

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET, SUITE 300
DENVER, COLORADO 80202-2466

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, as amended, (33 U.S.C. §1251 et seq; the "Act"),

the MHA Nation Clean Fuels Refinery

is authorized to discharge from its wastewater treatment facilities located in the NW 1/4 of Section 19, Township 152N, Range 87W, Fort Berthold Indian Reservation, Ward County, North Dakota

to wetlands tributary to the East Fork of Shell Creek,

in accordance with discharge point(s), effluent limitations, monitoring requirements and other conditions set forth herein. Authorization for discharge is limited to those outfalls specifically listed in the permit.

This permit shall become effective **to be determined upon issuance**

This permit and the authorization to discharge shall expire at midnight, **to be determined upon issuance**

Signed this day of

Authorized Permitting Official

Stephen S. Tuber, Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

Title

INDUSTRIAL (Rev.02/06)

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1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1.1. Definitions.

The *30-day (and monthly) average*, other than for fecal coliform bacteria and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. Geometric means shall be calculated for fecal coliform bacteria and total coliform bacteria. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.

The *7-day (and weekly) average*, other than for fecal coliform bacteria and total coliform bacteria, is the arithmetic mean of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. Geometric means shall be calculated for fecal coliform bacteria and total coliform bacteria. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week, which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains the Saturday.

Daily Maximum (Daily Max.) is the maximum measured value for a pollutant discharged during a calendar day or any 24-hour period that reasonably represents a calendar day for purposes of sampling. For pollutants with daily maximum limitations expressed in units of mass (e.g., kilograms, pounds), the daily maximum is calculated as the total mass of pollutant discharged over the calendar day or representative 24-hour period. For pollutants with limitations expressed in other units of measurement (e.g. milligrams/liter, parts per billion), the daily maximum is calculated as the average of all measurements of the pollutant over the calendar day or representative 24-hour period. If only one measurement or sample is taken during a calendar day or representative 24-hour period, the single measured value for a pollutant will be considered the daily maximum measurement for that calendar day or representative 24-hour period.

Daily Minimum (Daily Min.) is the minimum value allowable in any single sample or instantaneous measurement collected during the course of a day.

Mean (7-day mean, 30-day mean) is the arithmetic mean value of all results for samples collected during either a seven day period or calendar week whichever is applicable, or a thirty day period or a calendar month whichever is applicable.

Grab sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.

Instantaneous measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.

Composite samples shall be flow proportioned. The composite sample shall, at a minimum, contain at least four (4) samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours, nor more than twenty-four (24) hours. Acceptable methods for the preparation of composite samples are as follows:

- a. Constant time interval between samples, sample volume proportional to flow rate at the time of sampling;
- b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time of the first sample was collected may be used;

- c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,
- d. Continuous collection of sample with sample collection rate proportional to flow rate.

Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

Director means the Regional Administrator of EPA Region 8 or an authorized representative.

EPA means the United States Environmental Protection Agency.

Storm Water or *Stormwater* means storm water runoff, snow melt runoff, and surface runoff and drainage.

CWA means the Clean Water Act (formerly referred to as either the Federal Water Pollution Act or the Federal Water Pollution Control Act Amendments of 1972), Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, Pub. L. 97-117, and Pub. L. 100-4. In this permit the CWA may be referred to as "the Act".

Sewage Sludge is any solid, semi-solid or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary or advanced wastewater treatment processes; and a material derived from sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works.

Whole Effluent Toxicity, Acute toxicity occurs when 50 percent or more mortality is observed for either species (see Part 1.3.) at any effluent concentration. Mortality in the control must simultaneously be 10 percent or less for the effluent results to be considered valid. Chronic toxicity occurs when during a chronic toxicity test, the 25% inhibition concentration (IC_{25}) calculated on the basis of test organism survival and growth or survival and reproduction, is less than or equal to 100% effluent concentration.

Section 313 Water Priority Chemicals means a chemical or chemical categories which: 1) are listed at 40 CFR 372.65 pursuant to Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986); 2) are present at or above threshold levels at a facility subject of EPCRA Section 313 reporting requirements; and 3) that meet at least one of the following criteria: (i) are listed in Appendix D of 40 CFR 122 on either Table II (organic toxic pollutants), Table III (certain metals, cyanides, and phenols) or Table V (certain toxic pollutants and hazardous substances); (ii) are listed as a hazardous substance pursuant to section 311(b)(2)(A) of the CWA at 40 CFR 116.4; or (iii) are pollutants for which EPA has published acute or chronic water quality criteria.

- 1.2. Description of Discharge Point(s). The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under an NPDES permit is a violation of the Clean Water Act and could subject the person(s) responsible for such discharge to penalties under Section 309 of the Act.

<u>Outfall Serial Number(s)</u>	<u>Description of Discharge Point(s)</u>
001	Any discharge of uncontaminated stormwater from the Evaporation Ponds to the wetland swale located in the NW1/4 Section 19, Township 152 North, Range 87 West. Longitude 47°58'25" Latitude 101°52'11"
002	Any discharge from the Final Effluent Holding Ponds or the Final Release Tanks to the wetland swale located in the NW1/4 Section 19, Township 152 North, Range 87 West. Longitude 47°58'29" Latitude 101°52'9"
002a	Any discharge from the Stormwater Final Release Tanks to the wetland swale located in the NW1/4 Section 19, Township 152 North, Range 87 West. Longitude 47°58'29" Latitude 101°52'9"
003	Any discharge from the Sanitary Wastewater Treatment Plant to the wetland swale located in the NW1/4 Section 19, Township 152 North, Range 87 West. Longitude 47°58'??" Latitude 101°52'??"

1.3. Specific Limitations and Self-Monitoring Requirements

1.3.1. Effluent Limitations - Outfall 001. Effective immediately and lasting through the life of this permit, the quality of effluent discharged from the Stormwater Evaporation Ponds by the facility shall, as a minimum, meet the limitations as set forth below:

Effluent Characteristic	Effluent Limitation		
	30-Day Average <u>a/</u>	7-Day Average <u>a/</u>	Daily Maximum <u>a/</u>
Flow, mgd	NA	NA	0.08
Oil and Grease, mg/L	NA	NA	15
Biochemical Oxygen Demand (5-day), mg/L	30	45	N/A
Total Suspended Solids, mg/L	30	45	N/A
Phenol, ug/L	300	N/A	N/A
Iron (tr), ug/L	300	N/A	N/A
Manganese (tr), ug/L	50	N/A	N/A
Selenium (tr), ug/L	5	N/A	20
Sulfate, mg/L	750	N/A	N/A
Nitrate as N, mg/L	10	N/A	N/A
Dissolved Oxygen, mg/L:	April 1 – Sept 30 8.0 (1-day min.) 9.5 (7-day mean) 6.5 (30-day mean) Oct 1 – March 31 4.0 (1-day min.) 5.0 (7-day mean) 6.5 (30-day mean)		
The pH of the discharge shall not be less than 7.0 s.u.or greater than 9.0 s.u.at any time.			

a/ See Definitions, Part 1.1., for definition of terms.

tr – total recoverable

The discharge from Outfall 001 shall be free from oil and grease attributable to wastewater, which causes a visible film or sheen upon the waters or any discoloration of the surface of adjoining shoreline or causes a sludge or emulsion to be deposited beneath the surface of the water or upon the adjoining shorelines or prevents classified uses of such waters.

1.3.2 Self-Monitoring Requirements - Outfall 001. As a minimum, upon the effective date of this permit, the following constituents shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge. If no discharge occurs during the entire monitoring period, it shall be stated on the Discharge Monitoring Report Form (EPA No. 3320-1) that no discharge or overflow occurred.

Effluent Characteristic	Frequency	Sample Type <u>a/</u>
Total Flow, mgd <u>b/</u>	Daily	Continuous, Recorder
Biochemical Oxygen Demand (5-day), mg/L	Monthly	Composite
Total Suspended Solids, mg/L	Monthly	Composite
Phenol, ug/L	Quarterly	Composite
Ammonia as N, mg/L	Quarterly	Composite
Selenium (tr), ug/L	Quarterly	Composite
Manganese (tr), ug/L	Quarterly	Composite
Iron (tr), ug/L	Quarterly	Composite
Fluoride, mg/L	Quarterly	Composite
Sulfate, mg/L	Quarterly	Composite
Nitrate as N, mg/L	Quarterly	Composite
Total Phosphorous as P, mg/L	Quarterly	Composite
pH (s.u.)	Daily	Grab or Continuous
Oil and grease, visual <u>c/</u>	Daily	Visual <u>c/</u>
Dissolved Oxygen, mg/L	Daily	Grab

a/ See Definitions, Part 1.1., for definition of terms.

b/ Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained. The average flow rate (in million gallons per day) during the reporting period and the maximum flow rate observed (in mgd) shall be reported.

c/ A daily visual observation is required. If a visible sheen is detected, a grab sample shall be taken and analyzed immediately. The concentration of oil and grease shall not exceed 15 mg/L in any sample.

tr – total recoverable

1.3.3. Effluent Limitations - Outfall 002. Effective immediately and lasting through the life of this permit, the quality of effluent discharged from the Final Effluent Holding Ponds or Effluent Final Release Tanks by the facility shall, as a minimum, meet the limitations as set forth below:

Effluent Characteristic	Effluent Limitation		
	30-Day Average <u>a/</u>	7-Day Average <u>a/</u>	Daily Maximum <u>a/</u>
Flow, mgd	0.025	N/A	0.05
Biochemical Oxygen Demand (5-day), lbs./day	43	N/A	81
Chemical Oxygen Demand, lbs./day	255	N/A	500
Total Suspended Solids, lbs./day	35	N/A	55
Oil and Grease, lbs./day	13.7	N/A	25.4
Benzene, ug/L	2.2	N/A	NA
Ethyl benzene, ug/L	530	N/A	NA
Toluene, ug/L	1300	N/A	NA
Phenol, ug/L	300	N/A	NA
Phenolic Compounds, lbs./day	0.29	N/A	0.59
Hydrogen Sulfide, ug/L	2.0	N/A	NA
Ammonia as N, mg/L	1.1	N/A	3.2
Barium (tr), ug/L	1000	N/A	NA
Aluminum (tr), ug/L	87	N/A	750
Chromium (Total), lbs./day	0.035	N/A	1.22
Chromium (VI), ug/L	11	N/A	16
Chromium (VI), lbs/day	0.0018	N/A	0.0067
Iron (tr), ug/L	300	N/A	N/A
Manganese (tr), ug/L 50		N/A	N/A
Mercury (Total), ug/L	0.0012	N/A	1.4
Nickel (tr), ug/L	132	N/A	1190
Selenium (tr), ug/L	5	N/A	20
Chloride, mg/L	230	N/A	860
Fluoride, mg/L	4.0	N/A	N/A
Sulfate, mg/L	750	N/A	N/A
Nitrite as N, mg/L	1.0	N/A	N/A
Nitrate as N, mg/L	10	N/A	N/A
Whole Effluent Toxicity, acute	LC ₅₀ > 100%		
Whole Effluent Toxicity, chronic	IC ₂₅ > 100%		
The pH of the discharge shall not be less than 7.0 s.u. or greater than 9.0 s.u. at any time.			

Effluent Characteristic	Effluent Limitation
Dissolved Oxygen, mg/L:	April 1 – Sept 30 8.0 (1-day min.) 9.5 (7-day mean) 6.5 (30-day mean)
	Oct 1 – March 31 4.0 (1-day min.) 5.0 (7-day mean) 6.5 (30-day mean)

a/ See Definitions, Part 1.1., for definition of terms.

tr – total recoverable

The discharge from Outfall 002 shall be free from oil and grease attributable to wastewater, which causes a visible film or sheen upon the waters or any discoloration of the surface of adjoining shoreline or causes a sludge or emulsion to be deposited beneath the surface of the water or upon the adjoining shorelines or prevents classified uses of such waters.

1.3.4 Self-Monitoring Requirements - Outfall 002. As a minimum, upon the effective date of this permit, the following constituents shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge. If no discharge occurs during the entire monitoring period, it shall be stated on the Discharge Monitoring Report Form (EPA No. 3320-1) that no discharge or overflow occurred.

Effluent Characteristic	Frequency	Sample Type <u>a/</u>
Total Flow, mgd <u>b/</u>	Daily	Continuous, Recorder
Biochemical Oxygen Demand (5-day), lbs./day	2X/Week	Composite
Chemical Oxygen Demand, lbs./day	Monthly	Composite
Total Suspended Solids, lbs./day	2X/Week	Composite
Oil and Grease, lbs/day	Weekly	Grab
Benzene, ug/L	Monthly	Grab
Ethyl benzene, ug/L	Monthly	Grab
Toluene, ug/L	Monthly	Grab
Phenol, ug/L	Monthly	Grab
Phenolic Compounds, lbs./day	Monthly	Grab
Hydrogen Sulfide, ug/L	Weekly	Grab
Ammonia as N, mg/L	Weekly	Composite
Barium (tr), ug/L	Monthly	Composite
Aluminum (tr), ug/L	Monthly	Composite

Effluent Characteristic	Frequency	Sample Type ^{a/}
Chromium (Total), lbs./day	Monthly	Composite
Chromium (VI), ug/L	Monthly	Grab
Chromium (VI), lbs./day	Monthly	Grab
Iron (tr), ug/L	Monthly	Composite
Manganese (tr), ug/L	Monthly	Composite
Mercury (Total), ug/L	Monthly	Composite
Nickel (tr), ug/L	Monthly	Composite
Selenium (tr), ug/L	Monthly	Composite
Chloride, mg/L	Monthly	Composite
Fluoride, mg/L	Monthly	Composite
Sulfate, mg/L	Monthly	Composite
Nitrite as N, mg/L	Monthly	Composite
Nitrate as N, mg/L	Monthly	Composite
Total Phosphorous as P, mg/L	Monthly	Composite
Whole Effluent Toxicity, acute	Quarterly	Grab
Whole Effluent Toxicity, chronic	Quarterly	Composite
pH (s.u.)	Daily	Grab or Continuous
Temperature, °C	Daily	Grab
Oil and grease, visual ^{c/}	Daily	Grab
Dissolved Oxygen, mg/L	Daily	Grab

^{a/} See Definitions, Part 1.1., for definition of terms.

^{b/} Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained. The average flow rate (in million gallons per day) during the reporting period and the maximum flow rate observed (in mgd) shall be reported.

^{c/} A daily visual observation is required. If a visible sheen is detected, a grab sample shall be taken and analyzed immediately. The concentration of oil and grease shall not exceed 15 mg/L in any sample.

tr - total recoverable

1.3.5 Additional Self-Monitoring Requirements - Outfall 002.

Additional Monitoring Requirement for Outfall 002:

Approximately 90 days and 270 days after startup of the facility, monitoring shall be required for:

Total Metals – Table III §40CFR 122 Appendix D

Volatile, acid, and base/neutral compounds – Table II §40CFR 122 Appendix D

1.3.6 Effluent Limitations - Outfall 002a. Effective immediately and lasting through the life of this permit, the quality of effluent discharged from the Stormwater Final Release Tanks by the facility shall, as a minimum, meet the limitations as set forth below:

Effluent Characteristic	Effluent Limitation		
	30-Day Average \bar{a} /	7-Day Average \bar{a} /	Daily Maximum \bar{a} /
Flow, mgd	0.0065	N/A	0.027
Oil and Grease, mg/L	15	N/A	15
Total Organic Carbon, mg/L	110	N/A	110
Benzene, ug/L	2.2	N/A	NA
Ethyl benzene, ug/L	530	N/A	NA
Toluene, ug/L	1300	N/A	NA
Phenol, ug/L	300	N/A	NA
Hydrogen Sulfide, ug/L	2.0	N/A	NA
Ammonia as N, mg/L	1.1	N/A	3.2
Barium (tr), ug/L	1000	N/A	NA
Aluminum (tr), ug/L	87	N/A	750
Chromium (VI), ug/L	11	N/A	16
Iron (tr), ug/L	300	N/A	N/A
Manganese (tr), ug/L 50		N/A	N/A
Mercury (Total), ug/L	0.0012	N/A	1.4
Nickel (tr), ug/L	132	N/A	1190
Selenium (tr), ug/L	5	N/A	20
Chloride, mg/L	230	N/A	860
Fluoride, mg/L	4.0	N/A	N/A
Sulfate, mg/L	750	N/A	N/A
Nitrite as N, mg/L	1.0	N/A	N/A
Nitrate as N, mg/L	10	N/A	N/A
Whole Effluent Toxicity, acute	LC ₅₀ > 100%		
Whole Effluent Toxicity, chronic	1C ₂₅ > 100%		
The pH of the discharge shall not be less than 7.0 s.u. or greater than 9.0 s.u. at any time.			
Dissolved Oxygen, mg/L:	April 1 – Sept 30 8.0 (1-day min.) 9.5 (7-day mean) 6.5 (30-day mean)		
	Oct 1 – March 31 4.0 (1-day min.) 5.0 (7-day mean) 6.5 (30-day mean)		

a/ See Definitions, Part 1.1., for definition of terms.

tr – total recoverable

The discharge from Outfall 002a shall be free from oil and grease attributable to wastewater, which causes a visible film or sheen upon the waters or any discoloration of the surface of adjoining shoreline or causes a sludge or emulsion to be deposited beneath the surface of the water or upon the adjoining shorelines or prevents classified uses of such waters.

1.3.7 Self-Monitoring Requirements - Outfall 002a. As a minimum, upon the effective date of this permit, the following constituents shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge. If no discharge occurs during the entire monitoring period, it shall be stated on the Discharge Monitoring Report Form (EPA No. 3320-1) that no discharge or overflow occurred.

