality Standards
µg/l	Micrograms per liter (one part per billion)
mg/l	Milligrams per liter (one part per million)
Menu 7	Intermittent stream with perennial pools
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
RRC	Railroad Commission of Texas
RP	Reasonable potential
SIC	Standard industrial classification
SWP3	Storm Water Pollution Prevention Plan
s.u.	Standard units (for parameter pH)
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TDS	Total dissolved solids
TMDL	Total maximum daily load
TOC	Total Organic Carbon
TRC	Total residual chlorine
TSS	Total suspended solids
TSWQS	Texas Surface Water Quality Standards
WET	Whole effluent toxicity
WQMP	Water Quality Management Plan
WQS	Water Quality Standards

I. PROPOSED CHANGES FROM PREVIOUS PERMIT

1. TRC limit of 33µg/L is changed to a limit of 19µg/L, which is EPA's acute chlorine criterion.
2. Critical low flow has been changed from 29% to a 11.5 % based on application information.
3. A TDS reporting only requirement has been included in the draft permit based on the level of TDS in the effluent.
4. Electronic monitoring report requirement has been included in the draft permit.

II. APPLICANT LOCATION and ACTIVITY

Under the SIC Code 1321, the applicant operates a natural gas processing plant.

As described in the application, the facility is located at 1000 W. 10th Street, Borger, Hutchinson County, Texas. Wastewater discharges from the facility flows continuously into an unnamed tributary of Rock Creek, thence to Rock Creek, thence to the Canadian River below Lake Meredith, Segment No. 0101B of the Canadian River Basin.

Discharges from Outfall 001 consist of cooling tower blowdown, zoolite treater, boiler system, inlet air cab, and stormwater runoff.

Discharges are located on that water at:

Outfall 001: Latitude 35° 40' 20.90"N; Longitude 101° 24' 33"W

III. PROCESS AND DISCHARGE DESCRIPTION

The facility processes compressed gas from surrounding booster sites. The gas is sweetened by contacting it with amine to remove hydrogen sulfide and carbon dioxide. The gas is then dehydrated by contacting it with both glycol and molecular sieve dehydration units. The treated gas is further compressed and processed through the cryogenic liquids recovery unit. The natural gas liquids product is sent by pipeline to a refinery for further processing.

Table 1: 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	0.038	0.020
pH, su	6.8 – 8.5	
TSS	33	
TOC	5.1	
COD	34.8	
BOD	15.7	9.1
Total Dissolved Solids	1,090	1,070
Chloride	110	93.9
Specific Conductance, µS/cm	1,570	1,547
Ammonia (as Nitrogen)	<0.10	

Parameter	Max Concentration, mg/L unless noted	Average Concentration, mg/L unless noted
Temperature (winter)		
Temperature (summer)		
Total Residual Chlorine, ug/l	50	13
Nitrate/Nitrite as N	0.54	
Nitrogen as Total Organic	0.99	
Oil & Grease	< 2.2	
Phosphorus	0.35	
Sulfate	499	
Sulfide	0.20	
Surfactants	<0.10	
Aluminum, ug/l	104	
Barium, ug/l	145	
Iron, ug/l	289	
Magnesium	25	
Molybdenum, ug/l	234	
Manganese, ug/l	24.3	
Copper, ug/l	<4.0	
Lead	<2.0	
Silver, ug/l	<2.0	
Zinc, ug/l	8.1	

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). This is a renewal of an existing permit. An NPDES Application for a Permit to Discharge (Form 1 & 2C) was received on November 21, 2013, and was deemed administratively complete on January 21, 2014. Additional permit application information was submitted via email on March 21, 2014 & March 25, 2014, and March 26, 2014.

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 draft permit for BOD. Water quality-based effluent limitations are established in the draft permit for pH.

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.

There are no published ELG's for this type of activity. Final effluent requirements are based on Technology requirements and are based on Best Available Technology Economically Achievable (BAT) and/or TCEQ water quality standards for Segment No.0101.

Limitations for Biochemical Oxygen Demand (BOD_5) are proposed in the permit and are expressed in terms of both mass and concentration. This is consistent with both EPA and TCEQ permits for similar facilities and is also consistent with 40 CFR 122.45(f). The proposed limitation for BOD5 at Outfall 001 is 30 mg/l maximum and 20 mg/l average. The effluent loadings, lbs/day, were calculated using the treatment facility's maximum flow of 0.038 MGD reported in the application, the respective pollutant's daily maximum concentration (mg/l), and the conversion factor of 8.34.

