

NPDES PERMIT NO. NM0031071
STATEMENT OF BASIS

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

APPLICANT:

Western Refining Gallup Refinery
Route 3
Box 7
Gallup, NM 87301

ISSUING OFFICE:

U.S. Environmental Protection Agency
Region 6
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DATE PREPARED:

April 1, 2010

PERMIT ACTION

It is proposed that the facility be issued a first-time 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 5, 2010.

RECEIVING WATER – BASIN

An unnamed arroyo, thence to Puerco River, an ephemeral waterbody Segment No. 20.6.4.97 of the Lower Colorado 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
GPM	Gallon per minute
µg/l	Micrograms per liter (one part per billion)
mg/l	Milligrams per liter (one part per million)
MGD	Million gallons per day
MSGP	Multi-Sector General Permit
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NMIP	New Mexico NPDES Permit Implementation Procedures
NMWQS	New Mexico State Standards for Interstate and Intrastate Surface Waters
NPDES	National Pollutant Discharge Elimination System
MQL	Minimum quantification level
O&G	Oil and grease
RP	Reasonable potential
SIC	Standard industrial classification
s.u.	Standard units (for parameter pH)
SWQB	Surface Water Quality Bureau
TDS	Total dissolved solids
TMDL	Total maximum daily load
TRC	Total residual chlorine
TSS	Total suspended solids
WET	Whole effluent toxicity
WQCC	New Mexico Water Quality Control Commission
WQMP	Water Quality Management Plan
WQS	Water Quality Standards

I. APPLICANT LOCATION and ACTIVITY

Under the SIC Code 2911, the applicant operates a Petroleum Refinery. The refinery has an overall capacity to process up to 32,200 barrels per day of crude oil and additional feedstocks.

This permit includes petroleum refinery operations as regulated under [40 CFR 419], "Petroleum Refining Point Source Category," process stormwater and reverse osmosis unit reject water. The process wastewater collection system is a network of curbing, paving, catch basins, and underground piping that collects wastewater and stormwater from various processing areas within the refinery and then conveys the wastewater to a wastewater treatment system.

As described in the application, the facility is located along Interstate-40, Exit 39, Jamestown, McKinley County, New Mexico. Wastewater discharges from the facility flows into an unnamed arroyo, thence to Puerco River, an ephemeral waterbody Segment No. 20.6.4.97 of the Lower Colorado River Basin.

Discharges are located on that water at:

Outfall 001: Latitude 35° 29' 26.3"; Longitude 108° 26' 26.01"

II. DISCHARGE DESCRIPTION

The Gallup Refinery wastewater system is made up of the process wastewater system and the process area storm water system. These two streams are comingled and treated as process wastewater. The average flow rate from the wastewater system is 185 GPM (0.266 MGD). The process wastewater flows into the API separator which utilizes gravity and residence time to separate wastewater into three components namely sludge layer, oil layer and a clarified layer. The clarified effluent flows into the benzene air stripper columns. At the air stripper columns, ambient air is blown upwards through a falling cascade of clarified wastewater and as a result, dissolved gases and light hydrocarbons are disengaged and vented. After oil recovery and stripping of benzene from the wastewater, the wastewater enters the aeration basins. In the aeration basins, the treated wastewater is mixed with air in order to oxidize any remaining organic constituents and increase the dissolved oxygen concentration available in the water for growth of bacteria and other microbial organisms. The microbes degrade hydrocarbons into carbon dioxide and water. Effluent from the aeration basins flows into several evaporation ponds of various sizes. At the evaporation pond, wastewater is converted into vapor via solar and mechanical wind-effect evaporation.

Sanitary wastewater from the refinery as well as other wastewater from several houses and a local travel center also flows into the aeration basins. The average flowrate from the sanitary wastewater is 54 GPM (0.0778 MGD). Effluent from the aeration basins flows into the evaporation ponds. At the evaporation ponds, wastewater is converted into vapor via solar and mechanical wind-effect evaporation.