Effluent Characteristic	Frequency	Sample Type a/
Total Flow, mgd b/	Daily	Continuous, Recorder
Biochemical Oxygen Demand (5-day), mg/L	2X/Week	Composite
Total Organic Carbon, mg/L	Monthly	Composite
Total Suspended Solids, mg/L	2X/Week	Composite
Benzene, ug/L	Monthly	Grab
Ethyl benzene, ug/L	Monthly	Grab
Toluene, ug/L	Monthly	Grab
Phenol, ug/L	Monthly	Grab
Hydrogen Sulfide, ug/L	Weekly	Grab
Ammonia as N, mg/L	Weekly	Composite
Barium (tr), ug/L	Monthly	Composite
Aluminum (tr), ug/L	Monthly	Composite
Chromium (VI), ug/L	Monthly	Grab
Iron (tr), ug/L	Monthly	Composite
Manganese (tr), ug/L	Monthly	Composite
Mercury (Total), ug/L	Monthly	Composite
Nickel (tr), ug/L	Monthly	Composite
Selenium (tr), ug/L	Monthly	Composite
Chloride, mg/L	Monthly	Composite
Fluoride, mg/L	Monthly	Composite

Effluent Characteristic	Frequency	Sample Type <u>a/</u>
Sulfate, mg/L	Monthly	Composite
Nitrite as N, mg/L	Monthly	Composite
Nitrate as N, mg/L	Monthly	Composite
Total Phosphorous as P, mg/L	Monthly	Composite
Whole Effluent Toxicity, acute	Quarterly	Grab
Whole Effluent Toxicity, chronic	Quarterly	Composite
pH (s.u.)	Daily	Grab or Continuous
Temperature, °C	Daily	Grab
Oil and Grease, visual <u>c/</u>	Daily	Grab
Oil and Grease, mg/L	Weekly	Grab
Dissolved Oxygen, mg/L	Daily	Grab

a/ See Definitions, Part 1.1., for definition of terms.

b/ Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained. The average flow rate (in million gallons per day) during the reporting period and the maximum flow rate observed (in mgd) shall be reported.

c/ A daily visual observation is required. If a visible sheen is detected, a grab sample shall be taken and analyzed immediately. The concentration of oil and grease shall not exceed 15 mg/L in any sample.

tr - Total recoverable

1.3.8 Effluent Limitations - Outfall 003. Effective immediately and lasting through the life of this permit, the quality of effluent discharged from the Sanitary Wastewater Treatment Plant by the facility shall, as a minimum, meet the limitations as set forth below:

Effluent Characteristic	Effluent Limitation		
	30-Day Average <u>a/</u>	7-Day Average <u>a/</u>	Daily Maximum <u>a/</u>
Flow, MGD	NA	NA	0.08
Biochemical Oxygen Demand (5-day), mg/L	30	45	N/A
Total Suspended Solids, mg/L	30	45	N/A
Ammonia as N, mg/L	1.1	N/A	3.2
Total Residual Chlorine, ug/L	11	N/A	19
Iron (tr), ug/L	300	N/A	N/A
Manganese (tr), ug/L	50	N/A	N/A
Selenium (tr), ug/L	5	N/A	20
Sulfate, mg/L	750	N/A	N/A
Nitrite as N, mg/L	1.0	N/A	N/A
Nitrate as N, mg/L	10	N/A	N/A
Dissolved Oxygen, mg/L:	<p>April 1 – Sept 30 8.0 (1-day min.) 9.5 (7-day mean) 6.5 (30-day mean)</p> <p>Oct 1 – March 31 4.0 (1-day min.) 5.0 (7-day mean) 6.5 (30-day mean)</p>		
The pH of the discharge shall not be less than 7.0 s.u. or greater than 9.0 s.u. at any time.			

a/ See Definitions, Part 1.1., for definition of terms.

tr – total recoverable

The discharge from Outfall 003 shall be free from floating debris, oil, scum, and other floating materials attributable to municipal, industrial, or other discharges or agricultural practices in sufficient amounts to be unsightly or deleterious.

Percentage Removal Requirements (TSS and BOD₅ Limitation): In addition to the concentration limits for total suspended solids and BOD₅ indicated above, the arithmetic mean of the concentration for effluent samples collected in a 30-day consecutive period shall not exceed 15 percent of the arithmetic mean of the concentration for influent samples collected at approximately the same times during the same period (85 percent removal).

1.3.9 Self-Monitoring Requirements - Outfall 003. As a minimum, upon the effective date of this permit, the following constituents shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge. If no discharge occurs during the entire monitoring period, it shall be stated on the Discharge Monitoring Report Form (EPA No. 3320-1) that no discharge or overflow occurred.

Effluent Characteristic	Frequency	Sample Type <u>a/</u>
Total Flow, mgd <u>b/</u>	Daily	Continuous, Recorder
Biochemical Oxygen Demand (5-day), mg/L <u>c/</u>	Monthly	Composite
Total Suspended Solids, mg/L <u>c/</u>	Monthly	Composite
Ammonia as N, mg/L	Quarterly	Composite
Total Residual Chlorine, ug/L	Daily	Grab
Selenium (tr), ug/L	Quarterly	Composite
Manganese (tr), ug/L	Quarterly	Composite
Iron (tr), ug/L	Quarterly	Composite
Sulfate, mg/L	Quarterly	Composite
Nitrite as N, mg/L	Quarterly	Composite
Nitrate as N, mg/L	Quarterly	Composite
Total Phosphorous as P, mg/L	Quarterly	Composite
pH (s.u.)	Daily	Grab or Continuous
Dissolved Oxygen, mg/L	Daily	Grab

a/ See Définitions, Part 1.1., for definition of terms.

b/ Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained. The average flow rate (in million gallons per day) during the reporting period and the maximum flow rate observed (in mgd) shall be reported.

c/ In addition to monitoring the final discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge.

tr – total recoverable

1.3.10 Whole Effluent Toxicity Testing - Chronic Toxicity

Starting in the first full quarter after the effective date of this permit, the permittee shall, at least once each quarter, conduct chronic short term toxicity tests on the final effluent from Outfalls 002 and 002a. There shall not be chronic toxicity in 100 percent concentration of the final effluent.

The monitoring frequency shall be quarterly. Quarterly samples shall be collected on a two day progression; i.e., if the first quarterly sample is on a Monday, during the next quarter, the sampling shall begin on a Wednesday. If chronic toxicity is detected, an additional test shall be conducted within two weeks of the date of when the permittee learned of the test failure. The need for any additional samples shall be determined by the permit issuing authority.

The chronic toxicity tests shall be conducted in accordance with the procedures set out in the latest revision of "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms", EPA 821-R-02-013, Rev. Oct. 2002. Test species shall consist of *Ceriodaphnia dubia* and *Pimephales promelas*. A multi dilution test consisting of five concentrations and a control is required. If test acceptability criteria is not met for control survival, growth, or reproduction, the test shall be considered invalid. Chronic toxicity occurs when, during a chronic toxicity test, the 25% inhibition concentration (IC₂₅) calculated on the basis of test organism survival and growth or survival and reproduction, is less than or equal to 100% effluent concentration. The tests shall be done using effluent concentrations of 100%, 50%, 25%, 12.5%, 6.25%, and 0% (control).

Test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the end of the calendar period during which the whole effluent test was run (e.g. results for the calendar quarter ending March 31 shall be reported with the DMR due April 28, with the remaining reports submitted with DMRs due each July 28, October 28, and January 28). Monthly test results shall be reported along with the DMR submitted for that month. The format for the report shall be consistent with the latest revision of the "Region VIII Guidance for Chronic Whole Effluent Reporting" (Appendix C of Region VIII NPDES Whole Effluent Toxics Control Program, August 1997), and shall include all the physical and chemical testing as specified.

If the results for one year (four consecutive quarters) of whole effluent testing indicate no chronic toxicity, the permittee may request the permit issuing authority to allow the permittee to reduce testing frequency, and/or reduce testing to one species on an alternating basis, and/or modify testing to the acute test program. The permit issuing authority may approve, partially approve, or deny the request based on results and other available information. If approval is given, the modification will take place without a public notice.

1.3.11 Whole Effluent Toxicity Testing - Acute Toxicity

Starting in the first full quarter after the effective date of this permit, the permittee shall conduct quarterly acute static replacement toxicity tests on an effluent sample of the discharge from Outfalls 002 and 002a. The effluent shall be obtained from the sample required for the chronic toxicity tests as noted in Part 1.3.10. of this permit.

The replacement static toxicity tests shall be conducted in accordance with the procedures set out in the latest revision of "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms", EPA 821-R-02-012 (Rev Oct. 2002). The permittee shall conduct an acute 48-hour static toxicity test using *Ceriodaphnia dubia* an acute 96-hour static toxicity test using *Pimephales promelas*. The tests shall be done using effluent concentrations of 100%, 75%, 50%, 25%, 12.5%, 6.25% and 0% (control).

Acute toxicity occurs when 50 percent or more mortality is observed for either species at any effluent concentration. If more than 10% control mortality occurs, the test shall be repeated until satisfactory control survival is achieved. If acute toxicity occurs, an additional test shall be conducted within two weeks of the date of when the permittee learned of the test failure. If only one species fails, retesting may be limited to this species. Should toxicity occur in the second test, testing shall occur once a month until further notified by the permit issuing authority.

Quarterly test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the end of the reporting calendar quarter (e.g., whole effluent results for the calendar quarter ending March 31 shall be reported with the DMR due April 28, with the remaining reports submitted with DMRs due each July 28, October 28, and January 28). Monthly test results shall be reported along with the DMR submitted for that month. The format for the report shall be consistent with the latest revision of the "Region VIII Guidance for Acute Whole Effluent Reporting" (Appendix C of Region VIII NPDES Whole Effluent Toxics Control Program, August 1997), and shall include all chemical and physical data as specified.

If the results for four consecutive quarters of testing indicate no acute toxicity, the permittee may request the permit issuing authority to allow a reduction to quarterly acute toxicity testing on only one species on an alternating basis. The permit issuing authority may approve or deny the request based on the results and other available information without an additional public notice. If the request is approved, the test procedures are to be the same as specified above for the test species. If approval is given, the modification will take place without a public notice.

1.3.12 Toxicity Identification Evaluation (TIE)/Toxicity Reduction Evaluation (TRE)

Should acute toxicity and/or chronic toxicity be detected in two (2) consecutive tests of the permittee's discharge, a TIE-TRE shall be undertaken by the permittee to establish the cause of the toxicity, locate the source(s) of the toxicity, and develop control of or treatment of the toxicity. Failure to initiate, or conduct an adequate TIE-TRE, or delays in the conduct of such tests, shall not be considered a justification for non-compliance with the whole effluent toxicity limitations contained in Part 1.3.3 and 1.3.6 of this permit. A TRE plan needs to be submitted to the permitting authority within 45 days after confirmation of the continuance of the effluent toxicity.

1.4 Stormwater Requirements

1.4.1 Storm Water Pollution Prevention Plans

The permittee shall continue to implement all existing best management practices (BMP) that may affect the quality of storm water runoff unless those BMPs are modified or replaced by the storm water pollution prevention plan required below. The permittee shall develop a storm water pollution prevention plan for the MHA Nation Clean Fuels Refinery site. The storm water pollution prevention plan shall be prepared in accordance with good engineering practices and in accordance with the factors outlined in 40 CFR 125.3(d)(2) or (3) as appropriate. The plan shall identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility. In addition, the plan shall describe and ensure the implementation of practices which are to be used to reduce the pollutants in storm water discharges associated with industrial activity at the facility and to assure compliance with the terms and conditions of this permit. The facility must implement the provisions of the storm water pollution prevention plan required under this Part as a condition of this permit.

1.4.1.1 Deadlines for Plan Preparation and Compliance.

The plan for a storm water discharge:

- 1.4.1.2 Shall be prepared and submitted to the permit issuing authority for review and approval no later than six months after the effective date of this permit (and updated at a minimum of every two years or more frequently if deemed appropriate). The plan shall be submitted to the U.S. EPA Region 8 Stormwater Program at the following address:

Greg Davis
EPA Region 8 Stormwater Program Coordinator
Mailcode: 8P-W-P
999 18th Street, Suite 200
Denver, CO 80202-2466

A copy of the plan shall also be submitted to the Three Affiliated Tribes Environmental Department at the following address:

Environmental Division
Three Affiliated Tribes
204 West Main
New Town, ND 58763

- 1.4.1.3 Shall provide for implementation and compliance with the terms of the plan on or before six months after the plan is approved by the U.S. EPA Region 8 Stormwater Program.
- 1.4.1.5 Upon a showing of good cause, the permit issuing authority may establish a later date in writing for preparation, implementation, and compliance with the plan.
- 1.4.1.6 Except as provided in Part 1.4.1.3 above, the plan shall be implemented in accordance with the approval of the permit issuing authority no later than one year after the effective date of this permit unless the permit issuing authority approves a later date.

- 1.4.1.7 The permit issuing authority may notify the permittee at any time that the plan does not meet one or more of the minimum requirements of this Part. Such notification shall identify those provisions of the permit which are not being met by the plan, and identify which provisions of the plan require modifications in order to meet the minimum requirements of this Part. Within 30 days of such notification from the permit issuing authority, (or as otherwise provided by the permit issuing authority), the permittee shall make the required changes to the plan and shall submit to the permit issuing authority a written certification that the requested changes have been made.
- 1.4.1.8 Keeping Plans Current - The permittee shall amend the plan whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the waters of the United States or if the storm water pollution prevention plan proves to be ineffective in eliminating or significantly minimizing pollutants from sources identified under Part 1.4.1.9.2 (description of potential pollutant sources) of this permit, or in otherwise achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity. Amendments to the plan shall be submitted for review to the permit issuing authority in the same manner as Part 1.4.1.2(above).
- 1.4.1.9 Contents of Plan - The plan shall include, at a minimum, the following:
- 1.4.1.9.1 Pollution Prevention Team - The plan shall identify a specific individual or individuals within the facility organization as members of a storm water Pollution Prevention Team that are responsible for developing the storm water pollution prevention plan and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's storm water pollution prevention plan.
- 1.4.1.9.2 Description of Potential Pollutant Sources - The plan shall provide a description of potential sources which may reasonably be expected to add significant amounts of pollutants to storm water discharges or which may result in the discharge of pollutants during dry weather from separate storm sewers draining the facility. Each plan shall identify all activities and significant materials which may potentially be significant pollutant sources. The plan shall include, at a minimum:
- 1.4.1.9.3 Inventory of Exposed Materials - An inventory of the types of materials handled at the site that potentially may be exposed to precipitation. Such inventory shall include a narrative description of significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to storm water between the time of 3 years prior to the date of the issuance of this permit and the present; method and location of on-site storage or disposal; materials management practices employed to minimize contact of materials with storm water runoff between the time of 3 years prior to the date of the issuance of this permit and the present; the location and a description of existing structural and non-structural control measures to reduce pollutants in storm water runoff; and a description of any treatment the storm water receives. Note: The limitation of three (3) years prior to the date of the issuance of this permit does not apply to radioactive materials.
- 1.4.1.9.4 Drainage A site map indicating an outline of the portions of the drainage area of each storm water outfall that are within the facility boundaries, each existing structural control measure to reduce pollutants in storm water runoff, surface water bodies, locations where significant materials are exposed to precipitation, locations where major spills or leaks identified under Part 1.4.1.9.6 (Spills and Leaks) of this permit have occurred, and the locations of the following activities where such activities are exposed to precipitation: fueling stations, vehicle and equipment maintenance and/or cleaning areas, loading/unloading areas, locations used for the treatment, storage or disposal of wastes, liquid storage tanks, processing areas and storage areas.

- 1.4.1.9.5 For each area of the facility that generates storm water discharges associated with industrial activity with a reasonable potential for containing pollutants, a prediction of the direction of flow, and an identification of the types of pollutants which are likely to be present in storm water discharges associated with industrial activity. Factors to consider include the toxicity of chemical; quantity of chemicals used, produced or discharged; the likelihood of contact with storm water; and history of significant leaks or spills of toxic or hazardous pollutants. Flows with a significant potential for causing erosion shall be identified.
- 1.4.1.9.6 Spills and Leaks: A list of significant spills and significant leaks of toxic, hazardous or radioactive pollutants that have occurred at areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility after the date of 3 years prior to the effective date of this permit. Such list shall be updated as appropriate during the term of the permit. Note: The limitation of three (3) years prior to the date of the issuance of this permit does not apply to radioactive materials:
- 1.4.1.9.7 Sampling Data: A summary of existing discharge sampling data describing pollutants in storm water discharges from the facility, including a summary of sampling data collected during the term of this permit.
- 1.4.1.9.8 Risk Identification and Summary of Potential Pollutant Sources: A narrative description of the potential pollutant sources from the following activities: loading and unloading operations; outdoor storage activities; outdoor manufacturing or processing activities; significant dust or particulate generating processes; and on-site waste disposal practices. The description shall specifically list any significant potential source of pollutants at the site and for each potential source, any pollutant or pollutant parameter (e.g., radioactive materials, acids, solvents, etc.) of concern shall be identified.
- 1.4.1.9.9 Spills and Leaks: The permittee shall develop a description of storm water management controls appropriate for the MHA Nation Clean Fuels Refinery Site, and implement such controls. The appropriateness and priorities of controls in a plan shall reflect identified potential sources of pollutants at the facility. The description of storm water management controls shall address the following minimum components, including a schedule for implementing such controls:
- 1.4.1.9.10 Good Housekeeping: Good housekeeping requires the maintenance of areas which may contribute pollutants to storm waters discharges in a clean, orderly manner.
- 1.4.1.9.11 Preventive Maintenance: A preventive maintenance program shall involve timely inspection and maintenance of storm water management devices (e.g., cleaning oil/water separators, catch basins) as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and ensuring appropriate maintenance of such equipment and systems.
- 1.4.1.9.12 Spill Prevention and Response Procedures: Areas where potential spills which can contribute pollutants to storm water discharges can occur, and their accompanying drainage points shall be identified clearly in the storm water pollution prevention plan. Where appropriate, specifying material handling procedures, storage requirements, and use of equipment such as diversion valves in the plan should be considered. Procedures for cleaning up spills shall be identified in the plan and made available to the appropriate personnel. The necessary equipment to implement a clean up should be available to personnel.

- 1.4.1.9.13 Inspections: In addition to or as part of the comprehensive site evaluation required under Part 1.4.1.9.18 of this permit, qualified facility personnel shall be identified to inspect designated equipment and areas of the facility at appropriate intervals of no less than one time each year as specified in the plan. A set of tracking or follow-up procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections shall be maintained.
- 1.4.1.9.14 Employee Training: Employee training programs shall inform personnel responsible for implementing activities identified in the storm water pollution prevention plan or otherwise responsible for storm water management at all levels of responsibility of the components and goals of the storm water pollution prevention plan. Training should address topics such as spill response, good housekeeping and material management practices. The pollution prevention plan shall identify periodic dates for such training.
- 1.4.1.9.15 Record keeping and Internal Reporting Procedures: A description of incidents (such as spills, or other discharges), along with other information describing the quality and quantity of storm water discharges shall be included in the plan required under this part. Inspections and maintenance activities shall be documented and records of such activities shall be incorporated into the plan.
- 1.4.1.9.16 Sediment and Erosion Control: The plan shall identify areas which, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion.
- 1.4.1.9.17 Management of Runoff: The plan shall contain a narrative consideration of the appropriateness of traditional storm water management practices (practices other than those which control the generation or source(s) of pollutants) used to divert, infiltrate, reuse, or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharges from the site. The plan shall provide the measures that the permittees determine to be reasonable and appropriate and these measures shall be implemented and maintained. The potential of various sources at the MHA Nation Clean Fuels Refinery Site to contribute pollutants to storm water discharges associated with industrial activity (see Part 1.4.1.9.2 shall be considered when determining reasonable and appropriate measures. Appropriate measures may include: vegetative swales and practices, reuse of collected storm water (such as for a process or as an irrigation source), inlet controls (such as oil/water separators), snow management activities, infiltration devices, and wet detention/retention devices.
- 1.4.1.9.18 Comprehensive Site Compliance Evaluation: Qualified personnel shall conduct site compliance evaluations at appropriate intervals specified in the plan, but, in no case less than once a year. Such evaluations shall provide:
- 1.4.1.9.19 Areas contributing to a storm water discharge associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, shall be made.