Loading, lbs/day = Flow (MGD) * 8.34 lb/gal * 30 mg/l

Daily Max. (lbs/day) BOD = 0.038 MGD * 8.34 lb/day * 30 mg/l = 9.51 lbs/day

EPA calculates the daily average or monthly average values by dividing the daily maximum by 1.5.

The narrative limitation for Oil & Grease is also continued in the draft permit based on the TCEQ narrative standard to limit Oil & Grease.

Stormwater has been identified by the permittee as a component of the discharge through Outfall No. 001. Stormwater pollution prevention requirements are continued in the draft permit. It is proposed that the facility conduct 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 draft 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.

C. WATER QUALITY BASED LIMITATIONS

1. General Comments

Water quality based requirements are necessary where effluent limits more stringent than technology-based limits are necessary to maintain or achieve federal or state water quality limits. Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on federal or state WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with applicable State WQS and applicable State water quality management plans to assure that surface WQS of the receiving waters are protected and maintained, or attained.

2. Implementation

The NPDES permits contain technology-based effluent limitations reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations and/or conditions are included in the NPDES permits. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other available toxicity information to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

3. State Water Quality Standards

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. Additionally, the TWQS found at 30 TAC Chapter 307 states that "surface waters will not be toxic to man from ingestion of water, consumption of aquatic organisms, or contact with the skin, or to terrestrial or aquatic life." The methodology outlined in the "Procedures to Implement the Texas Surface Water Quality Standards" (IP) is designed to ensure compliance with 30 TAC Chapter 307. Specifically, the methodology is designed to ensure that no 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.

The IP document is not a state water quality standard, but rather, a non-binding, non-regulatory guidance document. See IP at page 2 stating that "this is a guidance document and should not be interpreted as a replacement to the rules. The TWQS may be found in 30 TAC Sections (§§) 307.1-.10."). EPA does not consider the IP to be a new or revised water quality standard and has never approved it as such. EPA did comment on and conditionally “approve” the IP as part of the Continuing Planning Process (CPP) required under 40 CFR §130.5(c) and the Memorandum of Agreement between TCEQ and EPA, but this does not constitute approval of the IP as a water quality standard under CWA section 303(c). Therefore, EPA is not bound by the IP in establishing limits in this permit – but rather, must ensure that the limits are consistent with the EPA-approved state WQS. However, EPA has made an effort, where we believe the IP procedures are consistent with all applicable State and Federal regulations, to use those procedures.

The general criteria and numerical criteria which make up the stream standards are provided in the 2010 EPA-approved Texas Water Quality Standards, Texas Administrative Code (TAC), 30 TAC Sections 307.1 - 307.9, effective August 24, 2012.

The designated uses of the Canadian River below Lake Meredith, Segment No. 0101B of the Canadian River Basin are primary contact recreation and high aquatic life.

4. Reasonable Potential- Procedures

EPA develops draft permits to comply with State WQS, and for consistency, attempts to follow the IP where appropriate. However, EPA is bound by the State’s WQS, not State guidance, including the IP, 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. Waste load allocations (WLA’s) are calculated using estimated effluent dilutions, criteria outlined in the TWQS, and partitioning coefficients for metals (when appropriate and designated in the implementation procedures). The WLA is the end-of-pipe effluent concentrations that can be discharged and still meet instream criteria after mixing with the receiving stream. From the WLA, a long term average (LTA) is calculated, for both chronic and acute toxicity, using a log normal probability distribution, a given coefficient of variation (0.6), and either a 90th or a 99th percentile confidence level. The 90th percentile confidence level is for discharges to rivers, freshwater streams and narrow tidal rivers with upstream flow data, and the 99th percentile confidence level is for the remainder of cases. For facilities that discharge into receiving streams that have human health standards, a separate LTA will be calculated. The implementation

procedures for determining the human health LTA use a 99th percentile confidence level, along with a given coefficient of variation (0.6). The lowest of the calculated LTA; acute, chronic and/or human health, is used to calculate the daily average and daily maximum permit limits.

Procedures found in the IP for determining significant potential are to compare the reported analytical data either from the DMR history and/or the application information, against percentages of the calculated daily average water quality-based effluent limitation. If the average of the effluent data equals or exceeds 70% but is less than 85% of the calculated daily average limit, monitoring for the toxic pollutant will usually be included as a condition in the permit. If the average of the effluent data is equal to or greater than 85% of the calculated daily average limit, the permit will generally contain effluent limits for the toxic pollutant. The permit may specify a compliance period to achieve this limit if necessary.