The refinery does not intend to change its operation or modify its facility as to create any new discharges. The facility does not currently discharge to a water of the state, and does not have pollutant data to conduct analysis on. The facility is designed not to discharge, but under extreme emergency may discharge process wastewater including process stormwater; sanitary wastewater, and reverse osmosis unit reject water via a series of evaporation ponds. Under such circumstances, the facility intends to use appropriate temporary treatment systems to meet permit

requirements. The refinery is subject to ELG prior to the process wastewater system and the process area storm water system comingling with sanitary wastewater at the aeration basins.

Table 1: Facility's Average Daily Productions

The table below shows facility's average daily application obtained from the permit application.

Quantity per day	Units of Measure	Operation	Affected outfall
20	1000 barrels feedstock per stream day	Crude (atmospheric)	001
20	1000 barrels feedstock per stream day	Crude (desalter)	001
5	1000 barrels feedstock per stream day	Fluidized Catalytic Cracking unit	001

In an email dated February 19, 2010, the facility updated its current production rate as follows: daily maximum estimated production rate – 32,200 BPD; crude desalter feedstock rate – 25,000 BPD; and Fluidized Catalytic Cracking Unit – 8,500 BPD.

III. 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 first-time permit issuance. An NPDES Application for a Permit to Discharge (Form 1 & 2C) was received on June 25, 2009. The application was deemed administratively incomplete on January 26, 2010. Additional permit application information was submitted on February 16, 2010; February 23, 2010; March 2, 2010, and March 5, 2010. The application was deemed administratively complete on March 5, 2010.

IV. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS

A. OVERVIEW of TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITION REASON 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 BOD₅, TSS, Oil and grease, COD, ammonia, sulfide, total phenolics, Total Chromium and Hexavalent Chromium. Water quality-based effluent limitations are established in the proposed draft permit for E. coli bacteria and pH. A BPJ limit is established in the proposed permit for benzene.

B. 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.

Based on available information, wastewater is not discharged from the refinery to surface water of the state because all the wastewater is evaporated. Wastewater evaporation represents best available technology economically achievable (BAT), and EPA proposes a no discharge permit for the facility. As a result, the facility is not authorized to discharge to a surface water of the State except in extreme emergencies.

According to the additional information submitted by the permittee, Western Refining is a crude oil refining and petroleum products manufacturing facility. The refinery receives and processes crude oil and other feedstocks, and then produces various finished products. These include propane, butane, naphtha, unleaded gasoline, diesel (low sulfur and ultra-low sulfur), and residual fuel. Ammonium Thiosulfate and elemental sulfur are also produced as by-products through desulfurization process. As a result, Western Refining is subject to Refinery Guidelines at 40 CFR 419, Subpart B, Cracking Subcategory. Other sources of technology based limits include sanitary permit requirements and/or NMED water quality standards.

Calculation of Technology-Based Limits

Internal Outfall 101 - Process wastewater including process stormwater; and reverse osmosis unit reject water flows into the oil/water separator, then into the Benzene air stripper via a series of aeration basins and finally into the evaporation ponds. Discharges are proposed to be authorized from internal Outfall 101 into the aeration lagoons, and finally into the evaporation ponds. Internal Outfall 101 shall be subject to ELG for Petroleum Refinery, Subpart B – Cracking Subcategory. See calculation of technology-based limits from the ELG below. The

concentration based limit for benzene is based on the BPJ of the permit writer and is consistent with limits given in other oil and gas industry permits.

Table 2: Calculation of Unit Process Rates and Unit Configuration Factors

Refinery Processes	EPA Process Number (*1)	Unit Process Rate K bbl/day (*2)	Total Feedstock Rate K bbl/day (*3)	Unit Process Rate to Feedstock Rate Ratio (*4)	Process Weighting Factor(*5)	Unit Process Configuration Factor (*6)
Atmospheric Crude Distillation	1	32.2	32.2	1	1	1.0
Crude Desalting	2	25	32.2	0.776398	1	0.776398
Fluidized Catalytic Cracking, FCC	6	8.5	32.2	0.2639752	6	1.5838
Hydrofluoric Alkylation Unit		3				Not Applicable to Refinery Process Configuration Factor
Platformer Unit		7.3				
Isomerization Unit		5				
Diesel Hydrotreater, DH	54	4				
Kerosene Hydrotreater, KH		5				

Total crude feedstock rate = 32.2 K bbl/day

Total coking and cracking feedstock rate = 8.5+4+5= 17.5 K bbl/day (i.e FCC +DH+KH.

