Statement of Basis

FACILITY:	**Marathon Oil Company - Steamboat Butte Field**
PERMIT NO:	**WY-0033740**
RESPONSIBLE OFFICIAL:	R. J. Whisonant
ADDRESS:	1501 Stampede Avenue
	Cody, WY 82414
PHONE:	(307) 527-2127 (Marvin Blakesley)
PERMIT TYPE:	Minor Industrial (Renewal)

Modifications occurring in the permit: The following modifications are being made to the permit:

1. page 6. Part 1.3.1 Footnote b/. "Semi-annual" was corrected to read "quarterly" to be consistent with the sampling frequency listed in section 1.3.2.
2. page 8. Part 1.3.2 Footnote c/. "Monthly" was removed from this footnote so that it doesn't conflict with the sampling frequencies listed in the table for outfalls 001 and 002.
3. page 8. Part 1.3.2. The sample type for sulfides was corrected to be a grab sample.

Background Information

This proposed permit authorizes the discharge of produced water from Outfall 001, discharging from the skim pond at the north location (Latitude 44^0 15' 29" Longitude 108^0 54' 05"), and Outfall 002, discharging from a skim pond at the south location (Latitude 43^0 15' 08" Longitude 108^0 53' 40"), at the oil production wastewater treatment facilities for the Marathon Oil Company - Steamboat Butte Field oil production facility located in SW1/4 of Section 5 and the NW 1/4 of Section 8, Township 3N, Range 1W, (Latitude 44^0 15' 29" Longitude 108^0 54' 05" and Latitude 43^0 15' 08" Longitude 108^0 53' 40"), Fremont County, Wyoming. This facility is within the exterior boundaries of the Wind River Indian Reservation. This permit is a renewal of NPDES Permit Number WY-0033740, which expired on June 30, 2004, and was administratively extended.

Produced oil, water, and gas are separated in tanks by gravity, heat and emulsion breaking chemicals. The facility is currently or intends to use cross-linked polymer treatments to enhance recovery. A flow diagram is attached as Attachment A. Water is discharged through settling ponds where the remaining oil is removed by floatation and skimming prior to discharge to Mission Pond.

Receiving Waters

The discharge from this facility will enter Mission Pond. Outfall 001 enters Upper Mission Pond which then flows to Mission Pond. Outfall 002 gravity flows directly to Mission Pond. The discharge provides wildlife and stock watering opportunities. In addition, aquatic communities have developed in this drainage, which are dependent upon the flow of this produced water.

The Northern Arapaho and the Eastern Shoshone Tribes have not adopted and EPA has not approved Tribal water quality standards for waters within the Wind River Reservation. Therefore, there are no water quality criteria to base development of water quality based limits. There are, however, applicable federal effluent limitation guidelines as discussed below.

Monitoring Data

Monitoring data from discharge monitoring reports and the permit application from the period January 1996 to December 2004 are presented in Attachment B.

Effluent Limitations

These permit activities are covered under the effluent guideline for onshore oil and gas operations, subject to the Oil and Gas Extraction Point Source Category (40 CFR Part 435). The Oil and Gas Extraction Point Source Category Subpart C - Onshore Subcategory establishes the effluent limitation for produced water from Onshore operations as "No Discharge" [40 CFR 435.32 (a)]. However, Subpart E - Agricultural and Wildlife Water Use Subcategory allows for the discharge of produced water from facilities west of the 98th meridian to be used for agricultural and wildlife propagation. The effluent guideline further requires " . . . that the produced water is of good enough quality to be used for wildlife or livestock watering or other agricultural uses and that the produced water is actually put to such use during periods of discharge."

Marathon has notified EPA that a change in discharge has occurred at Outfall 002. The source of wastewater discharging from Outfall 002 is fresh water used by the facilities and that no produced water is discharged to the oil pit. However, the oil pit contains residual produced water contaminated sediments. Therefore, EPA has retained some of the pollutant monitoring for this outfall, including the one-time Hazard Screening.