- 1.4.1.9.20 The analytical results from the storm water monitoring required under Parts 1.3.2 and 1.3.7 shall be evaluated with the objective of determining whether or not the storm water discharges from the plant site are causing or contributing to water quality problems in the East Fork of Shell Creek. To the extent that data are available, the evaluation shall include data for the previous 12 months. Earlier data may be included to give an indication of trends. The data should also be evaluated in terms of giving an indication of whether or not the plan is effective in minimizing the discharge of pollutants or whether additional control measures are needed.
- 1.4.1.9.21 Based on the results of the visual inspection (Part 1.4.1.9.13 above) and the evaluation of the monitoring data (Part 1.4.1.9.20 above), the plan shall be revised as appropriate. The revision shall include, as appropriate, the description of potential pollutant sources identified in the plan and pollution prevention measures and controls identified in the plan. The revision shall be completed within four (4) weeks of such inspection and shall provide for implementation of any changes to the plan in a timely manner, but in no case more than 12 weeks after the inspection unless additional time has been approved by the permit issuing authority.
- 1.4.1.9.22 A report summarizing the scope of the inspection, personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with Part 1.4.1.9.20 (above) of the permit shall be made and retained as part of the storm water pollution prevention plan for at least one year after coverage under this permit terminates. The report shall identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit.
- 1.4.1.9.23 Consistency with other plans: Storm water pollution prevention plans may reflect requirements for spill prevention control and countermeasure (SPCC) plans developed for the MHA Nation Clean Fuels Refinery under section 311 of the CWA; best management practices plans; or other environmental control plans prepared for the MHA Nation Clean Fuels Refinery. Provided such requirement(s) are incorporated into the storm water pollution prevention plan, or referenced by specific document title, volume, heading, and page number(s). All referenced documents must be available for review and inspection upon request.
- 1.4.2 Additional requirements for storm water discharges associated with industrial activity from facilities subject to EPCRA Section 313 requirements. In addition to the requirements of Part 1.4.1.9 through 1.4.1.9.22 of this permit and other applicable conditions of this permit, storm water pollution prevention plans for facilities subject to reporting requirements under EPCRA Section 313 for chemicals which are classified as 'Section 313 water priority chemicals' in accordance with the definition in PART I.A of this permit, shall describe and ensure the implementation of practices which are necessary to provide for conformance with the following guidelines:
- 1.4.2.1 In areas where Section 313 water priority chemicals are stored, processed or otherwise handled, appropriate containment, drainage control and/or diversionary structures shall be provided. At a minimum, one of the following preventive systems or its equivalent shall be used:
- 1.4.2.2 Curbing, culverting, gutters, sewers or other forms of drainage control to prevent or minimize the potential for storm water run-off to come into contact with significant sources of pollutants; or,
- 1.4.2.3 Roofs, covers or other forms of appropriate protection to prevent storage piles from exposure to storm water, and wind.

- 1.4.2.4 In addition to the minimum standards listed under Part 1.4.1.10.1 of this permit, the storm water pollution prevention plan shall include a complete discussion of measures taken to conform with the following applicable guidelines, other effective storm water pollution prevention procedures, and applicable Tribal rules, regulations and guidelines:
- 1.4.2.5 Liquid storage areas where storm water comes into contact with any equipment, tank, container, or other vessel used for Section 313 water priority chemicals.
- 1.4.2.5.1 No tank or container shall be used for the storage of a Section 313 water priority chemical unless its material and construction are compatible with the material stored and conditions of storage such as pressure and temperature, etc.
- 1.4.2.5.2 Liquid storage areas for Section 313 water priority chemicals shall be operated to minimize discharges of Section 313 chemicals. Appropriate measures to minimize discharges of Section 313 chemicals may include secondary containment provided for at least the entire contents of the largest single tank plus sufficient freeboard to allow for precipitation, a comprehensive spill contingency and integrity testing plan, and/or other equivalent measures.
- 1.4.2.6 Material storage areas for Section 313 water priority chemicals other than liquids. Material storage areas for Section 313 water priority chemicals other than liquids which are subject to runoff, leaching, or wind shall incorporate drainage or other control features which will minimize the discharge of Section 313 water priority chemicals by reducing storm water contact with Section 313 water priority chemicals.
- 1.4.2.7 Truck and rail car loading and unloading areas for liquid Section 313 water priority chemicals. Truck and rail car loading and unloading areas for liquid Section 313 water priority chemicals shall be operated to minimize discharges of Section 313 water priority chemicals. Protection such as overhangs or door skirts to enclose trailer ends at truck loading/unloading docks shall be provided as appropriate. Appropriate measures to minimize discharges of Section 313 chemicals may include: the placement and maintenance of drip pans (including the proper disposal of materials collected in the drip pans) where spillage may occur (such as hose connections, hose reels and filler nozzles) for use when making and breaking hose connections; a comprehensive spill contingency and integrity testing plan; and/or other equivalent measures.
- 1.4.2.8 Areas where Section 313 water priority chemicals are transferred, processed or otherwise handled. Processing equipment and materials handling equipment shall be operated so as to minimize discharges of Section 313 water priority chemicals. Materials used in piping and equipment shall be compatible with the substances handled. Drainage from process and materials handling areas shall minimize storm water contact with section 313 water priority chemicals. Additional protection such as covers or guards to prevent exposure to wind, spraying or releases from pressure relief vents from causing a discharge of Section 313 water priority chemicals to the drainage system shall be provided as appropriate. Visual inspections or leak tests shall be provided for overhead piping conveying Section 313 water priority chemicals without secondary containment.
- 1.4.2.9 Discharges from areas covered by paragraphs 1.4.1.10.2.1 through 1.4.1.10.2.6
- 1.4.2.9.1 Drainage from areas covered by paragraphs 1.4.1.10.2.1 through 1.4.1.10.2.6 of this Part should be restrained by valves or other positive means to prevent the discharge of a spill or other excessive leakage of Section 313 water priority chemicals. Where containment units are employed, such units may be emptied by pumps or ejectors; however, these shall be manually activated.

- 1.4.2.9.2 Flapper-type drain valves shall not be used to drain containment areas. Valves used for the drainage of containment areas should, as far as is practical, be of manual, open-and-closed design.
- 1.4.2.9.3 If facility drainage is not engineered as above, the final discharge of all in-facility storm sewers shall be equipped to be equivalent with a diversion system that could, in the event of an uncontrolled spill of Section 313 water priority chemicals, return the spilled material to the facility.
- 1.4.2.9.4 Records shall be kept of the frequency and estimated volume (in gallons) of discharges from containment areas.
- 1.4.2.9.5 Facility site runoff other than from areas covered by 1.4.1.10.2.1 through 1.4.1.10.2.6. Other areas of the facility (those not addressed in paragraphs 1.4.1.10.2.1 through 1.4.1.10.2.6, from which runoff which may contain Section 313 water priority chemicals or spills of Section 313 water priority chemicals could cause a discharge shall incorporate the necessary drainage or other control features to prevent discharge of spilled or improperly disposed material and ensure the mitigation of pollutants in runoff or leachate.
- 1.4.2.9.6 Preventive maintenance and housekeeping. All areas of the facility shall be inspected at specific intervals identified in the plan for leaks or conditions that could lead to discharges of Section 313 water priority chemicals or direct contact of storm water with raw materials, intermediate materials, waste materials or products. In particular, facility piping, pumps, storage tanks and bins, pressure vessels, process and material handling equipment, and material bulk storage areas shall be examined for any conditions or failures which could cause a discharge. Inspection shall include examination for leaks, wind blowing, corrosion, support or foundation failure, or other forms of deterioration or noncontainment. Inspection intervals shall be specified in the plan and shall be based on design and operational experience. Different areas may require different inspection intervals. Where a leak or other condition is discovered which may result in significant releases of Section 313 water priority chemicals to waters of the United States, action to stop the leak or otherwise prevent the significant release of Section 313 water priority chemicals to waters of the United States shall be immediately taken or the unit or process shut down until such action can be taken.
- 1.4.2.9.7 When a leak or noncontainment of a Section 313 water priority chemical has occurred, contaminated soil, debris, or other material must be promptly removed and disposed in accordance with Federal, Tribal, and local requirements and as described in the plan.
- 1.4.2.9.8 Facility security. Facilities shall have the necessary security systems to prevent accidental or intentional entry which could cause a discharge. Security systems described in the plan shall address fencing, lighting, vehicular traffic control, and securing of equipment and buildings.
- 1.4.2.9.9 Training. Facility employees and contractor personnel that work in areas where Section 313 water priority chemicals are use or stored shall be trained in and informed of preventive measures at the facility. Employee training shall be conducted at intervals specified in the plan, but not less than once per year, in matters of pollution control laws and regulations, and in the storm water pollution prevention plan and the particular features of the facility and its operation which are designed to minimize discharges of Section 313 water priority chemicals. The plan shall designate a person who is accountable for spill prevention at the facility and who will set up the necessary spill emergency procedures and reporting requirements so that spills and emergency releases of Section 313 water priority chemicals can be isolated and contained before a discharge of a Section 313 water priority chemical can occur. Contractor or temporary personnel shall be informed of facility operation and design features in order to prevent discharges or spills from occurring.

1.4.2.9.10 Engineering Certification. - The storm water pollution prevention plan for a facility subject to EPCRA Section 313 requirements for chemicals which are classified as 'Section 313 water priority chemicals' shall be reviewed by a Registered Professional Engineer and certified to by such Professional Engineer. A Registered Professional Engineer shall recertify the plan every 3 years thereafter or as soon as practicable after significant modification are made to the facility. By means of these certifications the engineer, having examined the facility and being familiar with the provisions of this Part, shall attest that the storm water pollution prevention plan has been prepared in accordance with good engineering practices. Such certifications shall in no way relieve the owner or operator of a facility covered by the plan of their duty to prepare and fully implement such plan.

1.4.3 Additional Requirements for Salt Storage.

1.4.3.1 Storage piles of salt used for deicing or other commercial or industrial purposes and which generate a storm water discharge associated with industrial activity which is discharged to a water of the United States shall be enclosed or covered to prevent exposure to precipitation, except for exposure resulting from adding or removing materials from the pile.

1.4.3.2 Dischargers shall demonstrate compliance with this provision as expeditiously as practicable, but in no event later than two years after the effective date of this permit. Piles do not need to be enclosed or covered where storm water from the pile is not discharged to waters of the United States.

2. MONITORING, RECORDING AND REPORTING REQUIREMENTS

- 2.1. Representative Sampling. Samples taken in compliance with the monitoring requirements established under Part 1. shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Sludge samples shall be collected at a location representative of the quality of sludge immediately prior to use-disposal practice.
- 2.2. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit. Sludge monitoring procedures shall be those specified in 40 CFR 503, or as specified in the permit.
- 2.3. Penalties for Tampering. The Act provides that any person who knowingly falsifies, tampers with, or renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two years, or by both. Second conviction is punishable by a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four years, or both.
- 2.4. Reporting of Monitoring Results. Effluent monitoring results obtained during the previous **month** shall be summarized and reported on **one** Discharge Monitoring Report Form (EPA No. 3320-1), postmarked no later than the 28th day of the month following the completed reporting period. If no discharge occurs during the reporting period, "no discharge" shall be reported. Until further notice, sludge monitoring results may be reported in the testing laboratory's normal format (there is no EPA standard form at this time), but should be on letter size pages. Whole effluent toxicity (biomonitoring) results must be reported on the most recent version of EPA Region 8's Guidance For Whole Effluent Reporting. Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with the Signatory Requirements (see Part 4.), and submitted to the Planning and Targeting Program, and the TAT Environmental Department at the following addresses:

original to: U.S. EPA, REGION 8
PLANNING AND TARGETING PROGRAM (8ENF-PT)
ATTENTION: PCS COORDINATOR
999 18TH STREET, SUITE 300
DENVER, COLORADO 80202-2466

copy to: Environmental Division
Three Affiliated Tribes
204 West Main
New Town, ND 58763

- 2.5. Additional Monitoring by the Permittee. If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR 136, 40 CFR 503, or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR. Such increased frequency shall also be indicated.

2.6. Records Contents. Records of monitoring information shall include:

- 2.6.1. The date, exact place, and time of sampling or measurements;
- 2.6.2. The initials or name(s) of the individual(s) who performed the sampling or measurements;
- 2.6.3. The date(s) analyses were performed;
- 2.6.4. The time(s) analyses were initiated;
- 2.6.5. The initials or name(s) of individual(s) who performed the analyses;
- 2.6.6. References and written procedures, when available, for the analytical techniques or methods used; and,
- 2.6.7. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

2.7. Retention of Records. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application. Records of monitoring required by this permit related to sludge use and disposal activities must be kept at least five years (or longer as required by 40 CFR 503). This period may be extended by request of the Director at any time. Data collected on site, data used to prepare the DMR, copies of Discharge Monitoring Reports, and a copy of this NPDES permit must be maintained on site.

2.8. Twenty-four Hour Notice of Noncompliance Reporting.

- 2.8.1. The permittee shall report any noncompliance which may endanger health or the environment as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of the circumstances. The report shall be made to the EPA, Region 8, Preparedness, Assessment and Response Program at (303) 293-1788, and the TAT Environmental Division at (701) 627-5469.
- 2.8.2. The following occurrences of noncompliance shall be reported by telephone to the EPA, Region 8, Technical Enforcement Program at (303) 312-6720 (8:00 a.m. - 4:30 p.m. Mountain Time) or the appropriate EPA State Program Manager, NPDES Program, (toll-free 866-457-2690) (8:00 a.m. - 4:30 p.m. Mountain Time) and the TAT Environmental Division at (701) 627-5469 (8:00 a.m. - 4:30 p.m. Central Time) by the first workday following the day the permittee became aware of the circumstances:
 - 2.8.2.1. Any unanticipated bypass which exceeds any effluent limitation in the permit (See Part 3.7., Bypass of Treatment Facilities.);
 - 2.8.2.2. Any upset which exceeds any effluent limitation in the permit (See Part 3.8., Upset Conditions.); or,
 - 2.8.2.3. Violation of a maximum daily discharge limitation for any of the pollutants listed in the permit to be reported within 24 hours.
- 2.8.3. A written submission shall also be provided to the USEPA, Office of Enforcement, Compliance and Environmental Justice, and to the TAT Environmental Division within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:
 - 2.8.3.1. A description of the noncompliance and its cause;
 - 2.8.3.2. The period of noncompliance, including exact dates and times;

- 2.8.3.3. The estimated time noncompliance is expected to continue if it has not been corrected; and,
- 2.8.3.4. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
- 2.8.4. The Director may waive the written report on a case-by-case basis for an occurrence of noncompliance listed under Part 2.8.2. above, if the incident has been orally reported in accordance with the requirements of Part 2.8.2.
- 2.8.5. Reports shall be submitted to the addresses in Part 2.4., Reporting of Monitoring Results.
- 2.9. Other Noncompliance Reporting. Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for Part 2.4. are submitted. The reports shall contain the information listed in Part 2.8.3.
- 2.10. Inspection and Entry. The permittee shall allow the Regional Administrator, or authorized representative (including an authorized contractor acting as a representative of the Administrator) upon presentation of credentials and other documents as may be required by law, to:
 - 2.10.1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
 - 2.10.2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - 2.10.3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,
 - 2.10.4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location.

3. COMPLIANCE RESPONSIBILITIES

- 3.1. Duty to Comply. The permittee must comply with all conditions of this permit. Any failure to comply with the permit may constitute a violation of the Clean Water Act and may be grounds for enforcement action, including, but not limited to permit termination, revocation and reissuance, modification, or denial of a permit renewal application. The permittee shall give the director advance notice of any planned changes at the permitted facility that will change any discharge from the facility, or of any activity that may result in failure to comply with permit conditions.
- 3.2. Penalties for Violations of Permit Conditions. The Clean Water Act provides for specified civil and criminal monetary penalties for violations of its provisions. However, the Federal Civil Penalties Inflation Adjustment Act of 1990, as amended by the Debt Collection Improvement Act of 1996, requires EPA to adjust the civil monetary penalties for inflation on a periodic basis. EPA previously adjusted its civil monetary penalties on December 31, 1996 (61 Fed. Reg. 69359-69365), with technical corrections and additions published on March 20, 1997 (62 Fed. Reg. 13514-13517) and June 27, 1997 (62 Fed. Reg. 35037-35041). On February 13, 2004 (69 Fed. Reg. 7121-7127) EPA once again adjusted its civil monetary penalties. The civil and criminal penalties, as of March 15, 2004, for violations of the Act (including permit conditions) are given below:

- 3.2.1. Any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed \$32,500 per day for each violation.
- 3.2.2. Any person who *negligently* violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$2,500 to \$25,000 per day of violation, or imprisonment for not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation, or by imprisonment for not more than 2 years, or both.
- 3.2.3. Any person who *knowingly* violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of \$5,000 to \$50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment for not more than 6 years, or both.
- 3.2.4. Any person who *knowingly* violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act. or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than \$250,000 or imprisonment for not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than \$500,000 or by imprisonment for not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than \$1,000,000 and can be fined up to \$2,000,000 for second or subsequent convictions.
- 3.2.5. Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Where an administrative enforcement action is brought for a Class I civil penalty, the assessed penalty may not exceed \$11,000 per violation, with a maximum amount not to exceed \$32,500. Where an administrative enforcement action is brought for a Class II civil penalty, the assessed penalty may not exceed \$11,000 per day for each day during which the violation continues, with the maximum amount not to exceed \$157,500.
- 3.3. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- 3.4. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
- 3.5. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and

maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit. However, the permittee shall operate, as a minimum, one complete set of each main line unit treatment process whether or not this process is needed to achieve permit effluent compliance.

- 3.5.1 The permittee shall, as soon as reasonable and practicable, but no later than six (6) months after the effective date of this permit, do the following as part of the operation and maintenance program for the wastewater treatment facility:
- 3.5.1.1. Have a current O & M Manual(s) that describes the proper operational procedures and maintenance requirements of the wastewater treatment facility;
 - 3.5.1.2. Have the O & M Manual(s) readily available to the operator of the wastewater treatment facility and require that the operator become familiar with the manual(s) and any updates;
 - 3.5.1.2. Have a schedule(s) for routine operation and maintenance activities at the wastewater treatment facility; and,
 - 3.5.1.3. Require the operator to perform the routine operation and maintenance requirements in accordance with the schedule(s).
 - 3.5.1.4. Deadlines for O&M Manual(s) Preparation.

The O&M Manual(s)

- 3.5.1.4.1 Shall be prepared and submitted to the permit issuing authority for review and approval no later than six months after the effective date of this permit (and updated at a minimum of every two years or more frequently if deemed appropriate). The plan shall be submitted to the U.S. EPA Region 8 NPDES Permits Unit at the following address:

EPA Region 8 NPDES Permits Unit
Mailcode: 8P-W-P
999 18th Street, Suite 300
Denver, CO 80202-2466

A copy of the plan shall also be submitted to the Three Affiliated Tribes Environmental Department at the following address:

Environmental Division
Three Affiliated Tribes
204 West Main
New Town, ND 58763

3.5.2. The permittee shall maintain a daily log in a **bound notebook(s)** containing a summary record of all operation and maintenance activities at the wastewater treatment facility. At a minimum, the notebook shall include the following information:

- 3.5.2.1. Date and time;
- 3.5.2.2. Name and title of person(s) making the log entry;
- 3.5.2.3. Name of the persons(s) performing the activity;
- 3.5.2.4. A brief description of the activity; and,
- 3.5.2.5. Other information, as appropriate.

The permittee shall maintain the notebook in accordance with proper record-keeping procedures and shall make the log available for inspection, upon request, by authorized representatives of the U.S. Environmental Protection Agency or the TAT Environmental Division.

3.6. Removed Substances. Collected screenings, grit, solids, sludge, or other pollutants removed in the course of treatment shall be buried or disposed in a manner consistent with all applicable federal and tribal regulations (i.e., 40 CFR 257, 40 CFR 258, 40 CFR 503, 40 CFR 268 and in a manner so as to prevent any pollutant from entering any waters of the United States or creating a health hazard. **In addition, the use and/or disposal of sewage sludge shall be done under the authorization of an NPDES permit issued for the use and/or disposal of sewage sludge by the appropriate NPDES permitting authority for sewage sludge.** Sludge/digester supernatant and filter backwash shall not be directly blended with or enter either the final plant discharge and/or waters of the United States.