Coking feedstock rate is zero because refinery does not perform coking operation.)

Total Reforming and Alkylation Unit = 7.3 +3=10.3 K bbl/day

Total Refinery Process Configuration = 1.0+0.776398+1.5838 = 3.36

Size Factor Input: Feedstock, K bbl/day = 32.2

According to 419.23(b), PROCESS FACTOR = 0.63; SIZE FACTOR = 0.95

Multiplier = Feedstock * Process Factor * Size Factor

Multiplier = 32.2* 0.63* 0.95 = 19.2717

Footnotes:

(*1) EPA Process numbers are found in 40 CFR 419, Appendix A. They can be cross-referenced in the *Development Document, New Source Performance Standards, and Pretreatment Standards for the Petroleum Refinery Point Source Category* (EPA 440/1-82/014), Table III-7, pp.49-54.

(*2) Data obtained from additional permit application information

(*3) Data obtained from additional permit application information

(*4) is (*2) divided by (*3)

(*5) Process weighting factor is specified at 40 CFR 419.42 (b) (3), Subpart D

(*6) The product in this column is the result of multiplying the “Unit Process Rate to Feedstock Rate Ratio” in column (*4) times the process factor specified in column (*5). These values are summed to obtain the total refinery process configuration factor.

Table 3A: Technology-Based Limits Calculation for Conventional, non-conventional, and toxic refinery loading calculations found at 40 CFR 419, Subpart B – Cracking Category: *Process Wastewater*

	References	Treatment Technology	Factors	Factors	Multiplier	Discharge Fractions through Outfall	LOADINGS:	
			Subpart B Avg (lb/K bbl)	Subpart B Max (lb/K bbl)			Subpart B Avg (lb/day)	Subpart B Max (lb/day)
PROCESS WASTEWATER			Subpart B	Subpart B			Subpart B	Subpart B
PARAMETER			Avg (lb/K bbl)	Max (lb/K bbl)			Avg (lb/day)	Max (lb/day)
Conventional:								
BOD ₅	419.24(a)	BCT	5.5	9.9	19.2717	1	105.9944	190.7898
TSS	419.24(a)	BCT	4.4	6.9	19.2717	1	84.79548	132.9747
Oil & Grease	419.24(a)	BCT	1.6	3.0	19.2717	1	30.83472	57.8151
Nonconventional:								
COD	419.23(a)	BAT	38.4	74	19.2717	1	740.0333	1426.106
Ammonia	419.23(a)	BAT	3.0	6.6	19.2717	1	57.8151	127.1932
Sulfide	419.23(a)	BAT	0.029	0.065	19.2717	1	0.558879	1.252661
BPT Calculations for Total Recoverable Phenolics, Total Chromium, and Hexavalent Chromium								
Total Phenolics	419.22(a)	BPT	0.036	0.074	19.2717	1	0.693781	1.426106
Chromium Total	419.22(a)	BPT	0.088	0.15	19.2717	1	1.69591	2.890755
Hexavalent Chromium	419.22(a)	BPT	0.0056	0.012	19.2717	1	0.107922	0.23126

Table 3B: BAT Calculations for Total Recoverable Phenolics, Total Chromium, and Hexavalent Chromium

	References	Treatment Technology	Factors	Factors	Rate K bbl/day	Discharge Fractions through Outfall	LOADINGS:	
							Subpart B	Subpart B
PROCESS WASTEWATER PARAMETER			Avg (lb/K bbl)	Max (lb/K bbl)			Avg (lb/day)	Max (lb/day)
BAT Calculations for								
Total Phenolics								
Crude Processes	419.23(c)	BAT	0.003	0.013	32.2	1	0.0966	0.4186
Cracking and Coking	419.23(c)	BAT	0.036	0.147	17.5	1	0.63	2.5725
Reforming and Alkylation	419.23(c)	BAT	0.032	0.132	10.3	1	0.3296	1.3596
Total Phenolics BAT:							1.0562	4.3507
Chromium (Total)								
Crude Processes	419.23(c)	BAT	0.004	0.011	32.2	1	0.1288	0.3542
Cracking and Coking	419.23 (c)	BAT	0.041	0.119	17.5	1	0.7175	2.0825
Reforming and Alkylation	419.23(c)	BAT	0.037	0.107	10.3	1	0.3811	1.1021
Total Chromium BAT:							1.2274	3.5388
Hexavalent Chromium								
Crude Processes	419.23 (c)	BAT	0.0003	0.0007	32.2	1	0.00966	0.02254
Cracking and Coking	419.23 (c)	BAT	0.0034	0.0076	17.5	1	0.0595	0.133
Reforming and Alkylation	419.23(c)	BAT	0.0031	0.0069	10.3	1	0.03193	0.07107
Hexavalent Chromium BAT:							0.10109	0.22661