Procedures found in the IP require review of the immediate receiving stream and effected downstream receiving waters. Further, if the discharge reaches a perennial stream or an intermittent stream with perennial pools within three-miles, chronic toxicity criteria apply at that confluence.

5. Permit-Action - Water Quality-Based Limits

Regulations promulgated at 40 CFR §122.44(d) require limits in addition to, or more stringent than effluent limitation guidelines (technology based). State WQS that are more stringent than effluent limitation guidelines are as follows:

a. pH

Wastewater discharges from the facility flow into an unnamed tributary of Rock Creek, thence to Rock Creek, thence to the Canadian River below Lake Meredith, Segment No. 0101B of the Canadian River Basin. The designated uses of Canadian River below Lake Meredith are primary contact recreation and high aquatic life. pH shall be limited to the standards for the Canadian River below Lake Meredith in Water Body Segment No. 0101of the Canadian River Basin to the range of 6.5 to 9.0 s.u.

b. Narrative Limitations

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.

The following narrative limitations in the draft permit represent protection of water quality for Outfall 001:

“The effluent shall contain no visible film of oil or globules of grease on the surface or coat the banks or bottoms of the watercourse.”

c. Total Residual Chlorine

DCP Midstream requested that EPA change the TRC minimum quantification level (MQL) specified in the current permit from 33µg/l to 100 µg/l. DCP Midstream stated that it had

upgraded its TRC analytical equipment and re-assessed its measurement technique, but still was unable to achieve the TRC MQL of 33 µg/l. DCP also stated that it conducted detection limit studies using the method described in 40 CFR 136, Appendix B and finds that 100 µg/l is a more realistic MQL for onsite analysis of TRC at the Rock Creek Gas Plant. DCP further substantiated its argument by stating that prior to Spring 2012, it monitored its wastewater effluent for TRC using a colorimetric portable field test kit (Hach Test Kit #59530) based on Method 4500-CI G in *Standard Methods for the Examination of Water and Wastewater*. The test kit lacked the sensitivity to monitor TRC down to 33µg/l, so it upgraded its analytical equipment and purchased a benchtop spectrophotometer with a pour-thru cell specifically designed for low-level analysis of TRC. The facility currently uses the Hach Method 0014, a technique that still uses the DPD (N, N-diethyl-*p*-phenylenediamine) color-changing indicator solution and follows Method 4500-Cl G, but uses a more sensitive spectrometer rather than a filter photometer to detect the indicator. It also incorporates additional sampling handling steps to increase method accuracy and precision. DCP also stated that it modified sample collection and handling standard operating procedures to ensure that reagents and glassware exhibit no chlorine demand and that samples are tested promptly after collection.

DCP further stated that despite all these improvements, a December 2012 detection limit study conducted by a chemist and using methods described in 40 CFR 136 Appendix B derived a method detection limit (MDL) of effluent, at approximately 10µg/l and a MQL of 100µg/l. The facility noted that the method-specific metric is still higher than the 33µg/l value stated in the permit. DCP pointed out that it had exhausted options for increasing sensitivity of its TRC monitoring method for Rock Creek Gas Plant and achieving the 33µg/l MQL specified in the permit is unrealistic. The permittee stated that the renewed permit should have a MQL that more realistically reflects the analytical capabilities that can be achieved by onsite analysis of TRC by gas plant operators. The permittee recommended a 100µg/l MQL for TRC because it would not represent a significant departure from the permit's current MQL, but would improve the quality of monitoring data collected under the permit.

EPA notes that TCEQ has not adopted a TRC criterion and may impose a BPJ limit for chlorine if necessary. As the permitting authority, EPA must assure compliance with State water quality standards. EPA has a chlorine criterion as well as an MQL for TRC. The 18th edition of Standard Methods for the Examination of Water and Waste Water (1992) states that the method detection limit for TRC is 10µg/l for method number 4500-Cl E (EPA Method 330.5). Based on this information and the method for an MQL from a method detection limit, EPA established a TRC MQL of 33µg/l. The draft permit included conditions in NPDES permits which allow development of discharge specific MQLs in cases where effluent matrix makes the general MQL inappropriate.