3.7. Bypass of Treatment Facilities.

3.7.1. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Parts 3.7.2. and 3.7.3.

3.7.2. Notice:

3.7.2.1. Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass to the USEPA, Technical Enforcement Program, and the TAT Environmental Division.

3.7.2.2. Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required under Part 2.8., Twenty-four Hour Noncompliance Reporting, to the USEPA, Technical Enforcement Program, and the TAT Environmental Division.

3.7.3. Prohibition of bypass.

3.7.3.1. Bypass is prohibited and the Director may take enforcement action against a permittee for a bypass, unless:

3.7.3.1.1. The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

3.7.3.1.2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and,

- 3.7.3.1.3. The permittee submitted notices as required under Part 3.7.2.
- 3.7.3.2. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in Part 3.7.3.1.
- 3.8. Upset Conditions
- 3.8.1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology based permit effluent limitations if the requirements of Part 3.8.2. are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review (i.e., Permittees will have the opportunity for a judicial determination on any claim of upset only in an enforcement action brought for noncompliance with technology-based permit effluent limitations).
- 3.8.2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
- 3.8.2.1. An upset occurred and that the permittee can identify the cause(s) of the upset;
- 3.8.2.2. The permitted facility was at the time being properly operated;
- 3.8.2.3. The permittee submitted notice of the upset as required under Part 2.8., Twenty-four Hour Notice of Noncompliance Reporting; and,
- 3.8.2.4. The permittee complied with any remedial measures required under Part 3.4., Duty to Mitigate.
- 3.8.3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.
- 3.9. Toxic Pollutants. The permittee shall comply with effluent standards or prohibitions established under Section 307 (a) of the Act for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.
- 3.10. Changes in Discharge of Toxic Substances. Notification shall be provided to the Director as soon as the permittee knows of, or has reason to believe:
- 3.10.1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
- 3.10.1.1. One hundred micrograms per liter (100 ug/L);
- 3.10.1.2. Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter 500 ug/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
- 3.10.1.3. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or,
- 3.10.1.4. The level established by the Director in accordance with 40 CFR 122.44(f).
- 3.10.2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

- 3.10.2.1. Five hundred micrograms per liter (500 ug/L);
- 3.10.2.2. One milligram per liter (1 mg/L) for antimony;
- 3.10.2.3. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or,
- 3.10.2.4. The level established by the Director in accordance with 40 CFR 122.44(f).

4. GENERAL REQUIREMENTS

- 4.1. Planned Changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
 - 4.1.1. The alteration or addition could significantly change the nature or increase the quantity of pollutant discharged. This notification applies to pollutants which are not subject to effluent limitations in the permit; or,
 - 4.1.2. There are any planned substantial changes to the existing sewage sludge facilities, the manner of its operation, or to current sewage sludge management practices of storage and disposal. The permittee shall give the Director notice of any planned changes at least 30 days prior to their implementation.
 - 4.1.3. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source.
- 4.2. Anticipated Noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- 4.3. Permit Actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- 4.4. Duty to Reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The application should be submitted at least 180 days before the expiration date of this permit.
- 4.5. Duty to Provide Information. The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.
- 4.6. Other Information. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Director, it shall promptly submit such facts or information.
- 4.7. Signatory Requirements. All applications, reports or information submitted to the Director shall be signed and certified.
 - 4.7.1. All permit applications shall be signed by either a principal executive officer or ranking elected official.

- 4.7.2. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
- 4.7.2.1. The authorization is made in writing by a person described above and submitted to the Director; and,
 - 4.7.2.2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
- 4.7.3. Changes to authorization. If an authorization under Part 4.7.2. is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part 4.7.2. must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.
- 4.7.4. Certification. Any person signing a document under this section shall make the following certification:
- "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."
- 4.8. Penalties for Falsification of Reports. The Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.
- 4.9. Availability of Reports. Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Director. As required by the Act, permit applications, permits and effluent data shall not be considered confidential.
- 4.10. Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act.
- 4.11. Property Rights. The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, tribal or local laws or regulations.
- 4.12. Severability. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
- 4.13. Transfers. This permit may be automatically transferred to a new permittee if:

- 4.13.1. The current permittee notifies the Director at least 30 days in advance of the proposed transfer date;
- 4.13.2. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,
- 4.13.3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in Part 4.13.2.
- 4.14.1. Permittees in Indian Country. EPA is issuing this permit pursuant to the Agency's authority to implement the Clean Water Act NPDES program in Indian country, as defined at 18 U.S.C. 1151.
- 4.14.2. Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations (and compliance schedule, if necessary), or other appropriate requirements if one or more of the following events occurs:
 - 4.15.1. Water Quality Standards: The water quality standards of the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.
 - 4.15.2. Wasteload Allocation: A wasteload allocation is developed and approved by the TAT Tribes and/or EPA for incorporation in this permit.
 - 4.15.3. Water Quality Management Plan: A revision to the current water quality management plan is approved and adopted which calls for different effluent limitations than contained in this permit.
- 4.16. Toxicity Limitation-Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include whole effluent toxicity limitations if whole effluent toxicity is detected in the discharge.

FACT SHEET/STATEMENT OF BASIS

MHA NATION CLEAN FUELS REFINERY MAKOTI, NORTH DAKOTA

Facility Name: MHA Nation Clean Fuels Refinery

NPDES Permit No: ND-0030988

Responsible Official: Tex G. Hall, Chairman
Fort Berthold Tribal Business Council
Three Affiliated Tribes

Facility Contact: Horace Pipe, Refinery Project Manager

Phone Number: (701) 726-5894

Permit Type: New Major Industrial Facility/Indian Country

Background Information

This new permit is proposed for wastewater discharges associated with the planned Mandan, Hidatsa and Arikara Nation (MHA Nation) Clean Fuels Refinery to be located on the Fort Berthold Indian Reservation near Makoti in Ward County, North Dakota. The MHA Nation applied to EPA Region VIII for an NPDES permit on November 9, 2004.

The proposed refinery is a new facility yet to be constructed. Construction is scheduled to begin in 2007. Once operational, the facility will process synthetic crude oil and local butane supplies into various petroleum products including gasoline, diesel and other distillate blending fuels. Anticipated capacity of the facility is 10,000 barrels per stream day (BPSD) of synthetic crude and 3000 BPSD of field butane. Syncrude feedstock for the refinery will originate from northern Alberta, Canada and will be supplied via an already existing pipeline nearby. Field butane and natural gas will be supplied locally. A soybean based 300 BPSD Bio-diesel refinery is also planned for the site but may not be constructed as part of the initial effort.

The proposed refinery will include atmospheric distillation, hydrotreating, and hydrocracking processing units for the synthetic crude, a hydrogen plant utilizing natural gas, and butane processing units. Other areas of the proposed refinery affecting wastewater discharges include: rail and truck loading and unloading facilities, a tank farm, blending facilities, office and maintenance buildings, and fire suppression system. Contaminated (oily) stormwater will be managed separately from uncontaminated (non-oily) stormwater.

In the DEIS for the proposed facility, there are two different refinery configurations proposed. One is the Proposed Alternative (DEIS Figure 2-7) and the other under Alternative 4, a reconfiguration designed to minimize impacts to onsite wetlands and replacing the wastewater holding ponds with a tank system (DEIS Figure 2-15). Both configurations are being considered for final design and will be evaluated as part of the draft NPDES permit.

DEIS Figure 2-7

Site Layout (Proposed Alternative DEIS Figure 2-7)

DEIS Figure 2-15

Site Layout (Alternative 4 DEIS Figure 2-15)

Wastewater Sources and Treatment

There are four sources of wastewater associated with the operation of the proposed MHA Nation Clean Fuels Refinery:

- Process wastewater from refinery operations
- Contaminated (oily) stormwater from process areas of the refinery
- Uncontaminated (non-oily) stormwater from areas outside the process operations of the refinery
- Sanitary wastewater (POTENTIAL)

Process Wastewater

Process wastewater discharges associated with petroleum refining operations will be collected and treated prior to recycle back to refinery operations or discharged. The raw water source for the refinery operations is well water. The refinery design includes plans to utilize recycled water from certain operations to the extent feasible. Make-up water for process operations is treated prior to use in the boilers and steam generators for the refinery operations (hydrogen production, process units, process heaters). Blowdown from the boilers will be sent to a water recycling plant and recycled as make-up water. Condensate return flow from the process heaters can also be recycled as make-up water or be sent to the wastewater treatment processes if the quality becomes a problem for use as recycle. Other process wastewater includes water that is removed during crude processing operations in individual refinery units. All process wastewater will be collected in segregated closed drainage pipes and routed to either a steam stripper to remove VOCs and benzene or to a sour water stripper (SWS) to remove sulfides and ammonia. The process wastewater is then sent directly to the wastewater treatment plant. The wastewater treatment unit processes include the following units: API separator ► dissolved air floatation ► equalization tank ► biological treatment ► clarifier.

Under the Proposed Alternative in the DEIS, the wastewater (after treatment) will be directed to one of two final holding ponds. The treated process wastewater can then either sent as recycle back to make-up water system for process operations or discharged. DEIS Figure 2-3 shows the operation with no recycling and DEIS Figure 2-4 shows the operation with full recycling of treated wastewater.

Under Alternative 4 in the DEIS, the wastewater treatment system will be designed to meet the definitions of wastewater treatment unit and tank system under RCRA 40 CFR 260. The biological treatment will meet the aggressive biological treatment definition under hazardous waste rules at 40 CFR 261.31(b). The wastewater is then routed to final holding tanks prior to recycle or discharge. See DEIS Figure 2-16.

Potential pollutants contained in the discharge of process wastewater will be evaluated and limited under Outfall 002 in the proposed NPDES permit for this facility.

DEIS Figure 2-3

Wastewater Flow Diagram (Proposed Alternative DEIS Figure 2-3)

DEIS Figure 2-4

Wastewater Flow Diagram (Proposed Alternative DEIS Figure 2-4)

DEIS Figure 2-16

Wastewater Flow Diagram (Alternative 4 DEIS Figure 2-16)

Contaminated (oily) Stormwater

Contaminated (oily) stormwater will be collected in segregated drains that collect runoff from precipitation that falls directly on the areas of the refinery that have a high potential for contact with oil, products and byproducts produced during refining operations. Areas surrounding each process unit, the loading and unloading areas, and equipment cleaning areas are considered as having a high potential for contact with those materials. The high potential contact areas will be paved and curbed to prevent precipitation runoff and release of the wastewater to the area outside the area.

(Under the Proposed Alternative in the DEIS) Contaminated (oily) stormwater will be collected in segregated drains and sent to a holding pond. The wastewater will be tested and if further treatment is required, it will be routed to the wastewater treatment facility. If further treatment is not required, the wastewater will be directed to one of the two final effluent holding ponds and recycled or discharged through Outfall 002 as described above for the process wastewater.

(Under Alternative 4 in the DEIS) The contaminated (oily) stormwater will be collected in segregated drains and sent to a series of surge tanks. The wastewater will then be normally sent for further treatment in the wastewater treatment unit. In the event the capacity of the surge tanks and/or wastewater treatment unit hydraulic capacity is exceeded, the segregated oily stormwater can be sent to a series of release tanks and discharged or held to return back to the wastewater treatment unit if further treatment is necessary to meet discharge requirements. The treated wastewater could then be recycled or discharged through Outfall 002 as described above for the process wastewater. An additional discharge outfall (002a) will be required under this alternative as the holding capacity for treated wastewater has been substantially reduced and a discharge of segregated stormwater due to precipitation events may be necessary.

Potential pollutants contained in the discharge of contaminated (oily) stormwater will be evaluated and limited under Outfall 002 and Outfall 002a (for Alternative 4 in the DEIS) in the proposed NPDES permit.

Uncontaminated (non-oily) Stormwater

Uncontaminated (non-oily) stormwater will be collected as segregated runoff from precipitation that falls on areas of the refinery outside the areas considered as high potential contact with oil, product and byproducts. These areas within the boundaries of the site include roads in the process areas, unpaved areas, parking areas, building runoff, etc. The runoff from the site will be conveyed for collection using surface ditches next to roadways, etc. There may also be some site runoff contribution from upgradient areas surrounding the refinery property that will contribute to the runoff from the site. The site configuration is designed to let precipitation flow generally towards the lowest elevation of the site where it will be collected, piped and sent to a

large holding pond. The wastewater can then be used as make-up water for the firewater system as necessary or discharged.

The management of uncontaminated (non-oily) stormwater will be similar under the Proposed Alternative and Alternative 4 under the DEIS. Potential pollutants contained in the discharge of uncontaminated (non-oily) stormwater are evaluated and limited under Outfall 001 in the proposed NPDES permit.

(POTENTIAL) Sanitary Wastewater

Sanitary wastewater will be collected and treated in a package wastewater treatment plant. Flow is projected to be approximately 3.5 gpm or 5000 gallons per day. Potential pollutants contained in the discharge of sanitary wastewater are evaluated and limited under Outfall 003 in the proposed NPDES permit.

New Source Determination

On December 2, 2004, EPA Region 8 issued a New Source Determination for the proposed facility as required by 40 CFR §122.21(i)(2)(ii). EPA Region 8 determined that the proposed facility is in fact a new source (defined in 40 CFR §122.2) and is subject to New Source Performance Standards (NSPS) for the Petroleum Refining Point Source Category pursuant to 40 CFR §419. The New Source Determination was public noticed between December 23 and 29, 2004 in several newspaper publications in the geographical area of the proposed site location. A public comment period of 30 days was opened by the public notice and ended on January 29, 2005. One phone call was received by EPA during the public comment period from the Mountrail County Record requesting additional information on the proposed facility. No challenges to EPA's New Source Determination were received during the public comment period.

EPA NPDES Major/Minor Determination

EPA completed an NPDES Permit Rating Work Sheet for the proposed MHA Nation Clean Fuels Refinery in accordance with EPA policy on major/minor facility classification. (USEPA Memorandum from James Elder to Regional Water Management Division Directors, June 27, 1990). The proposed facility scored 95 points and received a ranking of "major". A minimum score of 80 is required for a "major" ranking. The Rating Work Sheet is contained in the Administrative Record for this permit.

EPA's Environmental Review Requirements

Since the proposed facility was determined by EPA to be New Source, and the issuance of an NPDES permit will be a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act of 1970 (NEPA), the MHA Nation is required to comply with EPA's environmental review procedures for the New Source NPDES Program requirements of 40 CFR Part 6, Subparts A-D and F.

The United States Bureau of Indian Affairs (BIA) and EPA in cooperation with the U.S. Army Corps of Engineers, and the MHA Nation are developing an Environmental Impact Statement (EIS) that will fulfill both BIA and EPA environmental review requirements. A draft EIS (DEIS) will be completed prior to public notice of a proposed NPDES permit for the facility [40 CFR §124.10(b)] and will be included in the Administrative Record for the draft permit in accordance with 40 CFR §124.9. A final EIS (FEIS), including a recommendation to issue or deny an NPDES permit, will be included in the Administrative Record for the final NPDES permit in accordance with 40 CFR §124.18. If the FEIS recommends denying the NPDES permit, reasons for the recommendation will be identified and a list of measures, if any, which the MHA nation could take to cause the recommendation to be changed. If the FEIS recommends issuing the final permit, the FEIS will recommend the actions, if any, which the MHA Nation should take to prevent or minimize any adverse environmental impacts.

Endangered Species Act Coordination

Under the February 22, 2001 Memorandum of Agreement with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, EPA agreed to implement actions to demonstrate compliance with the Endangered Species Act (ESA) for certain activities under the NPDES permitting program. In accordance with the MOA, EPA must make a determination of effects on Threatened and Endangered Species (both listed and candidate species) for this federal action of issuing an NPDES permit.

For this action, EPA has determined that the issuance of this permit may affect but is not likely to adversely affect Threatened and Endangered species that are present in the project area. EPA will include information regarding its determination and related correspondence between EPA and the U.S. Fish and Wildlife Service in the Administrative Record kept for this permit.

EPA's determination regarding this permit's potential to affect Threatened and Endangered species is based on the permit requirements which have been included in the draft NPDES permit after considering existing Tribally-adopted water quality standards for the Fort Berthold Indian Reservation, and the State of North Dakota water quality standards without an allowance for mixing zones, i.e. end-of-pipe.

Since this is a new facility and there is no existing monitoring data for the discharge, the permit also contains additional monitoring requirements for priority pollutant compounds that may be present but are not anticipated. Re-opener provisions in the permit allow for inserting additional water quality based effluent limits protective of aquatic life and public water supply uses when unanticipated pollutants are detected during this additional monitoring.

National Historic Preservation Act

Section 106 of the National Historic Preservation Act requires that federal agencies take into account the effects of a federal undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. According to Section 301 of the act, "undertaking" means a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including (a) those carried out by or on behalf of the agency, (b) those carried out with federal financial assistance, (c) those requiring a federal permit license, or approval, and (d) those subject to state or local regulation administered pursuant to a delegation or approval by a federal agency. Section 106 compliance also applies to non-federal lands when federal funding, licensing, permitting, and approval are required.

This permitted effluent discharge is not expected to affect historic or cultural resources. Moreover, because the locations of the outfalls were disturbed previously, construction of the outfalls would not affect historic or cultural resources.

The proposed facility is not expected to substantially affect cultural resources. The till plain and pothole setting of the project area has soils that are generally good for cultivation, but support a comparatively low diversity of natural resources. These conditions correspond to a low potential for prehistoric or historic cultural resources other than readily visible farm complexes.

A records search for the project site was completed through the North Dakota State Historical Society. The records search indicated that no cultural resource investigations and no known sites are on file for the project area. The North Dakota SHPO (Swenson 2005) and the Cultural Preservation Office of the Three Affiliated Tribes (Crows Breast 2005) have reviewed the available information for the project area. Both offices have concurred that there is a low potential for significant cultural resources in the project area, and both have recommended a determination of no historic properties affected.

The farm complex near the refinery site will not be affected by the proposed action and the farm complexes near the pipeline and power line corridors can be avoided. The primary affect resulting from implementation of this alternative would be modification of the old Soo Line Railroad branch line that runs through the property. The line itself would not be moved or removed, but a new siding would be constructed from the line into the refinery. This addition would not adversely impact the historic character of the rail line. The farm house and outbuildings would not be disturbed for construction of the refinery or production of the forage for buffalo.

Project Location

The proposed MHA Nation Clean Fuels Refinery will be located on 190 acres of land that is part of a 469 acre parcel of land purchased by the Three Affiliated Tribes (MHA Nation) on July 22, 2003. The remaining land, 279 acres, is proposed for growing feed for the MHA Nation buffalo herd. The land is located in the northeast corner of the Fort Berthold Indian Reservation and in Ward County, North Dakota. Following the purchase of the land, the MHA Nation requested the Department of the Interior, Bureau of Indian Affairs (BIA) accept the land into trust status. The land transfer is considered a major federal action and subject to environmental review in accordance with the National Environmental Policy Act (NEPA). BIA (in cooperation with EPA, F&WS and the MHA Nation) has primary responsibility to fulfill the NEPA requirements for the land transfer.

The general land area encompassing the proposed MHA Nation Clean Fuels Refinery site consists of nearly level glacial till plains and rolling hills. The area is within the glaciated prairie pothole region and includes numerous seasonal, semi-permanent, and permanent wetlands that capture seasonal snowmelt and rainwater. Prior to agricultural development of the land, mixed cool and warm season prairie grasses were predominant with intermix broad-leaved annual and perennial forbs and numerous legumes. Current land use is generally dry land farming of cereal crops (wheat and barley) intermixed with cattle ranching in the drier and hillier portions of the region.