For Total Recoverable Phenolics, Total Chromium, and Hexavalent Chromium, apply most stringent (BAT or BPT) calculation.

Table 4A: Technology-Based Limits Calculation for Conventional, non-conventional, and toxic refinery loading calculations found at 40 CFR 419, Subpart B – Cracking Category: Stormwater

	References	Treatment Technology	Factors	Factors	Rate K gal/day	Discharge Fractions through Outfall	LOADINGS:	
STORMWATER			Subpart B	Subpart B			Subpart B	Subpart B
PARAMETER			Avg (lb/K gal)	Max (lb/K gal)			Avg (lb/day)	Max (lb/day)
Conventional:								
BOD5	419.24(e)	BCT	0.22	0.40	216	1	47.52	86.4
TSS	419.24(e)	BCT	0.18	0.28	216	1	38.88	60.48
Oil and Grease	419.24(e)	BCT	0.067	0.13	216	1	14.472	28.08
Non-Conventional:								
COD	419.23(f)	BAT	1.5	3.0	216	1	324	648
Total Phenolics	419.23(f)	BAT	0.0014	0.0029	216	1	0.3024	0.6264
Metals:								
Total Chromium	419.23(f)	BAT	0.0018	0.0050	216	1	0.3888	1.08
Hexavalent Chromium	419.23(f)	BAT	0.00023	0.00052	216	1	0.00497	0.1123

Table 5A: Calculations of Total Allocations for Internal Outfall 101

Total Allocation = Process wastewater + Ballast water + Contaminated Stormwater (lbs/day)

Ballast water is not applicable to the refinery. As a result, no allocation is given to ballast water.

PARAMETER	PROCESS WASTEWATER		BALLAST WATER		CONTAMINATED STORMWATER		TOTAL ALLOCATION	
	Subpart B Avg (lb/K bbl)	Subpart B Max (lb/K bbl)	Subpart B Avg (lb/K bbl)	Subpart B Max (lb/K bbl)	Subpart B Avg (lb/K gal)	Subpart B Max (lb/K gal)	Subpart B Avg (lb/day)	Subpart B Max (lb/day)
Conventional:								
BOD ₅	105.9944	190.7898			47.52	86.4	153.5144	277.1898
TSS	84.79548	132.9747			38.88	60.48	123.6755	193.4547
Oil & Grease	30.83472	57.8151			14.472	28.08	45.30672	85.8951
Nonconventional:								
COD	740.0333	1426.106			324	648	1064.033	2074.106
Ammonia	57.8151	127.1932					57.8151	127.1932
Sulfide	0.558879	1.252661					0.558879	1.252661
Apply most stringent BAT or BPT for Total Recoverable Phenolics, Total chromium and Hexavalent Chromium i.e process wastewater								
Nonconventional:								
Total Phenolics	0.693781	1.426106			0.3024	0.6264	0.996181	2.052506
Metals:								
Total Chromium	1.2274	2.89055			0.3888	1.08	1.3351	3.7917
Hexavalent Chromium	0.10109	0.22661			0.00497	0.1123	0.12634	0.28536

Technology-Based Limits for Outfall 001 (0.0778 MGD)

Sanitary wastewater flows into the aeration basins and then into the evaporation ponds. Outfall 001 shall be subject to the secondary treatment requirements.