The procedures described in the "Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses" (EPA 440/5-84-030) indicate that except possibly where a locally important species is very sensitive, freshwater aquatic organisms and their uses should not be affected unacceptably if the four-day average concentration of total residual chlorine does not exceed 11µg/L more than once every three years on the average and if the one-hour average concentration does not exceed 19µg/L more than once every three years on the average. (See Page 17/18 of the 1985 Ambient Water Quality Criteria for Chlorine). In addition, EPA has established a MQL for TRC at 33µg/l. Values less than 33µg/L can be reported as zero. 19µg/L is EPA's acute chlorine criteria. Limits must be protective of WQS per 40 CFR 122.4(d) and 122.44(d).

The average daily discharge of TRC at Rock Creek gas plant is 13µg/l, and the maximum concentration is 50µg/l. However, the effluent shall contain NO MEASURABLE TRC at any time. NO MEASURABLE will be defined as no quantifiable level of TRC as determined by any approved method established in 40 CFR 136 that is greater than the established MQL. Also note that any level of TRC below the MQL may be reported as not detected. The previous permit established a TRC limit of 33µg/L. This limit is changed to 19µg/L which is EPA's acute chlorine criteria. EPA Region 6's MQL for TRC remain 33µg/L.

d. Toxics

The CWA 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 criteria, the permit must contain an effluent limit for that pollutant.

The critical low flow, 7Q2 for the receiving stream is 0.24cfs, while the harmonic mean is 1.75cfs. Outfall 001 is TCEQ'S TEXTOX Menu 2 (Discharge is to an intermittent water body within three miles of a perennial freshwater ditch, stream or river.) It discharges into an unnamed intermittent stream 1500 feet upstream from Rock Creek. This is Segment ID 0101B Rock Creek -Canadian River.

In addition, ITWQS, table 5, segment specific values for pH, TSS, total hardness, TDS, chloride, and sulfate values were also used in menu 2 to calculate reasonable potential. See attachment for TEXTOX spreadsheet calculation of reasonable potential for toxics.

Information obtained from the application shows that none of the toxic pollutants showed reasonable potential to violate Texas WQS.

Information contained in the application and supplemental application shows that TDS, chloride and sulfate are present in the discharge and was screened using the procedures found on page 87 of the IP. See attachment for TDS, chloride and sulfate calculation. Using these procedures their respective effluent concentrations of 1,070 mg/L, 93.9 mg/L, and 499 mg/L are less than their respective screening value. As a result, the proposed permit did not established limitation and monitoring requirements for sulfate and chloride. Although the proposed permit did not establish limitation requirement for TDS, a monitoring only requirement is proposed because of the level of TDS in the effluent.

Solids and Foam

The prohibition of the discharge of floating solids or visible foam in other than trace amounts is continued in the draft 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.

D. 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 recorded continuously. The permittee shall continue to monitor for pH, BOD5, and TRC at Outfall 001, once in two weeks based on BPJ. TDS shall be monitored semiannually using grab sample. Biomonitoring testing shall continue to be performed semiannually. TDS test shall be taken concurrently with biomonitoring test.

E. WHOLE EFFLUENT TOXICITY LIMITATIONS

The permittee has indicated they use additives to the utility water. These additives contain chemicals, which if used improperly, could become toxic to aquatic life uses of the receiving water. 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. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity.

Guidance in the ITWQS requires that a discharge to an intermittent stream within three miles of a perennial freshwater stream conduct either a 48-hour acute or a 7-day chronic test. Further, the ITWQS states that if the effluent flow equals or exceeds 10% of the low-flow of the perennial water, the permittee will conduct 7-day chronic testing. The low-flow of Rock Creek is 0.24 cfs, (0.154 MGD). The facility effluent flow is 0.020 MGD, therefore, a 7-day chronic testing with semiannual monitoring for *Pimephales promelas* and *Ceriodaphnia dubia* r is required according to the provisions indicated in Parts I and II of this permit.

The critical dilution is based on the effluent flow and critical low-flow of the stream or river.

The critical dilution is calculated as follows:

$$\text{Critical Dilution} = \frac{\text{Effluent Flow}}{\text{Effluent flow} + 7Q2}$$

$$= \frac{0.020}{0.020 + 0.154}$$

$$= 11.5\ \%$$

The percent of effluent at the edge of the mixing zone is 11.5%.

The critical dilution is changed from 29% (during the last permit cycle) to the proposed critical of 11.5%. The reasonable potential performed with the proposed critical dilution shows that there is no reasonable potential for the vertebrate specie, *Pimephales promelas* and the invertebrate species, *Ceriodaphnia dubia*. As a result, biomonitoring test is continued in the proposed permit for both test species.