The site itself is largely underdeveloped agricultural property with adjacent land primarily planted with wheat and barley. The site elevation ranges between 2074 and 2112 feet above mean sea level and its topography is relatively flat with slopes less than three percent. Drainage in the site area is generally east to west towards tributaries of the Missouri River (Lake Sakakawea). The East Fork of Shell Creek runs adjacent to the northern border of the project site and generally flows west towards Lake Sakakawea. Characteristics of the site include seasonal and semi-permanent wetlands, mixed grass prairie, wooded draws, intermittent seasonal drainages, and seasonal crops.

The climate of the site area is characterized by wide seasonal and diurnal temperature and precipitation variations. Average annual precipitation is 16.06 inches with the highest average monthly values (3.66 inches) in June and the lowest monthly average (0.33 inches) in February. Summer thunderstorms occur on about 34 days in the year and account for a majority of the total annual precipitation amounts. Approximately 80 percent of the annual precipitation total occurs between April and September. Spring snowmelt drains into wetland depressions and the depth of ponded water varies dependant on the amount of snow cover. In late spring and summer, these wetland depressions receive direct precipitation and runoff from the surrounding watershed and by late summer, the wetlands draw down or dry through evaporation and seepage.

Prairie Pothole Wetlands

Within the proposed MHA Nation Clean Fuels Refinery site boundaries, sixteen prairie pothole wetland areas totaling 33.6 acres were identified in a field investigation performed by Greystone Environmental Consultants, Inc. during development of the DEIS. Wetlands delineation was done in accordance with Level 2 Routine On-site Method as described in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987). The prairie pothole wetlands within the project area were classified as palustrine wetlands and further characterized as Palustrine-Emergent-Temporarily-Flooded (PEMA), Palustrine-Emergent-Seasonally-Flooded (PEMC) and Palustrine-Emergent-Semi-permanently-Flooded (PEMF).

The largest wetland characterized in the field investigation was an 11.7 acre wetland in the NW1/4 of Section 19. The location is on the lowest elevation contour in Section 19 and was classified as a PEMF wetland. The wetland collects precipitation and runoff primarily from the local watershed. This wetland likely contains areas of open water during certain times of the year and is drained by a culvert on the northern boundary. The culvert is constructed under Highway 23 and after flowing under an additional culvert under the railroad, drains to a tributary of the East Fork of Shell Creek. The large wetland appears to receive water from a north-south wetland swale that traverses the site on the west side of the proposed site. This wetland swale appears to receive surface flow from an off-site wetland across the south property boundary. Flow of the water is generally from south to north across the site. According to the preliminary site plans, the wetland swale is the location where treated process wastewater and stormwater discharges will be located. Soils in this wetland swale were characterized as Parnell (Pa) and consist of a silt loam with low chromas. The delineation also indicated that the

hydrology may be influenced by groundwater due to the depth of the elevation contour; however, the area was dry during the October 2003 field investigation.

Both the 11.7 acre wetland and the wetland swale have been determined to be jurisdictional wetlands by the U.S. Army Corps of Engineers(2005) and will be considered waters of the U.S. for establishing effluent limitations and conditions in the proposed NPDES permit.

Receiving Water

As described above, the location receiving discharges from the proposed MHA Nation Clean Fuels Refinery will be the wetland swale located in the NW1/4 of Section 19, Township 152N, Range 87W. The wetland swale is tributary to the East Fork of Shell Creek through natural drainageways (wetlands, sloughs, swales) and constructed culverts under Highway 23 and the railroad, north of the wetland areas. Major site construction activities are not expected to occur in this area. Some modification of the north-south wetland swale that feeds into the wetland will take place during construction of the facility and drainage of direct precipitation on the site and watershed runoff into the wetland area may somewhat change the hydrologic characteristics of the wetland.

Tributaries of the East Fork of Shell Creek including the natural drainageways and the wetland swale discharge location best describe the receiving water for discharges from the proposed facility. No historic flow measurements are available for the tributaries but are assumed to be zero cubic feet per second (cfs). due to the hydrologic characteristics of the East Fork of Shell Creek described above. No flow data is available for the wetland swale or wetland system that will receive discharges from the facility but it will be assumed that there are times of the year that the low flow in the wetlands is zero cfs.

The East Fork of Shell Creek flows generally in a westerly direction towards Lake Sakakawea before entering the Van Hook Arm of the Lake at Parshall Bay, near Parshall, ND. The East Fork of Shell Creek is generally ephemeral and likely has extended periods with very low or no flow during the year. A USGS gage station is located on the East Fork of Shell Creek near Parshall, ND approximately fifteen miles from the project site location. There are no other monitoring stations closer to the site. The gage station (06332523) was established in 1991 and collects continuous data on stream flow. For the period from 1991 through 2002, annual mean flow ranges from 2.19 cubic feet per second (cfs) in 1992 to 15.1 cfs in 1999. Peak daily flows for the same period of record range from 31 cfs on May 12, 2000 to 1,170 cfs on March 27, 1999. Flow in the East Fork of Shell Creek is highly dependant on summer precipitation events and runoff that occurs during March and April. Low flows occur during winter months each year and in 2001, monthly low flows of zero cfs were recorded in January, February, August and September.

The East Fork of Shell Creek remains primarily within the external boundaries of the Fort Berthold Indian Reservation as it travels towards Lake Sakakawea, however, approximately one mile from the proposed project site it traverses the boundary of the

Reservation into the State of North Dakota for a short distance, prior to returning back to the Reservation. As such, water quality based effluent limits (WQBELs) developed for the proposed facility will take into consideration both Tribally-adopted water quality standards and State of North Dakota water quality standards.

Monitoring Data for East Fork of Shell Creek

Limited data is available on water quality for the East Fork of Shell Creek in the vicinity of the proposed project location. Data was collected periodically on USGS gage station 06332523 located near the mouth below Parshall, ND. In 2001, Confluence Consulting performed additional monitoring at three locations of the East Fork of Shell Creek. The following data was presented in the *Water Resources Technical Report* developed by Greystone Environmental Consultants Inc. as part of the DEIS.

USGS April 1990 – June 1991

	<u>Maximum</u>	<u>Minimum</u>	<u>Median</u>
pH (s.u.)	9.9	8.4	8.9
Dissolved oxygen (mg/L)	10.8	7.3	--
Hardness (mg/L as CaCO ₃)	420	240	--

July 1991 – September 1992

	<u>Maximum</u>	<u>Minimum</u>	<u>Median</u>
pH (s.u.)	9.1	8.1	8.7
Dissolved oxygen (mg/L)	11.6	4.6	6.8
Hardness (mg/L as CaCO ₃)	470	250	350

USGS 1991-2002

	<u>Maximum</u>	<u>Minimum</u>	<u>Median</u>	<u>Mean</u>
pH (s.u.)	8.80	7.80	8.37	8.40
Dissolved oxygen (mg/L)	12.50	4.60	8.82	9.05

2001 Stream Survey

	<u>2A</u>	<u>2B</u>	<u>2C</u>
Temperature °C	20.2	18	18.9

Water Quality Standards (WQS)

Tribally-adopted Water Quality Standards

The MHA Nation adopted water quality standards for surface waters within the external boundaries of the Fort Berthold Indian Reservation (Tribally-adopted WQS) through a resolution adopted by the Tribal Business Council of the Three Affiliated Tribes of the Fort Berthold Reservation on May 11, 2000. The Tribally-adopted WQS are intended to protect surface water designated uses through specific numeric and narrative water quality criteria and antidegradation provisions. The Tribally-adopted WQS have not yet been federally approved by EPA, however, they will be considered for establishing effluent limitations for discharges from the proposed MHA Nation Clean Fuels Refinery in accordance with EPA's *Guidance on EPA's NPDES and Sludge Management Permit Procedures on Federal Indian Reservations* (November 16, 1993).

Wetlands: The Tribally-adopted WQS apply to all wetlands on the Reservation that are not constructed and considered "waters of the Tribes". The wetland located in the NW1/4 of Section 19 falls within these criteria. The Tribally-adopted WQS indicate wetlands shall be subject to narrative criteria and applicable antidegradation provisions and shall be generally considered capable of supporting aquatic biota (e.g. fish, macroinvertebrates, amphibians or hydrophytic vegetation) on a regular or periodic basis. The goal of water quality is described as maintaining naturally occurring levels within the natural range of variation for the individual wetland. For substances that are not naturally occurring, water quality requirements shall be based on protecting uses of the wetland consistent with antidegradation requirements, the Tribes narrative water quality criteria assigned to hydrologically connected surface waters, or appropriate criteria guidance issued by the Environmental Protection Agency.

The Tribally-adopted WQS include a Mixing Zone and Dilution Policy that prohibits mixing zones for point source discharges into wetlands. Paragraph (d) of the policy states "*Where dilution flow is not available at critical conditions, the discharge limits will be based on achieving water quality criteria at the end-of-pipe. In addition, discharge limits for all point source discharges to a wetland will be based on achieving water quality criteria at the end-of-pipe.*"

East Fork of Shell Creek: The Tribally-adopted WQS also apply to the East Fork of Shell Creek within the external boundaries of the Fort Berthold Indian Reservation. The Tribally-adopted WQS list designated uses for the East Fork of Shell Creek including Public Water Supply, Primary Contact Recreation, Secondary Contact Recreation, Coldwater Aquatic Life, Warmwater Aquatic Life, Industrial Water Supply, Agriculture and Navigation. Numeric criteria applicable to support aquatic life and public water supply (human health) are listed in Tables 1 & 2 of the Tribally-adopted WQS. The criteria include acute and chronic concentrations for organic constituents, pesticides, and metals as well as non-conventional pollutants such as hydrogen sulfide, ammonia nitrogen, temperature, etc., and indicator parameters such as dissolved oxygen.

These criteria were evaluated against information provided by the MHA Nation in their NPDES permit application, EPA Effluent Guidelines and Standards for the Petroleum Refining Point Source Category (40 CFR Part 419) and the *Development Document for Effluent Limitations Guidelines and Standards for the Petroleum Refining Point Source Category, Final October 1982, EPA 440/1-82/014*, in assessing reasonable potential for discharges to cause or contribute to exceedances of water quality standards. The list of appropriate criteria for this permit includes all pollutants that have been reported as expected to be present in the discharge at any concentration above the applicable analytical detection limit for the pollutant and where a water quality standard for that pollutant exists. Table 1 below lists the criteria for pollutants expected to be present in the discharges from the proposed MHA Nation Clean Fuels Refinery.

TABLE 1
Tribally-Adopted WQS (concentrations are dissolved ug/L)

Pollutant	CAS No.	Aquatic Life Acute (CMC)	Aquatic Life Chronic (CCC)	Aquatic Life Fish Cons.	Public Water Supply
Benzene	71-43-2	--	--	71	1.2
Ethyl benzene	100-41-4	--	--	29000	700
Toluene	108-88-3	--	--	200000	1000
Xylenes	1330-20-7	--	--	--	10000
Phenol	108-95-2	--	--	4600000	300
Hydrogen Sulfide	7783-06-4	--	2	--	--
Ammonia as N	7664-41-7	(b)	(b)	--	--
Barium (tr)	7440-39-3	--	--	--	2000
Aluminum (tr)	7429-90-5	750	87	--	--
Cadmium (tr)	7440-43-9	13.5 (a)	2.7 (a)	84	5.0
Chromium (III) (tr)	7440-47-3	4270 (a)	509 (a)	--	100 (T)
Chromium (VI)		16	11	3400	100
Copper (tr)	7440-50-8	49.9 (a)	30.2 (a)	--	1000
Iron (tr)	7439-89-6	--	1000	--	300
Manganese (tr)	7439-96-5	--	--	--	50
Lead (tr)	7439-92-1	331 (a)	12.9 (a)	--	15
Mercury (T)	7439-97-6	2.4	0.012	0.051	0.050
Nickel (tr)	7440-02-0	3592 (a)	399 (a)	4600	100
Selenium (tr)	7782-49-2	20	5	9000	50
Silver (tr)	7440-22-4	26.8 (a)	--	110000	170
Zinc (tr)	7440-66-6	297 (a)	269 (a)	69000	5000
Chlorine (TRC)	7782-50-5	19	11	--	--
Chloride	16887-00-6	860000	230000	--	--
Fluoride	7782-41-4	--	--	--	4000
Nitrite as N	14797-65-0	--	--	--	1000
Nitrate as N	14797-55-8	--	--	--	10000
pH (s.u.)		7.0-9.0	7.0-9.0	7.0-9.0	--

tr- total recoverable; T- total

- (a) Hardness based concentrations for metals calculated using a hardness of 300 mg/L as CaCO₃ and the following formulas:

$$CMC = \exp\{ma[\ln(\text{hardness})] + ba\} \quad CCC = \exp\{mc[\ln(\text{hardness})] + bc\}$$

	<u>ma</u>	<u>ba</u>	<u>mc</u>	<u>bc</u>
cadmium	1.128	-3.828	0.7852	-3.490
copper	0.9422	-1.464	0.8545	-1.465
chromium (III)	0.8190	3.688	0.8190	1.561
lead	1.273	-1.460	1.273	-4.705
nickel	0.8460	3.3612	0.8460	1.1645
silver	1.72	-6.52	-	-
zinc	0.8473	0.8604	0.8473	0.7614

- (b) Ammonia as N (unionized) is calculated using the following formula:

$$CMC = 0.52/FT/FPH/2 \text{ where:}$$

$$FT = 10^{0.03(20-TCAP)} ; TCAP \leq T \leq 30$$

$$= 10^{0.03(20-T)} ; 0 \leq T < TCAP$$

$$FPH = 1 ; 8 \leq pH \leq 9$$

$$= (1 + 10^{7.4-pH})/1.25 ; 6.5 \leq pH < 8$$

$$TCAP = 20 C ; \text{coldwater aquatic life use (IIIA)}$$

$$= 25 C ; \text{warmwater aquatic life use (IIIB)}$$

The usual CMC averaging period of one hour may not be appropriate if excursions of concentrations greater than 1.5 times the average occur during the hour; in such cases, a shorter averaging period may be needed. To convert these values to mg/L as N, multiply by 0.822.

$$CCC = 0.80/FT/FPH/RATIO \text{ where FT and FPH are as above and :}$$

$$RATIO = 13.5 ; 7.7 \leq pH \leq 9$$

$$= 20 (10^{7.7-pH}/1 + 10^{7.4-pH}) ; 6.5 \leq pH < 7.7$$

$$TCAP = 15 C ; \text{coldwater aquatic life use (IIIA)}$$

$$= 20 C ; \text{warmwater aquatic life use (IIIB)}$$

Temperature:

Eighty-five degrees Fahrenheit (29.44 degrees Celsius). The maximum increase shall not be greater than five degrees Fahrenheit (2.78 degrees Celsius) above background conditions.

Dissolved Oxygen:

	<u>Aquatic Life (IIIA) Use</u>		<u>Aquatic Life (IIIB) Use</u>	
	<u>Early Life Stages^{1,2}</u>	<u>Other Life Stages</u>	<u>Early Life Stages²</u>	<u>Other Life Stages</u>
30-Day Mean	NA	6.5	NA	5.5
7-Day Mean	9.5 (6.5)	NA	6.0	NA
7-Day Mean Minimum ³	NA	5.0	NA	4.0
1-Day Minimum ³	8.0 (5.0)	4.0	5.0	3.0

¹ These are water column concentrations to achieve the required intergravel dissolved oxygen concentrations shown in parentheses.

² Includes all embryonic and larval stages and all juvenile forms to 30-days following hatching.

³ All minima should be considered as instantaneous concentrations to be achieved at all times.

Narrative Tribally-adopted Water Quality Standards:

Narrative Tribally-adopted Water Quality Standards describe general characteristics of surface waters and discharges. The narrative standards include the following:

- a) *All surface waters on the Reservation shall be free from substances attributable to wastewater discharges or other pollutant sources that:*
- (1) settle to form objectionable deposits,*
 - (2) float as debris, scum, oil, foam or other matter forming nuisances,*
 - (3) produce objectionable color, odor, taste or turbidity,*
 - (4) cause injury to, or are toxic to, or produce adverse physiological responses in humans, animals, or plants; or*
 - (5) produce undesirable or nuisance aquatic life.*

State of North Dakota Standards

The State of North Dakota has adopted water quality standards (State WQS) for surface waters of the State including the East Fork of Shell Creek within the State jurisdiction (NDAC 33-16-02.1). The East Fork of Shell Creek remains primarily within the external boundaries of the Fort Berthold Indian Reservation as it travels towards Lake Sakakawea, however, approximately one mile from the proposed project site it traverses the boundary of the Reservation into the State of North Dakota for a short distance, prior to returning back to the Reservation. The State WQS standards became effective June 1, 2001 and have been approved by EPA. The standards indicate designated uses for waters of the State, specify narrative and numeric criteria to protect those uses, and antidegradation provisions. The State has classified the East Fork of Shell Creek as a Class III stream. According to §33-16-02.1-09, Class III streams are suitable for agriculture and industrial uses such as stock watering, irrigation, washing and cooling. They are of limited seasonal value for immersion recreation, fish life, and aquatic biota. The quality of these waters must be maintained to protect recreation, fish, and aquatic biota. The State WQS were evaluated against the MHA Nation NPDES permit application, etc. as described above to determine reasonable potential for exceedance of water quality standards. Appropriate numeric criteria for Class III streams include values listed in Table 2 and the following additional numeric standards:

<u>Substance or Characteristic</u>	<u>Maximum Limit</u>
Barium (total)	1.0 mg/L
Chlorides (total)	250 mg/L
Chlorine Residual (total)	acute 0.019 mg/L Chronic 0.011 mg/L
Dissolved Oxygen	not less than 5 mg/L
Fecal Coliform	200 fecal coliforms per 100 mL. (applies May 1 – Sept 30)
Nitrates (N) (diss.)	1.0 mg/L
pH	7.0 – 9.0
Phenols (total)	0.3 mg/L (organoleptic criterion)
Phosphorous (P) (total)	0.1 mg/L
Sulfate (total)	750 mg/L
Temperature	Eighty-five degrees Fahrenheit (29.44 degrees Celsius) The maximum increase shall not be greater than five degrees Fahrenheit (2.78 degrees Celsius) above natural background conditions.