The 30-day and daily maximum loadings for BOD₅ and TSS are based on the facility's average flow of 0.0778 MGD as shown below:

$$\text{Loading, lbs/day} = \text{Flow (MGD)} * 8.34 \text{ lb/gal} * \text{Concentration (mg/l)}$$

$$30\text{-day Avg. (lbs/day) BOD}_5, \text{TSS} = 0.0778 \text{ MGD} * 8.34 \text{ lb/day} * 30 \text{ mg/l} = 19.4656 \text{ lbs/day}$$

$$\text{Daily Max. (lbs/day) BOD}_5, \text{TSS} = 0.0778 \text{ MGD} * 8.34 \text{ lb/day} * 45 \text{ mg/l} = 29.1983 \text{ lbs/day}$$

The final loadings for BOD₅ and TSS are loadings from the effluent guidelines and loadings due to the sanitary wastewater. TSS and BOD₅ 30-day average and maximum concentrations of 30 mg/l and 45 mg/l respectively are proposed in the final Outfall 001. E.coli bacteria limits of 126 cfu per 100 ml monthly average and 410 cfu per 100 ml daily maximum are also proposed in the permit based on the current NMWQS.

A daily maximum effluent limitation for Benzene of 0.005 mg/L is also proposed at Outfall 001. This is based on the BPJ of the permit writer and is consistent with limits given in other oil and gas industry permits.

Table 5B: Calculations of Total Allocations for Final Outfall 001

PARAMETER	SANITARY WASTEWATER LOADINGS		ELG LOADINGS		TOTAL LOADINGS	
	30-Day Avg (lbs/day)	Daily Max (lbs/day)	30-Day Avg (lbs/day)	Daily Max (lbs/day)	30-Day Avg (lbs/day)	Daily Max (lbs/day)
BOD ₅	19.4656	29.1983	153.5144	277.1898	172.98	306.3881
TSS	19.4656	29.1983	123.6755	193.4547	143.1411	222.653

Stormwater Pollution Prevention Requirements

Stormwater has been identified by the permittee as a component of the discharge through Outfall No. 001. In an email dated February 19, 2010, the permittee indicated that all stormwater originating within its process areas is contaminated. These contaminated stormwaters are subject to ELGs as calculated above. In addition, the permittee stated that the maximum contaminated stormwater daily rate is 216,000 GPD. This facility also has coverage under the MSGP for allowable "uncontaminated" stormwater discharges, not subject to ELG. Stormwater pollution prevention requirements are proposed in the draft permit, and shall apply whether discharge occurs or not.

It is proposed that the facility conduct annual inspections 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.

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 general and specific stream standards are provided in NMWQS (20.6.4 NMAC amended through August 1, 2007). The facility discharges into an unnamed arroyo, thence to Puerco River, an ephemeral waterbody Segment No. 20.6.4.97 of the Lower Colorado River Basin.

The CWA sections 101(a)(2) and 303(c) require water quality standards to provide, wherever attainable, water quality for the protection and propagation of fish, shellfish, wildlife, and recreation in and on the water, functions commonly referred to as “fishable/swimmable” uses. EPA's current water quality regulation effectively establishes a rebuttable presumption that “fishable/swimmable” uses are attainable and therefore should apply to a water body unless it can be demonstrated that such uses are not attainable. EPA does not expect the State to adopt uses for ephemeral waters that cannot be attained, but in those instances, the State must submit a

UAA to support an aquatic life designation that does not meet the CWA §101(a)(2) objective as required by 40 CFR 131.10(j)(1).

The New Mexico State Standards for Interstate and Intrastate Surface Waters are found at 20.6.4 NMAC, amended through August 1, 2007 and are found on the NMED's website at <http://www.nmcpr.state.nm.us/nmac/parts/title20/20.006.0004.pdf>. The designated uses of Segment No. 20.6.4.97 are livestock watering, wildlife habitat, limited aquatic life and secondary contact.

4. 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. BACTERIA

Outfall 001 shall be subject to E. coli requirement for primary body contact uses. WQS require limits for E. coli of 126 cfu/100 ml monthly geometric mean and 410 cfu/100 ml single sample maximum.

b. pH

The water quality-based standard for primary contact pH range of 6.6 – 9.0 standard units is more restrictive than the technology-based pH range of 6.0 – 9.0 standard units. The pH range shall be 6.6 – 9.0 standard units at all times, when discharging.

c. TOXICS

i. General Comments

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.