The following effluent limitations will be required for this facility:

Effluent Limitations - Outfalls 001 and 002. Effective immediately and lasting through the life of this permit, the quality of effluent discharged by the facility shall, as a minimum, meet the limitations as set forth below.

Effluent Characteristic	Effluent Limitation		
	30-Day Average a/	7-Day Average a/	Daily Maximum a/
Flow, Total (Combined flow from 001 and 002), mgd	2.5	n/a	3.0

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

Effluent Characteristic	Effluent Limitation, Outfall 001		
	30-Day Average a/	7-Day Average a/	Daily Maximum a/
Specific Conductance, µmhos/cm			7500
Total Dissolved Solids, mg/L			5000
Chlorides, mg/L			2000
Sulfates, mg/L			3000
Total Radium 226, pCi/L			60
Total Chromium, mg/L			3.0
Acrylamide monomer, mg/L			1.0
Oil and Grease, mg/L			10 b/
The pH of the discharge shall not be less than 6.5 nor greater than 9.0 at any time.			
The discharge shall be free from substances in amounts which would cause a visible sheen or visible deposits in the receiving water or adjoining shoreline.			
No chemicals which contain toxic substances listed pursuant to Section 307 (a) of the Act shall be added to the discharge at levels which exceed the notification criteria specified under Conditions 3.9 and 3.10 of this permit.			
There shall be no addition of hexavalent chromium.			
There shall be no discharge of floating solids or visible foam in other than trace amounts.			
The discharge shall not present a hazard to humans, wildlife, or livestock.			

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

b/ A quarterly 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 10 mg/L in any sample.

Deleted: monthly

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

Effluent Characteristic	Effluent Limitation, Outfall 002		
	30-Day Average a/	7-Day Average a/	Daily Maximum a/
Specific Conductance, µmhos/cm			7500
Oil and Grease, mg/L			10 b/
The pH of the discharge shall not be less than 6.5 nor greater than 9.0 at any time.			
The discharge shall be free from substances in amounts which would cause a visible sheen or visible deposits in the receiving water or adjoining shoreline.			
No chemicals which contain toxic substances listed pursuant to Section 307 (a) of the Act shall be added to the discharge at levels which exceed the notification criteria specified under Conditions 3.9 and 3.10 of this permit. There shall be no addition of hexavalent chromium			
There shall be no discharge of floating solids or visible foam in other than trace amounts.			
The discharge shall not present a hazard to humans, wildlife, or livestock.			

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

b/ A semi-annual 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 10 mg/L in any sample.

These limits are based on EPA's Best Professional Judgment to implement the requirements of the Oil and Gas Extraction Point Source Category Subpart C - Onshore Subcategory and Subpart E - Agricultural and Wildlife Water Use Subcategory [40 CFR 435] and consideration of: 1) current uses of the receiving waters; 2) the current desires of the Tribes to have similar requirements on the Wind River Reservation and in the State of Wyoming; 3) State of Wyoming Chapter 2.H - Surface Discharge of Water Associated with the Production of Oil and Gas requirements; and 4) Water quality suitable for cattle watering as discussed in the Colorado State University Cooperative Extension's Livestock Series, issue no 4.908.

The upper pH limit for this permit was increased from 8.5 to 9.0. This decision was based on the presence of naturally high pH waters in the area. WREQC concurred with this change.

WREQC requests that a monthly average flow limit of 2.5 MGD and a maximum daily discharge limit of 3.0 mgd be included in the permit for discharge to Mission Pond because:

1. The wetland complex below the NPDES point can not filter, clean, and evaporate more than this quantity of water and degradation of the Wind River is possible (based on the conclusions of a WREQC study and report as outlined below),

2. Erosion and possible failure of the ponds and wetlands that were built is probable,
3. Insufficient capacity in the siphon which carries Mission Pond water under the Wyoming Canal,
4. Winter ice dams and the resulting flooding across Maverick Springs Road will be exacerbated, and
5. There is no further need for additional water for livestock or wildlife use downstream of Mission Pond.