TABLE 2
North Dakota State WQS
(concentrations are dissolved, ug/L)

Pollutant	CAS No.	Aquatic Life Value Classes I, IA, II, III		Human Health Value	
		Acute	Chronic	Classes I, IA, II	Class III
		Benzene	71-43-2	--	--
Ethyl benzene	100-41-4	--	--	700	29000
Toluene	108-88-3	--	--	1000	200000
Xylenes	1330-20-7	--	--	10000	
Phenol	108-95-2	--	--	21000	4600000
Cadmium (tr)	7440-43-9	15.6 (a)	5.8 (a)	5	--
Chromium (III) (tr)	7440-47-3	4430 (a)	212 (a)	--	100 (T)
Chromium (VI)		16	11	--	100 (T)
Copper (tr)	7440-50-8	39.4 (a)	23.8 (a)	--	1000
Lead (tr)	7439-92-1	331 (a)	12.9 (a)	--	15
Mercury (T)	7439-97-6	1.7	0.91	0.050	0.051
Nickel (tr)	7440-02-0	1190 (a)	132 (a)	100	4600
Selenium (tr)	7782-49-2	20	5	50	--
Silver (tr)	7440-22-4	26.8 (a)	--	--	--
Zinc (tr)	7440-66-6	304 (a)	304 (a)	9100	69000
Fluoride (T)	7782-41-4	--	--	4000	--
Nitrite as N	14797-65-0	--	--	1000	--

tr- total recoverable; T- total

(a) Hardness based concentrations for metals calculated using a hardness of 300 mg/L as CaCO₃ and the following formulas:

$$CMC = \exp\{ma[\ln(\text{hardness})] + ba\}$$

$$CCC = \exp\{mc[\ln(\text{hardness})] + bc\}$$

	<i>ma</i>	<i>ba</i>	<i>mc</i>	<i>bc</i>
<i>cadmium</i>	1.128	-3.6867	0.7852	-2.715
<i>copper</i>	0.9422	-1.700	0.8545	-1.702
<i>chromium (III)</i>	0.8190	3.7256	0.8190	0.6848
<i>lead</i>	1.273	-1.460	1.273	-4.705
<i>nickel</i>	0.8460	2.255	0.8460	0.0584
<i>silver</i>	1.72	-6.52	-	-
<i>zinc</i>	0.8473	0.884	0.8473	0.884

Ammonia:

Ammonia (Total as N)

Acute Standard – The one hour average concentration of total ammonia (expressed as N in mg/L) does not exceed more often than once every three years on the average the numerical value given by the following formula:

$$\frac{0.411}{1 + 10^{7.204 - \text{pH}}} + \frac{58.4}{1 + 10^{\text{pH} - 7.204}}$$

Where salmonids are absent; or

$$\frac{0.275}{1 + 10^{7.204 - \text{pH}}} + \frac{39.0}{1 + 10^{\text{pH} - 7.204}}$$

Where salmonids are present.

Chronic Standard- The 30-day average concentration of total ammonia (expressed as N in mg/L) does not exceed more often than once every three years on the average the numerical value given by the following formula; and the highest 4-day average concentration of total ammonia within the 30-day averaging period does not exceed 2.5 times the numerical value given by the following formula:

$$\frac{0.0577}{1 + 10^{7.688 - \text{pH}}} + \frac{2.487}{1 + 10^{\text{pH} - 7.688}} * CV$$

Where: CV = 2.85 when $T \leq 14^{\circ}\text{C}$; or

$$CV = 1.45 * 10^{0.028 * (25 - T)} \text{ when } T > 14^{\circ}\text{C}.$$

Narrative North Dakota State Water Quality Standards

The State of North Dakota water quality standards at 33-16-02.1-08 also include general narrative provisions that are applied to surface waters.

“The following minimum conditions are applicable to all waters of the State except Class II ground waters. All waters of the state shall be:

“Free from substances attributable to municipal, industrial, or other discharges or agricultural practices that will cause the formation of putrescent or otherwise objectionable sludge deposits.

Free from floating debris, oil, scum, and other floating materials attributable to municipal, industrial, or other discharges or agricultural practices in sufficient amounts to be unsightly or deleterious.

Free from materials attributable to municipal, industrial, or other discharges or agricultural practices producing color, odor, or other conditions to such a degree as to create a nuisance or render any undesirable taste to fish flesh or, in any way, make fish inedible.

Free from substances attributable to municipal, industrial, or other discharges or agricultural practices in concentrations or combinations which are toxic or harmful to humans, animals, plants, or resident aquatic biota. For surface water, this standard will be enforced in part through appropriate whole effluent toxicity requirements in North Dakota pollutant discharge elimination system permits.

Free from oil and grease attributable to wastewater, which causes a visible film or sheen upon the waters or any discoloration of the surface of adjoining shoreline or causes a sludge or emulsion to be deposited beneath the surface of the water or upon the adjoining shorelines or prevents classified uses of such waters.”

EPA §304(a) Water Quality Criteria

EPA’s Office of Science and Technology publishes water quality criteria (EPA Criteria) as guidance for use by States and/or Tribes for use in adopting numeric criteria for protection of designated uses. The EPA Criteria are updated periodically with the latest major revision published in November 2002, *National Recommended Water Quality Criteria: 2002, EPA-822-R-02-047*. Revisions to the aquatic life criteria for cadmium, mercury and ammonia and human health criteria for benzene and mercury were included in the 2002 revisions. In addition, the calculation of hardness dependant metals criteria was updated. EPA also updated its criteria in December 2003, *EPA-822-F-03-012*, for 15 human health water quality criteria including ethylbenzene and toluene. The Tribally-adopted WQS and State WQS did not include some or part of the 2002 and 2003 updates as they were developed prior to publication. EPA Region 8 anticipates that both the Tribes and the State will adopt the updated EPA Criteria within the term of the permit. The updated hardness dependant metals criteria are calculated using the following factors:

	$CMC = exp\{ma[\ln(hardness)]+ba\}$		$CCC = exp\{mc[\ln(hardness)]+bc\}$	
	<u>ma</u>	<u>ba</u>	<u>mc</u>	<u>bc</u>
<i>cadmium</i>	1.0166	-3924	0.7409	-4.719
<i>copper</i>	0.9422	-1.700	0.8545	-1.702
<i>chromium (III)</i>	0.8190	3.7256	0.8190	0.6848
<i>lead</i>	1.273	-1.460	1.273	-4.705
<i>nickel</i>	0.8460	2.255	0.8460	0.0584
<i>silver</i>	1.72	-6.59	-	-
<i>zinc</i>	0.8473	0.884	0.8473	0.884

Ammonia:

The updated ammonia criterion is calculated as follows:

(CMC) Acute Criterion – The one-hour average concentration of total ammonia nitrogen (in mg N/L) does not exceed, more often than once every three years on the average, the CMC (acute criterion) calculated using the following equations:

$$\frac{0.411}{1 + 10^{7.204 - \text{pH}}} + \frac{58.4}{1 + 10^{\text{pH} - 7.204}}$$

Where salmonids are absent; or

$$\frac{0.275}{1 + 10^{7.204 - \text{pH}}} + \frac{39.0}{1 + 10^{\text{pH} - 7.204}}$$

Where salmonids are present.

(CCC) Chronic Criterion- The thirty-day average concentration of total ammonia nitrogen (expressed as N in mg/L) does not exceed, more often than once every three years on the average, the CCC (chronic criterion) calculated using the following equations:

$$\frac{0.0577}{1 + 10^{7.688 - \text{pH}}} + \frac{2.487}{1 + 10^{\text{pH} - 7.688}} * \text{MIN}(2.85, 1.45 * 10^{0.028(25-T)})$$

When early life stages are present;

$$\frac{0.0577}{1 + 10^{7.688 - \text{pH}}} + \frac{2.487}{1 + 10^{\text{pH} - 7.688}} * 1.45 * 10^{0.028(25 - \text{MAX}(T, 7))}$$

When early life stages are absent.

In addition, the highest 4-day average within the 30-day period should not exceed 2.5 times the CCC.

Benzene:

The human health based criterion for benzene was changed to maximum values of 2.2 ug/L for water consumption and 51 ug/L for water plus fish consumption.

Mercury:

The human health based criterion for water plus fish consumption for mercury was changed to a methylmercury fish tissue concentration of 0.3 mg/kg. The updated aquatic life criteria CMC (acute criterion) is 1.4 ug/L and the CCC (chronic criterion) is 0.77 ug/L. EPA Region 8 is recommending that the previous CCC for mercury of 0.012 ug/L be applied to assure protection of the new methylmercury fish tissue criterion.

Ethylbenzene:

The human health based criterion for water + organism and organism only were changed to 530 ug/L and 2,100 ug/L respectively.

Toluene:

The human health based criterion for water + organism and organism only were changed to 1,300 ug/L and 15,000 ug/L respectively.

Summary of Tribally-adopted WQS and State WQS and EPA 304(a) Criteria

The East Fork of Shell Creek remains primarily within the external boundaries of the Fort Berthold Indian Reservation as it travels towards Lake Sakakawea, however, approximately one mile from the proposed project site it traverses the boundary of the Reservation into the State of North Dakota for a short distance, prior to returning back to the Reservation. As such, WQBELs developed for the proposed facility will take into consideration both Tribally-adopted WQS and State of North Dakota WQS.

Narrative Tribally-adopted WQS and State WQS for prohibiting discharges of toxics in toxic amounts [NDAC 33-16-02.1-08: General Water Quality Standards 1.a.(4)], and Tribal *Narrative Water Quality Criteria a. (4)*, will be considered for the proposed facility.

Tribally-adopted WQS and State WQS for temperature will also be considered for the proposed facility. The standard is eighty-five degrees Fahrenheit (29.44 degrees Celsius) and a maximum increase of greater than five degrees Fahrenheit (2.78 degrees Celsius) above natural background condition.

Tribally-adopted WQS for dissolved oxygen will also be considered for the proposed facility. They will be expressed as a seasonal standards for April 1-September 30 of 8.0 mg/L (1-day minimum), 9.5 mg/L (7-day mean), and 6.5 mg/L (30-day mean); and October 1-March 31 of 4.0 mg/L (1-day minimum), 5.0 mg/L (7-day mean), and 6.5 mg/L (30-day mean).

Table 3 presents a summary of the combined Tribally-adopted WQS, State WQS and EPA Criteria that will be evaluated for effluent limitations and monitoring requirements in this permit. The most stringent WQS are in bold. Where the EPA Criteria are more or less stringent than the Tribally-adopted WQS and/or State WQS, the EPA Criteria have been designated as the applicable value in anticipation of adoption of the EPA Criteria by the State or Tribes. Hardness dependant metals standards are calculated using a hardness of 300 mg/L as CaCO₃.

In order to determine if there is reasonable potential for pollutants expected in the discharge to cause or contribute to a violation of water quality standards, a comparison of expected discharge pollutant concentrations with Tribally-adopted WQS, State WQS and EPA water quality criteria was completed. The reasonable potential analysis is presented in Table 4.

TABLE 3
Comparison of Tribally-adopted and State WQS and EPA Criteria

Pollutant	Tribally-adopted WQS		State WQS		EPA Criteria	
	Acute	Chronic	Acute	Chronic	Acute	Chronic
Benzene	--	1.2 ¹	--	71	--	2.2
Ethyl benzene	--	700	--	29000	--	530
Toluene	--	1000 ¹	--	200000	--	1300
Xylenes	--	10000	--	--	--	--
Phenol	--	300	--	300	--	300
Hydrogen Sulfide	--	2	--	--	--	2.0
Ammonia as N	1.9 ¹	0.43 ¹	3.2 ²	1.1 ²	3.2 ²	1.1 ²
Barium (tr)	--	2000	--	1000	--	1000
Aluminum (tr)	750	87	--	--	750	87
Cadmium (tr)	13.5	2.7	15.6	5.8	6.5	0.61
Chromium (III) (tr)	4270 ¹	100 ¹	4430	212	4430	212
Chromium (VI)	16	11	16	11	16	11
Copper (tr)	49.9	30.2	39.4	23.8	39.4	23.8
Iron (tr)	--	300	--	--	--	300
Manganese (tr)	--	50	--	--	--	50
Lead (tr)	331	12.9	331	12.9	331	12.9
Mercury (T)	2.4	0.012	1.7	0.051	1.4	0.012 ³
Nickel (tr)	3592	100 ¹	1190	132	1190	132
Selenium (tr)	20	5	20	5	20	5
Silver (tr)	26.8	--	26.8	--	25.0	--
Zinc (tr)	297 ¹	269 ¹	304	304	304	304
Chlorine (TRC)	19	11	19	11	19	11
Chloride	860000	230000	--	250000	860000	230000
Fluoride	--	4000	--	--	--	--
Sulfate	--	--	--	750000	--	--
Nitrite as N	--	1000	--	--	--	--
Nitrate as N	--	10000	--	1000 ⁴	--	10000
Phosphorous as P	--	--	--	100 ⁴	--	--
PH (s.u.)	7.0 - 9.0		7.0 - 9.0		6.5 - 9	

¹ Tribally-adopted WQS is more stringent than EPA Criteria and will be updated to EPA Criteria value.

² Ammonia-N values calculated using a pH of 8.5 and a temperature of 15°C. For State WQS and EPA Criteria, salmonid fish are presumed absent (acute) and early life stages are presumed present (chronic).

³ EPA Region 8 recommends using a water column concentration of 0.012 ug/L Hg (T) to protect the chronic methylmercury fish tissue criterion.

⁴ The values for nitrate and phosphorous are interim guidance. In no case shall the standard for nitrates exceed 10 mg/L for any waters used as municipal drinking water supply.

TABLE 4

Reasonable Potential Analysis
(Treated Process Wastewater and Contaminated Stormwater)
(in ug/L unless otherwise indicated)

Pollutant	NPDES Permit Application		Applicable QWS		Reasonable Potential	
	Daily Maximum	Average Daily	Acute	Chronic	Acute	Chronic
Benzene	10	10	--	2.2	--	Yes
Ethyl benzene	0.0	0.0	--	530	--	No ¹
Toluene	0.0	0.0	--	1300	--	No ¹
Xylenes	NE	NE	--	10000	--	No
Phenol	300	300	--	300	--	Yes
Hydrogen Sulfide	0.0	0.0	--	2.0	--	No ²
Ammonia as N (mg/L)	145	90	3.2	1.1	Yes	Yes
Barium (tr)	200	10	--	1000	--	Yes
Aluminum (tr)	80	10	750	87	Yes	Yes
Cadmium (tr)	0.0	0.0	6.5	0.61	No ³	No ³
Chromium (III) (tr)	0.0	0.0	4430	212	No ²	No ²
Chromium (VI)	NR	NR	16	11	No ²	No ²
Copper (tr)	0.0	0.0	39.4	23.8	No ³	No ³
Iron (tr)	250	40	--	300	--	Yes
Manganese (tr)	50	20	--	50	--	Yes
Lead (tr)	0.0	0.0	331	12.9	No ³	No ³
Mercury (T)	0.0	0.0	1.4	0.012	No ¹	No ¹
Nickel (tr)	50	50	1190	132	Yes	Yes
Selenium (tr)	10	10	20	5	Yes	Yes
Silver (tr)	0.0	0.0	25.0	--	No ³	--
Zinc (tr)	0.0	0.0	304	304	No ³	No ³
Chlorine (TRC)	0.0	0.0	19	11	No	No
Chloride	NR	NR	860000	230000	No ¹	No ¹
Fluoride	3500	1000	--	4000	--	Yes
Sulfate	150000	90000	--	750000	--	Yes
Nitrite as N	NR	NR	--	1000	--	No ¹
Nitrate as N	40	20	--	10000	--	Yes
Phosphorous as P	200	120	--	100 ⁴	--	Yes ⁴
PH (s.u.)	8.00- 8.50		7.0 - 9.0		Yes	

¹ Reported as 0.0 ppm in permit application but likely to be present in discharge. Limits and monitoring will be required for this parameter.

² Reported as 0.0 ppm in permit application but likely to be present in discharge. Also covered by ELG. Limits and monitoring will be required for this parameter.

³ Reported as 0.0 ppm in permit application but likely to be present in the discharge at low concentration so monitoring only will apply.

⁴ State WQS is a guideline only, so monitoring only will be required.

NE- reported as not expected to be present

NR- not reported in application

note: Boron was reported in the permit application at 1500 ug/L (daily maximum) and 100 ug/L (average daily) but there are no applicable WQS or EPA Criteria.

Technology Based Effluent Limitations

The proposed MHA Nation Clean Fuels refinery will be a new source and must comply with New Source Performance Standards (NSPS) under the Effluent Limitations Guidelines and Standards for the Petroleum Refining Point Source Category pursuant to §40 CFR 419.36. The proposed refinery size is 10,000 bpsd of synthetic crude plus 3,000 bpsd of field butane for a total refinery throughput of 13,000 bpsd. The proposed refinery process configuration is covered under Subpart C Petrochemical Subcategory of the Petroleum Refining Point Source Category.

Process Effluent Limitations

Process Configuration (1000 bbl/day) [see §40 CFR 419.42(b)(3)]

<u>Feedstock Process</u>	<u>Feedstock Rate</u>	<u>Relative Rate</u>	<u>Weight Factor</u>	<u>Process Configuration</u>
Crude- Atm. Dist Cracking	10	0.769	1	0.769
(Hydrocracking)	6.872	0.529	6	3.17
Isomerization	3	0.231	13	3.00
Total				6.94

Using the above Process Configuration (6.94) and a 13,000 bbl/day capacity, a Size Factor (SF) of 0.73 and a Process Factor (PF) of 1.08 are derived pursuant to §40 CFR 419.36(b).

New Source Performance Standards (NSPS): Using the above Capacity, Size and Process factors, the following table shows applicable effluent limitations for this facility. [Limit (lbs/1000 bbl) X (PF) X (SF) = Effluent Limit (lbs/day)] [§40 CFR 419.36(a)]:

TABLE 5

Pollutant	Effluent Limitation		Effluent Limitations	
	Daily Maximum (lbs/1000 bbl)	Average Daily (lbs/1000 bbl)	Daily Maximum (lbs/day)	Average Daily (lbs/day)
BOD ₅	7.7	4.1	78.92	42.02
TSS	5.2	3.3	53.30	33.82
COD	47.0	24.0	481.71	245.98
Oil and Grease	2.4	1.3	24.60	13.32
Phenolic Compounds	0.056	0.027	0.57	0.28
Ammonia as N	8.3	3.8	85.07	38.95
Sulfide	0.050	0.022	0.51	0.23
Total Chromium	0.116	0.068	1.19	0.70
Hexavalent Chromium	0.0096	0.0044	0.098	0.045
pH			6.0 to 9.0	

BAT, BPT, BCT : Limitations for BAT, BPT, and BCT were also evaluated using the above factors. Only BAT limitations for ammonia as N were more stringent than NSPS standards above. The following BAT limits will be evaluated against water quality standards [§40 CFR 419.33(a)]:

	Daily Maximum (lbs./day)	Average Daily (lbs./day)
Ammonia as N	84.56	38.95

Contaminated Runoff Allowance

Best Professional Judgment (BPJ)

The NSPS do not contain pollutant allowances for contaminated stormwater runoff from process areas. Regulations under §40 CFR 419.36(e) were reserved. The BPT [§40 CFR 419.32(e), BAT [§40 CFR 419.33(f)], and BCT [§40 CFR 419.34(e)] allowances for contaminated runoff were evaluated using best professional judgment (BPJ) for this proposed facility. The BPT/BAT/BCT allowances are based on flow and for this facility, average contaminated stormwater flows of 4.4 gallons per minute (6,336 gallons per day) as reported in the NPDES permit application was used for the allowance calculation. BPT allowances were equivalent to BAT and BCT except for BAT for total chromium was more stringent. The stormwater allowances shown in Table 6 will be added to the process allowances for the total facility effluent limitations (see Table 7).