There is no data to perform reasonable potential calculation since the facility has not had a discharge within the last three years.

Minimum quantification levels (MQL's) for state water quality numerical standards-based effluent limitations are listed in Part II of the permit

Solids and Foam

The prohibition of the discharge of floating solids or visible foam in other than trace amounts is proposed 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). Sample frequency is based on the NMIP and is consistent with other facilities of similar size.

Should any discharge occur from Outfall 001, the discharge shall be sampled within one hour of beginning for the pollutants listed at 40 CFR 122, Appendix D, Tables III and IV, plus pH, hardness, TDS, oil & grease, and TSS and the results submitted to EPA and NMED-SWQB. Should the discharge continue for more than one day, additional samples and analyses results shall be submitted for each additional day. These pollutants are listed in Part 2 of the proposed permit.

Flow shall to be estimated, using sound scientific methods, such as a “V” notch weir, and reported daily when discharge occurs at Outfall 001; and twice per week at internal Outfall 101. BOD5, TSS, Oil and grease, COD, ammonia, sulfide, and total phenolics shall be monitored and reported monthly at internal Outfall 101. pH shall be monitored twice per week at internal Outfall 101.

Total Chromium, and Hexavalent Chromium – Gallup Refinery does not use or generate chromium at its facility, therefore a monitoring frequency of 1/year for total chromium and hexavalent chromium is considered adequate for the protection of the receiving water and its designated uses.

TSS, BOD5, pH and E. coli bacteria shall be monitored daily at final Outfall 001, if discharge occurs. Benzene shall be monitored twice/week at Outfall 001, when discharge occurs.

E. WHOLE EFFLUENT TOXICITY LIMITATIONS

Procedures for implementing WET terms and conditions in NPDES permits are contained in the NMIP, July 2009. Table 11 of Section V of the NMIP outlines the type of WET testing for different types of discharges. Since discharges are authorized in the event of emergency, no low flow situations are expected. As a result, an LC₅₀ test, which is a shorter test, is appropriate for the discharge. The receiving water is described as being an ephemeral waterbody; flowing only under periods of snowmelt or when rainfall of long enough duration and/or intensity occur. Biomonitoring of the effluent is, therefore, required to assess potential toxicity, if and when there is a discharge. Biomonitoring requirements are stated in Part II.D of the draft permit.

OUTFALL 001

During the period beginning the effective date of the permit and lasting through the expiration date of the permit (unless otherwise noted), the permittee is **NOT authorized** to discharge process wastewater including process stormwater; sanitary wastewater, and reverse osmosis unit reject water via a series of evaporation ponds into an unnamed arroyo, thence to Puerro River, an ephemeral waterbody Segment No. 20.6.4.97 of the Lower Colorado River Basin, from Outfall 001. The permittee shall take all reasonable steps to prevent a discharge. In the event of emergency discharges, the permittee shall be subject to the limitations and monitoring specified below and in Part II.D of the permit.

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE MONITORING</u>	
	<u>30-DAY AVG MINIMUM</u>	<u>24-Hr. MINIMUM</u>
Whole Effluent Toxicity Testing (24 Hr. Static Non-Renewal) <u>1/</u>		
<u>Daphnia pulex</u>	REPORT	REPORT

<u>EFFLUENT CHARACTERISTIC</u>	<u>MONITORING REQUIREMENTS</u>	
	<u>FREQUENCY</u>	<u>TYPE</u>
Whole Effluent Toxicity Testing (24 Hr. Static RNon-eneval) <u>1/</u>		
<u>Daphnia pulex</u>	1/ 6 months	Grab

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.

V. 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.

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

Wastewater discharges from the facility flows into an unnamed arroyo thence to Puerco River, an ephemeral waterbody Segment No. 20.6.4.97 of the Lower Colorado River Basin. The receiving stream is not listed as impaired in the 2008 - 2010 State of New Mexico 303(d) List for Assessed River/Stream Reaches Requiring Total Maximum Daily Loads (TMDLs).