In 2001 to 2003, WREQC participated in a cooperative project (Mission Pond Assessment and Monitoring, Section 104b3 Special Project) to build new ponds and wetlands downstream of the NPDES discharge points and to study the downstream water quality of the produced water to its confluence with the Big Wind River, a class 2AB river segment. WREQC prepared a final project report that was submitted to EPA Region 8 on March 31, 2003. The results of this report support the 2.5 mgd maximum discharge limit. WREQC requests that any produced water above this volume be discharged to a different receiving stream. This would require a modification to the permit

If only one flow sample is taken in a month this will be considered both the daily maximum and monthly average flow. Therefore, if discharges above 2.5 MGD are expected in a month, more flow samples than the minimum required will be needed to establish that there has been compliance with the 2.5 MGD average monthly flow limit.

There are no water quality based limits proposed for this permit as the Northern Arapaho and the Eastern Shoshone Tribes have not adopted and EPA has not approved Tribal water quality standards for waters within the Wind River Reservation. Permit Condition 4.15.1 includes a re-opener provision under which the permit may be reopened and modified, as appropriate, if Tribal Water Quality Standards are adopted and approved by EPA.

Self-Monitoring Requirements

The following self-monitoring requirements are included in this permit for each outfall:

	Sampling Frequency		
Effluent Characteristic	**001**	**002**	**Sample Type a/**
Total Flow, mgd b/	Monthly	Monthly	Daily (total) and calculate monthly average
Specific Conductance, µmhos/cm	Once per six months d/	Once per six months d/	Grab
Total Dissolved Solids, mg/L	Once per six months d/	n/a	Grab
Chlorides, mg/L	Once per six months d/	n/a	Grab
pH, standard units	Once per six months d/	Once per six months d/	Grab
Oil and grease, visual c/	Once per three months	Once per six months d/	Visual c/
Sulfates, mg/L	Once per three months	n/a	Grab
Sulfides, mg/L	Once per three months	n/a	Grab
Sulfite, mg/L	Once per three months	n/a	Grab
Chromium (total), mg/L	Once per six months d/	n/a	Grab
Acrylamide monomer, (total), mg/L	Once per six months d/	n/a	Grab
Total Radium 226, pCi/l	Once per six months d/	n/a	Grab
Benzene, mg/L	Once per three months	n/a	Grab
Ethylbenzene, mg/L	Once per three months	n/a	Grab
Toluene, mg/L	Once per three months	n/a	Grab
Xylene (total), mg/L	Once per three months	n/a	Grab
Selenium (total recoverable), ug/L	Once per six months d/	n/a	Grab
Boron (total) mg/L	Once per six months d/	n/a	Grab
Whole Effluent Toxicity Testing – Acute	Once per six months d/	n/a	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 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 10 mg/L in any sample.

d/ Sampling events shall occur at an interval of not less than three months and not more than six months.

Monitoring requirements for Boron, Sulfides, Sulfites, Benzene, Ethylbenzene, Toluene, Xylene and Selenium are new in this permit. This monitoring was included because the presence of these pollutants is indicated in the data submitted with the permit application. The monitoring data will be used to evaluate the inclusion of effluent limits for these pollutants.