TABLE 6

Pollutant	Effluent Limitation		Effluent Limitations	
	Daily Maximum (lbs/1000 gal)	Average Daily (lbs/1000 gal)	Daily Maximum (lbs/day)	Average Daily (lbs/day)
BOD ₅	0.40	0.22	2.53	1.39
TSS	0.28	0.18	1.77	1.14
COD	3.0	1.5	19.01	9.5
Oil and Grease	0.13	0.067	0.82	0.42
Phenolic Compounds	0.0029	0.0014	0.0184	0.0089
Ammonia as N	0	0	0	0
Sulfide	0	0	0	0
Total Chromium	0.0050	0.0018	0.032	0.011
Hexavalent Chromium	0.00052	0.00023	0.0033	0.0015
pH	6.0 to 9.0		6.0 to 9.0	

Total Technology Effluent Limitations

(Process + Stormwater = Total)

TABLE 7

Pollutant	Process Effluent Limitation		Stormwater Effluent Limitations		Total Effluent Limitations	
	Daily Maximum (lbs/day)	Average Daily (lbs/day)	Daily Maximum (lbs/day)	Average Daily (lbs/day)	Daily Maximum (lbs/day)	Average Daily (lbs/day)
BOD ₅	78.92	42.02	2.53	1.39	81.45	43.41
TSS	53.30	33.82	1.77	1.14	55.07	34.96
COD	481.71	245.98	19.01	9.50	500.72	255.48
Oil and Grease	24.60	13.32	0.82	0.42	25.42	13.74
Phenolic Compounds	0.57	0.28	0.0184	0.0089	0.59	0.29
Ammonia as N	84.56	38.95	0	0	84.56	38.95
Sulfide	0.51	0.23	0	0	0.51	0.23
Total Chromium	1.19	0.70	0.032	0.011	1.222	0.711
Hexavalent Chromium	0.098	0.045	0.0033	0.0015	0.101	0.046
pH	6.0 to 9.0				6.0 to 9.0	

Conversion of Technology Based Mass Limits to Concentration Limits

The mass based technology limits above were converted to concentration based limits using flow information provided in the NPDES Permit Application (Table 8). Under the proposed alternative in the DEIS, with full recycle, the average daily flow is anticipated to be approximately 15,000 gallons per day (gpd) and the maximum daily flow of approximately 35,000 gpd. (See DEIS Figure 2-3) Without recycle average daily and maximum daily flows are anticipated to be approximately 30,000 gpd and 50,000 gpd. (See DEIS Figure 2-4.) Under Alternative 4 of the DEIS, maximum flow is expected to be 76,320 gpd and average 28,800 gpd. For this conversion, the highest maximum flow (Alternative 4) will be used as it would be protective of technology requirements regardless of recycle rates or choice of discharge alternative. Conversion factors are 3.785 l/gal, and 454,500 mg/lb.

TABLE 8

Pollutant	Effluent Limitation		Effluent Limitations	
	Daily Maximum (lbs/day)	Average Daily (lbs/day)	Daily Maximum (mg/L)	Average Daily (mg/L)
BOD ₅	81.45	43.41	128	68
TSS	55.07	34.96	87	55
COD	500.72	255.48	788	402
Oil and Grease	25.42	13.74	40	22
Phenolic Compounds	0.59	0.29	0.93	0.45
Ammonia as N	84.56	38.95	133	61
Sulfide	0.51	0.23	0.8	0.4
Total Chromium	1.222	0.711	1.9	1.1
Hexavalent Chromium	0.101	0.046	0.16	0.07

Comparison of Water Quality Based and Technology Based Effluent Limitations

Table 9 contains a comparison of water quality and technology based requirements. The more stringent limit will be carried forward as an effluent limitation in the proposed permit:

TABLE 9

Pollutant	Technology Based Limit (ug/L)		Water Quality Based Limit (ug/L)		Most Stringent Limit (ug/L)	
	Daily Maximum	Average Daily	Daily Maximum	Average Daily	Daily Maximum	Average Daily
BOD ₅ (lbs/day)	81	43	(a)	(a)	81 (a)	43 (a)
COD (lbs/day)	500	255	(a)	(a)	500 (a)	255 (a)
TSS (lbs/day)	55	35	N/A	N/A	55	35
Oil and Grease (lbs/day)	25.4	13.7	N/A	N/A	25.4	13.7
Benzene	N/A	N/A	--	2.2	--	2.2
Ethyl benzene	N/A	N/A	--	530	--	530
Toluene	N/A	N/A	--	1300	--	1300
Phenol	N/A	N/A	--	300	--	300
Phenolic Compounds (lbs/day)	0.59	0.29	N/A	N/A	0.59	0.29
Hydrogen Sulfide	800	400	--	2.0	--	2.0
Ammonia as N (mg/L)	133	61	3.2	1.1	3.2	1.1
Barium (tr)	N/A	N/A	--	1000	--	1000
Aluminum (tr)	N/A	N/A	750	87	750	87
Cadmium (tr)	N/A	N/A	6.5	0.61	MON	MON
Chromium (III) (tr)	1900	1100	4430	212	MON	MON
Chromium (Total) (lbs/day)	1.22	0.71	1.84	0.035	1.22	0.035
Chromium (VI)	160	70	16	11	16	11
Chromium (VI) (lbs/day)	0.101	0.046	0.0067	0.0018	0.0067	0.0018
Copper (tr)	N/A	N/A	39.4	23.8	MON	MON
Iron (tr)	N/A	N/A	--	300	--	300
Manganese (tr)	N/A	N/A	--	50	--	50
Lead (tr)	N/A	N/A	331	12.9	MON	MON
Mercury (T)	N/A	N/A	1.4	0.012	1.4	0.012
Nickel (tr)	N/A	N/A	1190	132	1190	132
Selenium (tr)	N/A	N/A	20	5	20	5
Silver (tr)	N/A	N/A	25.0	--	MON	--
Zinc (tr)	N/A	N/A	304	304	MON	MON
Chloride	N/A	N/A	860000	230000	860000	230000
Fluoride	N/A	N/A	--	4000	--	4000
Sulfate	N/A	N/A	--	750000	--	750000
Nitrite as N	N/A	N/A	--	1000	--	1000
Nitrate as N	N/A	N/A	--	10000	--	10000
Phosphorous as P	N/A	N/A	--	100	--	MON
pH (s.u.)	6.0-9.0		7.0-9.0		7.0-9.0	

(a) Oxygen demanding parameters (BOD, COD) will also be limited by WQS for dissolved oxygen.
MON- Monitor Only

Whole Effluent Toxicity Limitations (Outfall 002)

The MHA Nation Water Quality Standards (Tribally-adopted WQS) contain narrative conditions that ensure surface waters of the Reservation are free from substances in wastewater discharges that “*cause injury to, or are toxic to, or produce adverse physiological responses in humans, animals or plants...*” Implementation of the narrative Tribally-adopted WQS for purposes of NPDES permits “*shall result in appropriate acute and chronic effluent quality limitations consistent with the federal water quality-based permitting found at 40 CFR 122.44(d), including whole effluent toxicity (WET) limitations as required in the latest edition of the EPA Region VIII NPDES Whole Effluent Toxics Control Program document.*” (1997 Region 8 WET Policy)

Since the proposed MHA Nation Clean Fuels Refinery will have discharges from Outfall 002 that may contain substances that alone or in combination with other substances that exhibit toxicity to aquatic organisms, whole effluent toxicity (WET) limitations will be imposed in the proposed permit. In accordance with the Region 8 WET Policy, the permit will require both acute and chronic WET limits and monitoring for two species, *ceriodaphnia dubia* and *pimephales promelas* on a quarterly basis. The requirement for both acute and chronic WET limits and monitoring is due to the uncertain nature of the treated process wastewater discharge from this new facility. If the results of at least ten WET tests during this permit term show there is no reasonable potential for acute and/or chronic WET the discharge, the permittee may request a reduction in test frequency and/or number of species. The WET monitoring data collected during this proposed permit term will also be evaluated at the time of permit reissuance for reasonable potential and if a reduction in test frequency and/or number of species tested is warranted.

Proposed effluent limitations and monitoring frequencies for Outfall 002 are presented in Tables 10 and 11 respectively.

Proposed Numeric Effluent Limitations (Outfall 002)

TABLE 10

Pollutant	Effluent Limit (ug/L)		Basis for Effluent Limitation
	Daily Maximum	Average Daily	
Flow, MGD	0.08	0.03	Permit Application , DEIS
BOD ₅ (lbs/day)	81	43	§40 CFR 419
COD (lbs/day)	500	255	§40 CFR 419
TSS (lbs/day)	55	35	§40 CFR 419
Oil and Grease (lbs/day)	25.4	13.7	§40 CFR 419
Benzene	NA	2.2	EPA 304(a) Criterion
Ethyl benzene	NA	530	EPA 304(a) Criterion
Toluene	NA	1300	EPA 304(a) Criterion
Phenol	NA	300	EPA 304(a) Criterion, State WQS, Tribal WQS
Phenolic Compounds (lbs/day)	0.59	0.29	§40 CFR 419
Hydrogen Sulfide	NA	2.0	EPA 304(a) Criterion, Tribal WQS
Ammonia as N (mg/L)	3.2	1.1	EPA 304(a) Criterion, State WQS
Barium (tr)	NA	1000	EPA 304(a) Criterion, State WQS
Aluminum (tr)	750	87	EPA 304(a) Criterion, Tribal WQS
Cadmium (tr)	MON	MON	EPA 304(a) Criterion
Chromium (Total) (lbs/day)	1.22	0.035	§40 CFR 419, State WQS, EPA 304(a) Criterion
Chromium (VI)	16	11	EPA 304(a) Criterion, State WQS, Tribal WQS
Chromium (VI) (lbs/day)	0.0067	0.0018	EPA 304(a) Criterion, State WQS, Tribal WQS
Copper (tr)	MON	MON	EPA 304(a) Criterion, State WQS
Iron (tr)	NA	300	EPA 304(a) Criterion, Tribal WQS
Manganese (tr)	NA	50	EPA 304(a) Criterion, Tribal WQS
Lead (tr)	MON	MON	EPA 304(a) Criterion, State WQS, Tribal WQS
Mercury (T)	1.4	0.0012	EPA 304(a) Criterion, Tribal WQS
Nickel (tr)	1190	132	EPA 304(a) Criterion, State WQS
Selenium (tr)	20	5	EPA 304(a) Criterion, State WQS, Tribal WQS
Silver (tr)	MON	MON	EPA 304(a) Criterion
Zinc (tr)	MON	MON	EPA 304(a) Criterion, State WQS
Chloride	860000	230000	EPA 304(a) Criterion, Tribal WQS
Fluoride	NA	4000	Tribal WQS
Sulfate	NA	750000	State WQS
Nitrite as N	NA	1000	Tribal WQS
Nitrate as N	NA	10000	EPA 304(a) Criterion, Tribal WQS
Phosphorous as P	MON	MON	State WQS
pH (s.u.)	7.0- 9.0		State WQS, Tribal WQS
WET, acute	LC ₅₀ > 100%		Narrative Tribal WQS and State WQS
WET, chronic	IC ₂₅ > 100%		Narrative Tribal WQS and State WQS
Dissolved Oxygen (mg/L)	April 1 – Sept 30 8.0 (1-day min.) 9.5 (7-day mean) 6.5 (30-day mean) Oct 1 – March 31 4.0 (1-day min.) 5.0 (7-day mean) 6.5 (30-day mean)		Tribal WQS

MON- Monitor Only

The discharge from Outfall 002 shall be free from oil and grease attributable to wastewater, which causes a visible film or sheen upon the waters or any discoloration of the surface of adjoining shoreline or causes a sludge or emulsion to be deposited beneath the surface of the water or upon the adjoining shorelines or prevents classified uses of such waters.

Proposed Effluent Monitoring Requirements (Outfall 002)

TABLE 11

Pollutant	Monitoring Frequency	Sample Type
Flow, MGD	Daily	Continuous, Recorder
BOD ₅ , lbs/day	2X/Week	Composite
COD, lbs/day	Monthly	Composite
TSS, lbs/day	2X/Week	Composite
Oil and Grease, lbs/day	Weekly	Grab
Benzene, ug/L	Monthly	Grab
Ethyl benzene, ug/L	Monthly	Grab
Toluene, ug/L	Monthly	Grab
Phenol, ug/L	Monthly	Grab
Phenolic Compounds, lbs/day	Monthly	Grab
Hydrogen Sulfide, ug/L	Weekly	Grab
Ammonia as N, mg/L	Weekly	Composite
Barium (tr), ug/L	Monthly	Composite
Aluminum (tr), ug/L	Monthly	Composite
Chromium (Total), lbs/day	Monthly	Composite
Chromium (VI), ug/L	Monthly	Grab
Chromium (VI), lbs/day	Monthly	Grab
Iron (tr), ug/L	Monthly	Composite
Manganese (tr), ug/L	Monthly	Composite
Mercury (T), ug/L	Monthly	Composite
Nickel (tr), ug/L	Monthly	Composite
Selenium (tr), ug/L	Monthly	Composite
Chloride, ug/L	Monthly	Composite
Fluoride, ug/L	Monthly	Composite
Sulfate, ug/L	Monthly	Composite
Nitrite as N, ug/L	Monthly	Composite
Nitrate as N, ug/L	Monthly	Composite
Phosphorous as P, ug/L	Monthly	Composite
pH (s.u.)	Daily	Grab or Continuous
WET, acute	Quarterly	Composite
WET, chronic	Quarterly	Grab
Dissolved Oxygen, mg/L	Daily	Grab
Temperature, °C	Daily	Grab

Additional Monitoring Requirement for Outfall 002:

Approximately 90 days and 270 days after startup of the facility, monitoring shall be required for:

Total Metals – Table III §40CFR 122 Appendix D

Volatile, acid, and base/neutral compounds – Table II §40CFR 122 Appendix D

Contaminated (oily) Stormwater (Outfall 002a)

Under Alternative 4 of the DEIS, an additional Outfall (002a) is proposed for discharges of segregated contaminated (oily) stormwater. The discharge of this wastewater may be necessary due to the lack of storage capacity in the wastewater tank system to contain all runoff resulting from unusual or episodic precipitation events.

Technology Limitations

Best Professional Judgment (BPJ)

The NSPS for Petroleum Refining (§40 CFR 419.36) also do not contain provisions for release of segregated contaminated stormwater runoff from process areas. As discussed under Outfall 002 above, regulations under §40 CFR 419.36(e) were reserved.

The BPT [§40 CFR 419.32(e)], BAT [§40 CFR 419.33(f)], and BCT [§40 CFR 419.34(e)] provisions for discharge of segregated contaminated runoff were evaluated using best professional judgment (BPJ) for this proposed facility. The BPT/BAT/BCT provisions limit discharge to segregated contaminated (oily) stormwater that is not commingled or treated with process wastewater that meets the following limitations:

BPT	Oil and Grease <15 mg/L
BAT	Total Organic Carbon <110 mg/L
BCT	Oil and Grease <15 mg/L

The limits cannot be exceeded in either a grab or composite sample of the discharge.

Water Quality Based Effluent Limitations

Numeric and Narrative Water Quality Standards and Criteria

Numeric water quality standards considered in establishing limitations for this discharge would be the same as presented in Table 3 above.

Narrative water quality standards (dissolved oxygen, whole effluent toxicity, etc.) considered in establishing effluent limitations would also be the same as described for discharges through Outfall 002 above.

Reasonable Potential

Water quality standard based effluent limitations will also be evaluated for the discharges of segregated contaminated (oily) stormwater. Pollutants reported in the permit application for the combined process and contaminated (oily) stormwater for Outfall 002 were compared with Tribally-adopted WQS, State WQS and EPA criteria. Table 12

shows the comparison. Tables 13 and 14 show proposed effluent limits and monitoring requirements for Outfall 002a.

Reasonable Potential Analysis (Contaminated (oily) Stormwater)
(in ug/L unless otherwise indicated)

Table 12

Pollutant	NPDES Permit Application		Applicable WQS		Reasonable Potential	
	Daily Maximum	Average Daily	Acute	Chronic	Acute	Chronic
Benzene	10	10	--	2.2	--	Yes
Ethyl benzene	0.0	0.0	--	530	--	No ¹
Toluene	0.0	0.0	--	1300	--	No ¹
Xylenes	NE	NE	--	10000	--	No
Phenol	300	300	--	300	--	Yes
Hydrogen Sulfide	0.0	0.0	--	2.0	--	No ²
Ammonia as N (mg/L)	145	90	3.2	1.1	Yes	Yes
Barium (tr)	200	10	--	1000	--	Yes
Aluminum (tr)	80	10	750	87	Yes	Yes
Cadmium (tr)	0.0	0.0	6.5	0.61	No ³	No ³
Chromium (III) (tr)	0.0	0.0	4430	212	No ²	No ²
Chromium (VI)	NR	NR	16	11	No ²	No ²
Copper (tr)	0.0	0.0	39.4	23.8	No ³	No ³
Iron (tr)	250	40	--	300	--	Yes
Manganese (tr)	50	20	--	50	--	Yes
Lead (tr)	0.0	0.0	331	12.9	No ³	No ³
Mercury (T)	0.0	0.0	1.4	0.012	No ¹	No ¹
Nickel (tr)	50	50	1190	132	Yes	Yes
Selenium (tr)	10	10	20	5	Yes	Yes
Silver (tr)	0.0	0.0	25.0	--	No ³	--
Zinc (tr)	0.0	0.0	304	304	No ³	No ³
Chlorine (TRC)	0.0	0.0	19	11	No	No
Chloride	NR	NR	860000	230000	No ¹	No ¹
Fluoride	3500	1000	--	4000	--	Yes
Sulfate	150000	90000	--	750000	--	Yes
Nitrite as N	NR	NR	--	1000	--	No ¹
Nitrate as N	40	20	--	10000	--	Yes
Phosphorous as P	200	120	--	100 ⁴	--	Yes ⁴
PH (s.u.)	8.00- 8.50		7.0 - 9.0		Yes	

¹ Reported as 0.0 ppm in permit application but likely to be present in discharge. Limits and monitoring will be required for this parameter.

² Reported as 0.0 ppm in permit application but likely to be present in discharge. Also covered by ELG. Limits and monitoring will be required for this parameter.

³ Reported as 0.0 ppm in permit application but likely to be present in the discharge at low concentration so monitoring only will apply.

⁴ State WQS is a guideline only, so monitoring only will be required.

NE- reported as not expected to be present

NR- not reported in application

note: Boron was reported in the permit application at 1500 ug/L (daily maximum) and 100 ug/L (average daily) but there are no applicable WQS or EPA Criteria.