VII. 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/EndangeredSpecies/lists/>, five species are listed as threatened or endangered in McKinley County. These are the Bald eagle, Black-footed ferret, Mexican spotted owl, Southwestern willow flycatcher, and Zuni fleabane.

On August 9, 2007, the bald eagle was removed from the federal list of threatened and endangered species. After nearly disappearing from most of the United States decades ago, the bald eagle is now flourishing across the nation and no longer needs the protection of the Endangered Species Act.

Research of available information finds that the primary cause for the population decreases leading to the threatened or endangered status for the avian species (Bald eagle, Mexican spotted owl, and Southwestern willow flycatcher) is destruction of habitat. Issuance of this permit is found to have no impact on the habitat of the listed species since no construction is authorized by this permitting action. Additionally, no pollutants were identified by the permittee, hence, issuance of this permit is found to have no impact on the identified avian species. EPA believes that the issuance of the permit will have no effect on these species as effluent from this refinery is not expected to contain detectable concentrations of the contaminants of concern nor did the permit application indicate the discharge is expected to contain concentrations of these chemicals of concern. Research of the Black-footed Ferret finds that the species has diminished, due to the eradication of the prairie dog, the primary food source and provider of shelter (burrows) for the ferret. Issuance of this permit should have no effect on the food source or habitat of the prairie dog or the ferret, nor is it associated with predator control programs. The Zuni fleabane, a flowering plant, is listed as threatened in McKinley County. Zuni fleabane flowers from mid to late May into early June. Fruiting time varies from mid June to early July. The major threat is surface disturbance activity associated with mineral development. Off-road vehicle (ORV) activities are a potential threat to the fragile habitat of this species. This permitting action is found to have no impact on mineral exploration or development or ORV use.

The Environmental Protection Agency has evaluated the potential effects of issuance of this permit upon listed or proposed endangered or threatened species. The facility is designed not to discharge, but may discharge under extreme emergency, and therefore, EPA has determined there will be no effects on endangered and threatened species.

VIII. HISTORICAL AND ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

The no-discharge permit would have no impact on historical and/or archeological sites.

IX. 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.

X. FINAL DETERMINATION

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

XI. 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 25, 2009.

B. State of New Mexico References

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC, as amended through August 1, 2007.

Procedures for Implementing National Pollutant Discharge Elimination System in New Mexico, November 30, 2009.

Narrative Toxics Implementation Guidance – Whole Effluent Toxicity, December 16, 2005.
2008 – 2010 State of New Mexico CWA § 303(d) /§ 305 (b) Integrated Report, Appendix A.

C. Other References

Post Third Round NPDES Permit Implementation Strategy, adopted October 1, 1992.

<http://www.fws.gov/southwest/es/EndangeredSpecies/lists/>

Guide for the Application of Effluent Limitations Guidelines for the Petroleum Refining Industry, USEPA, Industrial Technology Division, June 1985.

D. 40 CFR CITATIONS

Sections 122, 124, 125, 133, and 136

E. MISCELLANEOUS CORRESPONDENCE

Letter from Dorothy Brown, EPA, to Mr. Mark B. Turri, Refinery Manager, Western Refining - Gallup Refinery, dated March 5, 2010, informing applicant that its' NPDES application received June 25, 2009, is administratively complete.

Emails from Rajen Gaurav, Western Refining – Gallup Refinery, to Maria Okpala, EPA, dated 2/19/2010, 2/23/10, 3/02/10, & 3/05/10 submitting additional refinery information.

Letter from Mark Turri, Refinery manager, Western Refining- Gallup Refinery, to Jenaie Franke, EPA, dated February 8, 2010, submitting additional permit application information.

Email from Carl Chavez J. (Oil Conservation Division, New Mexico Energy, Minerals & Natural Resources Department) to Hope Monzeglio, NMED and to Dave Cobrain, NMED, dated January 13, 2010 on major modification to discharge and NPDES update.

Letter from Dorothy Brown, EPA, to Mr. Mark B. Turri, Refinery Manager, Western Refining - Gallup Refinery, dated January 26, 2010, informing applicant that its' NPDES application received June 25, 2009, is administratively incomplete.