Also note that some of the biomonitoring tests conducted by the permittee were invalid. As a result, the permittee retested some of the WET tests. The retest results were used to run the reasonable potential calculations. Some of the tests were considered invalid by the permittee due to a technician error, receiving water control not meeting the performance criteria (i.e. survival was 47.5%, which is less than the required 80% survival).

During the last permit cycle, the facility was concerned that the receiving water will be toxic to the test organisms due to total dissolved solids (TDS) levels in the receiving stream. This

request was made in an attempt to eliminate uncertainty from future testing. EPA's standard permit language requires that permittees start each permit cycle by performing WET tests using ambient water. The ambient water should be taken upstream of the discharge for effluent dilution and a control. In an email dated November 10, 2008, the EPA toxicity coordinator requested that the facility submit all WET tests initiated in the last five years, all data regarding the TDS levels measured in all tests as well as any other TDS measurements, any additional studies (e.g., information developed which would be relevant as part of a toxicity reduction evaluation (TRE) or toxicant identification evaluation (TIE) and other testing that has indicated any sources of toxicity other than or in addition to TDS. However, based on EPA's toxicity coordinator comments regarding standard permit language, the facility withdrew its request at that time. Later, the facility made another request due to the continuation of toxicity that has been seen in the receiving water. Based on the discussion with another toxicity coordinator, the facility was granted the permission to conduct its toxicity test with modified synthetic dilution water that matches the pH, alkalinity, and hardness of the receiving water. These test conditions were continued for the duration of the permit.

Based on the above discussion, the permittee will be required to continue using the modified synthetic dilution water that matches the pH, alkalinity, and hardness of the receiving water. However, the permittee is required to test for TDS concurrently during the biomonitoring test.

Based on the nature of the discharge; industrial, the estimated average flow; 0.020 MGD, the nature of the receiving water; perennial water body; and the critical dilution; 11.5%, the TCEQ IP directs the WET test to be a 7-day chronic toxicity testing using *Ceriodaphnia dubia* and *Pimephales promelas* . Testing frequency for both species shall continue to be semiannually.

The draft 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 4.9%, 6.5%, 8.6%, 11.5%, & 15.3%.

OUTFALL 001

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, thence to an unnamed tributary of Rock Creek, thence to Rock Creek, thence to the Canadian River below Lake Meredith, Segment No. 0101 of the Canadian River Basin. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Discharge Limitations	
	30-Day Average Minimum	7-Day Minimum
Whole Effluent Toxicity Testing (7 Day Static Renewal) 2/		
Ceriodaphnia dubia	Report	Report
Pimephales promelas	Report	Report

Effluent Characteristics	Monitoring Requirements	
Whole Effluent Toxicity Testing (7 Day Static Renewal) 1/	Frequency	Type

Ceriodaphnia dubia	1/6 months	24-Hr. Composite
Pimephales promelas	1/6 months	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.

F. 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.

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

Wastewater discharges from the facility flow into an unnamed tributary of Rock Creek, thence to Rock Creek, thence to the Canadian River below Lake Meredith, Segment No. 0101 of the Canadian River Basin. The receiving stream is listed as impaired for bacteria in the 2012 State of Texas 303(d) List for Assessed River/Stream Reaches Requiring Total Maximum Daily Loads (TMDLs). This impairment is under TCEQ's category 5c, which implies that additional data or information will be collected and/or evaluated for one or more parameters before a management strategy is selected. In light of the nature of the discharge, the discharger is not likely to contribute to impairment of bacteria. Therefore, no additional requirements beyond the previously described technology-based or water quality-based effluent limitations and monitoring requirements, are established in the proposed permit.

VIII. ANTIDEGRADATION

The Texas Commission on Environmental Quality, Texas Surface Water Quality Standards, Antidegradation, Title 30, Part 1, Chapter 307, Rule §307.5 sets forth the requirements to protect designated uses through implementation of the State WQS. The limitations and monitoring requirements set forth in the draft 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 increases of pollutants being discharged to the receiving waters authorized in the draft permit.

IX. ANTIBACKSLIDING

The draft 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

X. ENDANGERED SPECIES

According to the most recent county listing available at US Fish and Wildlife Service (USFWS), Southwest Region 2 website, http://www.fws.gov/southwest/es/ES_Lists_Main.cfm, two species are listed as endangered species listed in Hutchinson County. These species are the Arkansas River Shiner (*Notropis girardi)* and the least tern (*Sterna antillarum).*

Determination

The permit renewal reflected here does not change the nature or volume of the pollutants from the current. EPA is unaware, at this time, of any service concerns regarding this discharge and believes that the change in compliance period will have no effect on listed species and designated critical habitat. The proposed permit has retained the limitations and conditions of the expiring permit. EPA believes that these limitations are adequate to protect the listed species for Hutchinson County.