Monitoring requirements for Whole Effluent Toxicity (WET) – 48 hour Acute were included based upon the flow from the facility (greater than 1 mgd), the presence of pollutants that may cause toxicity, toxicity tests completed by the permittee downstream of the permitted discharge and the proximity to receiving waters that are capable of sustaining aquatic life. The toxicity testing requirement is intended to meet the National policy of the Clean Water Act that states "it is the national policy that the discharge of pollutants in toxic amounts shall be prohibited" (Section 101(a)(3)). No specific WET limits have been included in the permit. Rather, the toxicity test is being used to identify whether or not the discharge contains concentrations of a pollutant or a combination of pollutants which are acutely toxic. However, if the effluent toxicity tests indicate verified toxicity, the permittee shall identify pollutants causing toxicity (TIE) and evaluate controls and source reduction (TRE). EPA has included a provision that requires the permittee to submit a ***TIE Plan*** within 45 days of verification of the toxicity test. The intent of the Plan is to allow EPA and the WREQC to be informed of the actions and time frame that the permittee intends to undertake to identify the toxicants. Once the toxicity identification phase (TIE) has been completed, the permittee shall have 45 days to submit a ***TRE Plan*** to communicate actions and time frames that the permittee will be undertaking to evaluate possible source control and/or treatment options for the identified pollutants.

While EPA's National Water Quality Criteria are not directly applicable to the receiving waters, it should be noted that the quality of the produced water discharges may not meet these National Water Quality Criteria for aquatic life protection. However, the water should be of necessary quality for use by livestock and wildlife. The WREQC and Joint Business Council (JBC) are moving forward to develop and implement site-specific standards. EPA is including a permit re-opener clause and additional effluent monitoring to screen for hazardous/toxic constituents to develop data for future water quality based limits (see discussion under the "Hazard Screening Requirements").

Hazard Screening Requirements

EPA will include in the permit a re-opener clause and additional effluent monitoring to screen for hazardous/toxic constituents and to develop data for future water quality based limits. Within 30 days of the effective date of this permit, a sample will be collected from each outfall and analyzed for the constituents specified below, at the required detection limits. Within 90 days of the effective date of this permit, a summary report on the produced water will be submitted to the US EPA and the Wind River Environmental Quality Commission. This summary report will include the results and detection limits for each of the constituents. Based upon the results of this screening, this permit may be reopened and effluent limits and monitoring requirements established for constituents that may present a hazard.

Parameter	Required Detection Limits and Required Units
Arsenic, Total	1 µg/L
Aluminum, Total Recoverable	50 µg/L
Ammonia, mg/L	50 µg/L
Cadmium, Total Recoverable	5 µg/L
Copper, Total Recoverable	5 µg/L
Iron, Total Recoverable	50 µg/L
Lead, Total Recoverable	2 µg/L
Manganese, Total Recoverable	50 µg/L
Mercury, Total Recoverable	0.001 µg/L
Nickel, Total Recoverable	5 µg/L
Zinc, Total Recoverable	5 µg/L
Hardness, Total	10 mg/L as CaCO3
Uranium, Total Recoverable	5 µg/L
Gross Alpha and Beta Radiation	0.2 pCi/L
Dissolved Oxygen	1 mg/L
Chemical Oxygen Demand	3 mg/L

Reporting Requirements

The facility is required to report effluent data quarterly on a discharge monitoring report. If no discharge occurred during that period, the report is to be marked "no discharge".

Re-opener Conditions

EPA will include in the permit re-opener clauses for Water Quality Standards adoption and hazard screening. Permit Condition 4.15.1 includes a re-opener provision under which the permit may be reopened and modified, as appropriate, if Tribal Water Quality Standards are adopted and approved by EPA. Permit Condition 4.16. includes a re-opener provision under which the permit may be reopened and modified, as appropriate, if constituents are present that constitute a hazard.

Colleen Gillespie
Curt McCormick
U.S. EPA
April 27, 2007

Permit Reviewed by:
Robert Shankland, SEE, NOWCC, Wastewater Unit

This permit was published for public notice on August 1, 2007. No comments were received: Colleen Gillespie, U.S. EPA Wastewater Unit, September 24, 2007.

This permit was modified to correct minor inconsistencies in sampling frequency and type. Colleen Gillespie, U.S. EPA Wastewater Unit, November 13, 2007.