Proposed Numeric Effluent Limitations (Outfall 002a)

TABLE 13

Pollutant	Effluent Limit (ug/L)		Basis for Effluent Limitation
	Daily Maximum	Average Daily	
Flow, MGD	0.027	0.0065	Permit Application, DEIS
Oil and Grease, mg/L	15	15	BPJ (40 CFR 419)
Total Organic Carbon, mg/L	110	110	BPJ (40 CFR 419)
Benzene	NA	2.2	EPA 304(a) Criterion
Ethyl benzene	NA	530	EPA 304(a) Criterion
Toluene	NA	1300	EPA 304(a) Criterion
Phenol	NA	300	EPA 304(a) Criterion, State WQS, Tribal WQS
Hydrogen Sulfide	NA	2.0	EPA 304(a) Criterion, Tribal WQS
Ammonia as N (mg/L)	3.2	1.1	EPA 304(a) Criterion, State WQS
Barium (tr)	NA	1000	EPA 304(a) Criterion, State WQS
Aluminum (tr)	750	87	EPA 304(a) Criterion, Tribal WQS
Cadmium (tr)	MON	MON	EPA 304(a) Criterion
Chromium (VI)	16	11	EPA 304(a) Criterion, State WQS, Tribal WQS
Copper (tr)	MON	MON	EPA 304(a) Criterion, State WQS
Iron (tr)	NA	300	EPA 304(a) Criterion, Tribal WQS
Manganese (tr)	NA	50	EPA 304(a) Criterion, Tribal WQS
Lead (tr)	MON	MON	EPA 304(a) Criterion, State WQS, Tribal WQS
Mercury (T)	.14	0.0012	EPA 304(a) Criterion, Tribal WQS
Nickel (tr)	1190	132	EPA 304(a) Criterion, State WQS
Selenium (tr)	20	5	EPA 304(a) Criterion, State WQS, Tribal WQS
Silver (tr)	MON	MON	EPA 304(a) Criterion
Zinc (tr)	MON	MON	EPA 304(a)-Criterion, State WQS
Chloride	860000	230000	EPA 304(a) Criterion, Tribal WQS
Fluoride	NA	4000	Tribal WQS
Sulfate	NA	750000	State WQS
Nitrite as N	NA	1000	Tribal WQS
Nitrate as N	NA	10000	EPA 304(a) Criterion, Tribal WQS
Phosphorous as P	MON	MON	State WQS
pH (s.u.)	7.0- 9.0		State WQS, Tribal WQS
WET, acute	LC ₅₀ > 100%		Narrative Tribal WQS and State WQS
WET, chronic	IC ₂₅ > 100%		Narrative Tribal WQS and State WQS
Dissolved Oxygen (mg/L)	April 1 – Sept 30 8.0 (1-day min.) 9.5 (7-day mean) 6.5 (30-day mean) Oct 1 – March 31 4.0 (1-day min.) 5.0 (7-day mean) 6.5 (30-day mean)		Tribal WQS

MON- Monitor Only

The discharge from Outfall 002a shall be free from oil and grease attributable to wastewater, which causes a visible film or sheen upon the waters or any discoloration of the surface of adjoining shoreline or causes a sludge or emulsion to be deposited beneath the surface of the water or upon the adjoining shorelines or prevents classified uses of such waters.

Proposed Effluent Monitoring Requirements (Outfall 002a)

Table 14

Pollutant	Monitoring Frequency	Sample Type
Flow, MGD	Daily	Continuous, Recorder
TOC, mg/L	Weekly	Composite
Oil and Grease, mg/L, visual	Daily	Visual ¹
Oil and Grease, mg/L	Weekly	Grab
Benzene, ug/L	Monthly	Grab
Ethyl benzene, ug/L	Monthly	Grab
Toluene, ug/L	Monthly	Grab
Phenol, ug/L	Monthly	Grab
Hydrogen Sulfide, ug/L	Weekly	Grab
Ammonia as N, mg/L	Weekly	Composite
Barium (tr), ug/L	Monthly	Composite
Aluminum (tr), ug/L	Monthly	Composite
Chromium (VI), ug/L	Monthly	Grab
Iron (tr), ug/L	Monthly	Composite
Manganese (tr), ug/L	Monthly	Composite
Mercury (T), ug/L	Monthly	Composite
Nickel (tr), ug/L	Monthly	Composite
Selenium (tr), ug/L	Monthly	Composite
Chloride, ug/L	Monthly	Composite
Fluoride, ug/L	Monthly	Composite
Sulfate, ug/L	Monthly	Composite
Nitrite as N, ug/L	Monthly	Composite
Nitrate as N, ug/L	Monthly	Composite
Phosphorous as P, ug/L	Monthly	Composite
pH (s.u.)	Daily	Grab or Continuous
WET, acute	Quarterly	Composite
WET, chronic	Quarterly	Grab
Dissolved Oxygen, mg/L	Daily	Grab
Temperature, °C	Daily	Grab

¹ A daily visual observation is required. If a visible sheen is detected, a grab sample shall be taken and analyzed immediately. The concentration of oil and grease shall not exceed 15 mg/L in any sample.

Uncontaminated (non-oily) Stormwater (Outfall 001)

Water Quality Based Effluent Limits

Water quality based effluent limits are evaluated for the discharges of uncontaminated (non-oily) stormwater from Outfall 001. A reasonable potential analysis for pollutants expected to be in the discharge from Outfall 001 is presented in Table 15.

TABLE 15
Reasonable Potential Analysis (Uncontaminated (non-oily) Stormwater)
(in ug/L unless otherwise indicated)

Pollutant	NPDES Permit Application		Applicable QWS		Reasonable Potential	
	Daily Maximum	Average Daily	Acute	Chronic	Acute	Chronic
Benzene	0.0	0.0	--	2.2	--	No
Ethyl benzene	0.0	0.0	--	530	--	No
Toluene	0.0	0.0	--	1300	--	No
Xylenes	NE	NE	--	10000	--	No
Phenol	300	0.0	--	300	--	Yes
Hydrogen Sulfide	0.0	0.0	--	2.0	--	No
Ammonia as N (mg/L)	0.0	0.0	3.2	1.1	No	No
Barium (tr)	0.0	0.0	--	1000	--	No
Aluminum (tr)	0.0	0.0	750	87	No	No
Cadmium (tr)	0.0	0.0	6.5	0.61	No	No
Chromium (III) (tr)	0.0	0.0	4430	212	No	No
Chromium (VI)	NR	NR	16	11	No	No
Copper (tr)	0.0	0.0	39.4	23.8	No	No
Iron (tr)	200	0.0	--	300	--	Yes
Manganese (tr)	50	0.0	--	50	--	Yes
Lead (tr)	0.0	0.0	331	12.9	No	No
Mercury (T)	0.0	0.0	1.4	0.012	No	No
Nickel (tr)	0.0	0.0	1190	132	No	No
Selenium (tr)	10	0.0	20	5	Yes	Yes
Silver (tr)	0.0	0.0	25.0	--	No	--
Zinc (tr)	0.0	0.0	304	304	No	No
Chlorine (TRC)	0.0	0.0	19	11	No	No
Chloride	NR	NR	860000	230000	No	No
Fluoride	0.0	0.0	--	4000	--	Yes
Sulfate	60000	0.0	--	750000	--	Yes
Nitrite as N	NR	NR	--	1000	--	No
Nitrate as N	40	0.0	--	10000	--	Yes
Phosphorous as P	300	0.0	--	100 ⁴	--	Yes
pH (s.u.)	8.00- 8.50		7.0 - 9.0		Yes	

⁴ State WQS is a guideline only, so monitoring only will be required.

NE- reported as not expected to be present

NR- not reported in application

note: Boron was reported in the permit application at 1000 ug/L (daily maximum) but there are no applicable WQS or EPA Criteria.

Limits for Outfall 001

Uncontaminated (non-oily) wastewater discharges from Outfall 001 will meet the effluent limitations shown in Table 16. The limits are based on numeric and narrative water quality standards. Proposed monitoring requirements for Outfall 001 are shown in Table 17.

Proposed Numeric Effluent Limitations (Outfall 001)

TABLE 16

Pollutant	Effluent Limit (ug/L)		Basis for Effluent Limitation
	Daily Maximum	Average Daily	
Flow, MGD	0.095	NA	Permit Application, DEIS
Oil and Grease	15	NA	Narrative Tribal WQS
Biochemical Oxygen Demand 5-Day (mg/L)	45	30	Narrative Tribal WQS
Total Suspended Solids (mg/L)	45	30	Narrative Tribal WQS
Phenol	NA	300	EPA 304(a) Criterion, State WQS, Tribal WQS
Iron (tr)	NA	300	EPA 304(a) Criterion, Tribal WQS
Manganese (tr)	NA	50	EPA 304(a) Criterion, Tribal WQS
Selenium (tr)	20	5	EPA 304(a) Criterion, State WQS, Tribal WQS
Sulfate	NA	750000	State WQS
Nitrate as N	NA	10000	EPA 304(a) Criterion, Tribal WQS
Phosphorous as P	MON	MON	State WQS
pH (s.u.)	7.0- 9.0		State WQS, Tribal WQS
Dissolved Oxygen (mg/L)	April 1 – Sept 30 8.0 (1-day min.) 9.5 (7-day mean) 6.5 (30-day mean) Oct 1 – March 31 4.0 (1-day min.) 5.0 (7-day mean) 6.5 (30-day mean)		Tribal WQS

MON- Monitor Only

The discharge from Outfall 001 shall be free from oil and grease attributable to wastewater, which causes a visible film or sheen upon the waters or any discoloration of the surface of adjoining shoreline or causes a sludge or emulsion to be deposited beneath the surface of the water or upon the adjoining shorelines or prevents classified uses of such waters.

Proposed Effluent Monitoring Requirements (Outfall 001)

TABLE 17

Pollutant	Monitoring Frequency	Sample Type
Flow, MGD	Daily	Continuous, Recorder
Oil and Grease, mg/L	Daily	Visual ¹
Biochemical Oxygen Demand 5-Day, mg/L	Monthly	Composite
Total Suspended Solids, mg/L	Monthly	Composite
Ammonia as N, mg/L	Quarterly	Composite
Phenol, ug/L	Quarterly	Composite
Iron (tr), ug/L	Quarterly	Composite
Manganese (tr), ug/L	Quarterly	Composite
Selenium (tr), ug/L	Quarterly	Composite
Fluoride, ug/L	Quarterly	Composite
Sulfate, ug/L	Quarterly	Composite
Nitrate as N, ug/L	Quarterly	Composite
Phosphorous as P, ug/L	Quarterly	Composite
pH (s.u.)	Daily	Grab or Continuous
Dissolved Oxygen, mg/L	Daily	Grab

¹ A daily visual observation is required. If a visible sheen is detected, a grab sample shall be taken and analyzed immediately. The concentration of oil and grease shall not exceed 15 mg/L in any sample.

Best Management Practices (BMPs)

In addition to the numeric effluent limits and monitoring requirements for process and contaminated stormwater discharges (Outfall 002 and 002a) and uncontaminated stormwater (Outfall 001), additional requirements will be added to the permit for control of pollutants that are likely to be present in the stormwater systems at the proposed facility.

The permittee will be required to develop and implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP will identify members of the facility's pollution prevention team, contain a site description, a summary of potential pollutant sources and pollutants, and stormwater controls that will be implemented at the site. Specific Best Management Practices (BMPs) will be identified by the permittee in the SWPPP. Examples of appropriate BMPs for this facility include good housekeeping, eliminating or minimizing exposure, preventative maintenance, spill prevention, runoff management, routine facility inspections, and employee training programs, as well as any more stringent measures necessary to meet the water quality standards provisions of the permit. The SWPPP must remain compliant with relevant State, Tribal and local regulations.

There are two distinct stormwater systems proposed for the facility, one to manage oily or contaminated stormwater from process areas and the other for uncontaminated

stormwater. For the SWPPP, the permit will require the permittee to evaluate both stormwater systems, uncontaminated and contaminated, for appropriate controls and actions that will minimize pollutants discharged via stormwater from the facility.

The SWPP must be completed and the contents approved for compliance with the terms of this permit by the EPA Region 8 Stormwater Program Coordinator.

(POTENTIAL) Sanitary Wastewater (Outfall 003)

Technology Limitations (BPJ)

Technology requirements for sanitary wastewater discharges (POTWs) are found in 40 CFR Part 133, Secondary Treatment Requirements. The proposed package plant to treat sanitary wastewater is not a POTW but will treat the sanitary wastewater in a similar manner and should be capable of meeting the POTW technology standards. The following technology requirements (40 CFR 133.102) in Table 18 are applied as Best Professional Judgment (BPJ) to discharges from Outfall 003:

TABLE 18
Effluent Limitation

Pollutant	7-Day	Average
	Average (mg/L)	Daily (mg/L)
BOD ₅	45	30
TSS	45	30
pH	6.0 to 9.0	

Percentage Removal Requirements

- 85% BOD₅
- 85% TSS

Water Quality Based Effluent Limitations

Numeric and Narrative Water Quality Standards and Criteria

Water quality based effluent limits are evaluated for the discharges of treated sanitary wastewater from Outfall 003. The NPDES Permit application for this facility did not include information on the potential sanitary wastewater discharge due to recent design changes for the proposed project that are described under Alternative 4 of the DEIS. Therefore estimates of pollutants present in the discharge were obtained from similar types of sanitary wastewater treatment facilities and the potable water supply information provided in the DEIS. A reasonable potential analysis for pollutants expected to be in the discharge from Outfall 003 is presented in Table 19.

TABLE 19
Reasonable Potential Analysis (Sanitary Wastewater)
(in ug/L unless otherwise indicated)

Pollutant	NPDES Permit Application		Applicable QQS		Reasonable Potential	
	Daily Maximum	Average Daily	Acute	Chronic	Acute	Chronic
Ammonia as N (mg/L)	NR	NR	3.2	1.1	Yes	Yes
Barium (tr)	NR	NR	--	1000	--	No
Aluminum (tr)	NR	NR	750	87	No	No
Cadmium (tr)	NR	NR	6.5	0.61	No	No
Chromium (III) (tr)	NR	NR	4430	212	No	No
Chromium (VI)	NR	NR	16	11	No	No
Copper (tr)	NR	NR	39.4	23.8	No	No
Iron (tr)	NR	NR	--	300	--	Yes
Manganese (tr)	NR	NR	--	50	--	Yes
Lead (tr)	NR	NR	331	12.9	No	No
Mercury (T)	NR	NR	1.4	0.012	No	No
Nickel (tr)	NR	NR	1190	132	No	No
Selenium (tr)	NR	NR	20	5	Yes	Yes
Silver (tr)	NR	NR	25.0	--	No	--
Zinc (tr)	NR	NR	304	304	No	No
Chlorine (TRC)	NR	NR	19	11	Yes	Yes
Chloride	NR	NR	860000	230000	No	No
Fluoride	NR	NR	--	4000	--	No
Sulfate	NR	NR	--	750000	--	Yes
Nitrite as N	NR	NR	--	1000	--	Yes
Nitrate as N	NR	NR	--	10000	--	Yes
Phosphorous as P	NR	NR	--	100 ¹	--	Yes
pH (s.u.)	NR		NR		Yes	

¹State WQS is a guideline only, so monitoring only will be required.
 NR- No information provided in application.

Narrative water quality standards (dissolved oxygen, whole effluent toxicity, etc.) considered in establishing effluent limitations would also be the same as described for discharges through Outfall 002 above, however toxicity is not reasonably expected to be present in the sanitary wastewater discharge.

Proposed effluent limitations and monitoring requirements for Outfall 003 are presented in Tables 20 and 21 respectively.

(POTENTIAL) Proposed Numeric Effluent Limitations (Outfall 003)

TABLE 20

Pollutant	Effluent Limit (ug/L)			Basis for Effluent Limitation
	Daily Maximum	7-Day Average	Daily Average	
Flow, MGD	0.007	NA	0.005	DEIS
Biochemical Oxygen Demand 5-Day (mg/L)	NA	45	30	BPJ (40 CFR 133)
Total Suspended Solids (mg/L)	NA	45	30	BPJ (40 CFR 133)
Ammonia as N (mg/L)	3.2	NA	1.1	EPA 304(a) Criterion, State WQS
Total Residual Chlorine	19	NA	11	EPA 304(a) Criterion, State WQS
Iron (tr)	NA	NA	300	EPA 304(a) Criterion, Tribal WQS
Manganese (tr)	NA	NA	50	EPA 304(a) Criterion, Tribal WQS
Selenium (tr)	20	NA	5	EPA 304(a) Criterion, State WQS, Tribal WQS
Sulfate	NA	NA	750000	State WQS
Nitrite as N	NA	NA	1000	Tribal WQS
Nitrate as N	NA	NA	10000	EPA 304(a) Criterion, Tribal WQS
pH (s.u.)	7.0– 9.0			State WQS, Tribal WQS
Dissolved Oxygen (mg/L)	April 1 – Sept 30 8.0 (1-day min.) 9.5 (7-day mean) 6.5 (30-day mean) Oct 1 – March 31 4.0 (1-day min.) 5.0 (7-day mean) 6.5 (30-day mean)			Tribal WQS

The discharge from Outfall 003 shall be free from floating debris, oil, scum, and other floating materials attributable to municipal, industrial, or other discharges or agricultural practices in sufficient amounts to be unsightly or deleterious.

Percentage Removal Requirements (TSS and BOD₅ Limitation): In addition to the concentration limits for total suspended solids and BOD₅ indicated above, the arithmetic mean of the concentration for effluent samples collected in a 30-day consecutive period shall not exceed 15 percent of the arithmetic mean of the concentration for influent samples collected at approximately the same times during the same period (85 percent removal).

(POTENTIAL) Proposed Effluent Monitoring Requirements (Outfall 003)

TABLE 21

Pollutant	Monitoring Frequency	Sample Type
Flow, MGD	Daily	Continuous, Recorder
Biochemical Oxygen Demand 5-Day, mg/L ^{a/}	Monthly	Composite
Total Suspended Solids, mg/L ^{a/}	Monthly	Composite
Total Residual Chlorine, ug/L	Daily	Grab
Ammonia as N, mg/L	Quarterly	Composite
Iron (tr), ug/L	Quarterly	Composite
Manganese (tr), ug/L	Quarterly	Composite
Selenium (tr), ug/L	Quarterly	Composite
Sulfate, ug/L	Quarterly	Composite
Nitrite as N, ug/L	Quarterly	Composite
Nitrate as N, ug/L	Quarterly	Composite
Phosphorous as P, ug/L	Quarterly	Composite
pH (s.u.)	Daily	Grab or Continuous
Dissolved Oxygen, mg/L	Daily	Grab

^{a/} In addition to monitoring the final discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge.

Solids

Solids generated in the process wastewater treatment unit processes and other solid and hazardous wastes associated with the refinery operations will be managed in accordance with all applicable laws.

Refinery unit processes will generate both listed and characteristic hazardous wastes under RCRA Part 261.

Proposed Alternative DEIS

Under the proposed alternative in the DEIS, the facility would be classified as a Treatment, Storage, and Disposal Facility (TSDF) under RCRA. . The wastewater treatment facility would be designed to meet all RCRA construction requirements for a TSDF. Wastewater management units (ponds, tanks, etc.) would generate sludges that are either listed or characteristic hazardous wastes. Solids removed will be containerized and sent to a third party off-site facility that handles hazardous waste. All treatment storage and disposal of hazardous wastes would comply with 40 CFR Part 268.

Alternative 4 DEIS

Under Alternative 4 of the DEIS, The MHA Nation Clean Fuels Refinery is expected to maintain a status as a Large Quantity Generator under RCRA. All hazardous waste generated at the refinery will be managed in accordance with RCRA regulations. The wastewater treatment unit would be designed to meet the RCRA definitions at 40 CFR 260.10 for wastewater treatment unit, tank, and tank system. The wastewater unit will also meet the requirements under 40 CFR 261.31(b)(2) for aggressive biological treatment. As long as the sludges remain in the wastewater treatment system, they would be exempt from listing under F037.

Sludges generated and removed from the wastewater treatment processes (API Separator, DAF, biological treatment sludge) via the sludge thickening process, possibly a centrifuge with a solvent wash (naphtha) will be managed as hazardous waste. Solids removed will be containerized and sent to a third party off-site facility that handles hazardous waste. All disposal of hazardous wastes would comply with 40 CFR Part 268.

In addition, the package sanitary wastewater treatment plant would generate biological sludges that would be disposed of in accordance with 40 CFR Part 503 regulations for biosolids.

Reporting Requirements

Since this facility is classified as a major discharger, monthly reporting requirements will apply. Monitoring results from the previous month's discharge will be required to be reported on a standard Discharge Monitoring Report (DMR) Form, *EPA 3320-1*.

Bruce Kent, USEPA Region VIII
6/16/2006