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 Hutchinson 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. The facility also stated in a cover letter dated February 13, 2014, that no impacts to cultural resources are associated with this project. The State Historic Preservation Officer concurred with the facility that no historic properties are affected and that the project may proceed.

XII. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if relevant portions of the New Mexico 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

During the last permit cycle, the facility had eleven quarters of BOD non-compliances and fourteen quarters of total residual chlorine non-compliances during the last permit cycle. These non-compliances include exceedances of its BOD limits in January & February 2009. The facility believes that the condition of the oil skimmer pit contributed to the BOD increase. The aeration pond was treated to increase microbial activity which brought BOD test within permit limits. The facility was also not in compliance with BOD limits during the fourth quarter of 2009; first, second, fourth quarter of 2010; first, fourth quarter of 2011 & 2013 respectively; first, second quarter of 2012. The permittee was also not in compliance with TRC during second, third, & fourth quarter of 2009; then first, second, third, fourth quarter of 2010; first second, third and fourth quarter of 2011, and then first, second, third quarter of 2012.

The facility also attributed increased BOD above its permit limits to the chemicals used in the cooling towers and boiler system to control scaling, corrosion, bacterial and algae growth. These chemicals contain considerable amounts of nitrogen and phosphorus, which can stimulate growth of microorganisms and photosynthetic algae. The facility also stated that BOD exceedance is also the result of settled organic material being brought up from the surface from the bottom of the pond due to cold winter temperatures. The pond “turnover” caused organic material normally on the bottom of the pond to reach the outfall, causing increased BOD.

The facility stated that its TRC results are false due to natural interference from turbidity in the test result being used. The facility has been treating the plant wastewater with sodium bisulfate in an effort to reduce TRC in the plant effluent. The facility also believes that TRC test result was inaccurate because of the amount of time taken by the laboratory to run the test from the time the samples were pulled. During the fourth quarter of 2012, DCP Midstream hired a consultant to study the Method Detection Level of TRC utilized by the plant. The consultant determined that TRC concentrations in the range between the permit limit between 33µg/l and 93µg/l cannot accurately be quantified due to test method limitations. Although the facility has historical TRC exceedances, the MDL study determined that these may not be exceedances.

Based on the above exceedances of BOD and TRC, the facility should seek avenues to achieve compliance for these parameters during the next permit cycle. EPA also reaffirms that its established MQL for TRC of 33µg/l has been consistently used throughout the Region, including natural gas industries. Adequate care should be taken to analyze TRC samples per 40 CFR 136. Values less than 33µg/L can be reported as zero.

XV. CERTIFICATION

This permit is in the process of certification by the Railroad Commission of Texas 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 draft permit:

A. APPLICATION

NPDES Application for Permit to Discharge, Form 1 & 2C, received on November 21, 2013. Additional Permit application information submitted on March 21, 2014 & March 25, 2014, and March 26, 2014.

B. State of Texas References

The State of Texas Water Quality Inventory, 13th Edition, Publication No. SFR-50, Texas Commission on Environmental Quality, December 1996.

"Procedures to Implement the Texas Surface Water Quality Standards via Permitting," Texas Commission on Environmental Quality, January 2003.

2010 Texas Surface Water Quality Standards, 30 TAC Sections 307.1 - 307.9, effective August 24, 2012.

http://www.fws.gov/southwest/es/ES_Lists_Main.cfm

C. 40 CFR CITATIONS

Sections 122, 124, 125, 133, and 136

E. MISCELLANEOUS CORRESPONDENCE

Letter from Dorothy Brown, EPA, to Mr. Jerry Barnhill, DCP Midstream, Rock Creek Gas Plant, dated January 21, 2014, informing applicant that its' NPDES application received November 21,2013, is administratively complete.

Email from Matt Findley, Senior Environmental Specialist, DCP Midstream, to Maria Okpala, EPA, dated March 21, 2014 & March 25, 2014, and March 26, 2014, on additional Permit application information.

Email from Robert Kirkland, EPA, to Maria Okpala, EPA, dated February 14, 2014, and revised April 1, 2014, on critical conditions information.