

Subsection I - Sector I-Oil and Gas Extraction and Refining.

I.1 Covered Stormwater Discharges.

The requirements in Subsection I apply to stormwater discharges associated with industrial activity from Oil and Gas Extraction and Refining facilities as identified by the SIC Codes specified under Sector I in Table D-1 of Appendix D of the permit.

I.2 Industrial Activities Covered By Sector I.

Permittees under Sector I are primarily engaged in the following types of activities:

- I.2.1 oil and gas exploration, production, processing or treatment operations, or transmission facilities; and
- I.2.2 extraction and production of crude oil, natural gas, oil sands, and shale; the production of hydrocarbon liquids and natural gas from coal; and associated oil field service, supply, and repair industries.

I.3 Limitations on Coverage.

- I.3.1 Stormwater Discharges Subject to Effluent Limitation Guidelines. This permit does not authorize stormwater discharges from petroleum refining or drilling operations that are subject to nationally established effluent limitation guidelines found at 40 CFR Parts 419 and 435, respectively.

NOTE: Most contaminated discharges at petroleum refining and drilling facilities are subject to these effluent guidelines and are not eligible for coverage by this permit. (e.g., stormwater runoff which comes into contact with any raw material, intermediate produce, finished product, by-product or waste product located on petroleum refinery property, deck drainage (which includes stormwater) from oil and gas extraction facilities in the Offshore and Coastal Subcategories, etc.).

- I.3.2 Non-Stormwater Discharges. Discharges of vehicle and equipment washwater, including tank cleaning operations, are not authorized by this permit. Alternatively, washwater discharges must be authorized under a separate NPDES permit, or be discharged to a sanitary sewer in accordance with applicable industrial pretreatment requirements.

I.4 Stormwater Pollution Prevention Plan (SWPPP) Requirements.

In addition to the following requirements, you must also comply with the requirements listed in Part 2 of the permit.

- I.4.1 Drainage Area Site Map. (See also Part 2.1.2) Identify where any of the following may be exposed to precipitation or surface runoff: Reportable Quantity (RQ) releases; locations used for the treatment, storage, or disposal of wastes; processing areas and storage areas;

chemical mixing areas; construction and drilling areas; all areas subject to the effluent guidelines requirements for “No Discharge” in accordance with 40 CFR 435.32; and the structural controls to achieve compliance with the “No Discharge” requirements.

- I.4.2 Potential Pollutant Sources. (See also Part 2.1.4) Also describe the following sources and activities that have potential pollutants associated with them: chemical, cement, mud, or gel mixing activities; drilling or mining activities; and equipment cleaning and rehabilitation activities. In addition, include information about the RQ release that triggered the permit application requirements: the nature of the release (e.g., spill of oil from a drum storage area), amount of oil or hazardous substance released, amount of substance recovered, date of the release, cause of the release (e.g., poor handling techniques and lack of containment in the area), areas affected by the release (i.e., land and water), procedure to clean up release, actions or procedures implemented to prevent or improve response to a release, and remaining potential contamination of stormwater from release (taking into account human health risks, the control of drinking water intakes, and the designated uses of the receiving water).

- I.4.3 Inspections. (See also Part 2.1.5.6)
 - I.4.3.1 Inspection Frequency. Inspect all equipment and areas addressed in the SWPPP at least monthly. Also inspect equipment and vehicles that store, mix (including all on- and offsite mixing tanks), or transport chemicals or hazardous materials (including those transporting supplies to oil field activities) on a monthly basis.

 - I.4.3.2 Temporarily or Permanently Inactive Oil and Gas Extraction Facilities. For facilities that are remotely located and unstaffed, perform the inspections at least annually.

- I.4.4 Erosion and Sedimentation Control. (See also Part 2.1.5.8.) Unless covered by the current Construction General Permit (CGP), the additional sediment and erosion control requirements for well drillings and sand/shale mining areas include the following:
 - I.4.4.1 Site Description. Also include a description of the nature of the exploration activity, estimates of the total area of site and area disturbed due to exploration activity, an estimate of runoff coefficient of the site, a site drainage map, including approximate slopes, and the names of all receiving waters. All erosion and sedimentation control measures must be inspected every 7 days.

 - I.4.4.2 Vegetative Controls. Describe and implement vegetative practices designed to preserve existing vegetation, where attainable, and revegetate open areas as soon as practicable after grade drilling. Consider the following (or equivalent measures): temporary or permanent seeding, mulching, sod stabilization, vegetative buffer strips, and tree protection practices. Begin implementing appropriate vegetative practices on all disturbed areas within 14 days following the last activity in that area.

I.4.5 Contact with Waste Water Pollutants at Exploration and Production Facilities. Take measures necessary to prevent discharge of stormwater coming into contact with waste water pollutants from any sources associated with production, field exploration, drilling, well completion, or well treatment (i.e., produced water, drilling muds, drill cuttings, and produced sand).

I.4.5.1 Vehicle and Equipment Storage Areas. Confine vehicles and equipment awaiting or having undergone maintenance to designated areas (as marked on the site map). Describe and implement measures to minimize contaminants from these areas (e.g., drip pans under equipment, indoor storage, use of berms or dikes, or other equivalent measures).

I.4.5.2 Material and Chemical Storage Areas. Maintain these areas in good condition to prevent contamination of stormwater. Plainly label all hazardous materials.

I.4.5.3 Chemical Mixing Areas. (See also Part 2.1.4.) Describe and implement measures that prevent or minimize contamination of stormwater runoff from chemical mixing areas.

I.5 Monitoring and Reporting Requirements. (See also Part 3 of the permit.)

Table I-1. Sector-specific Numeric Effluent Limitations and Benchmark Monitoring			
Subsector (Discharges may be subject to requirements for more than one sector/subsector)	Parameter	Benchmark Monitoring Concentration¹	Effluent Limit Guidelines
Oil and Gas Extraction and Refining (SIC 1311, 1321, 1381-1389, 2911)	Total Suspended Solids (TSS)	100 mg/L	--
Oil Refining (SIC 2911)	Total Recoverable Lead ²	0.082 mg/L	--
	Total Recoverable Nickel ³	0.47 mg/L	--
	Total Recoverable Zinc ⁴	0.12 mg/L	--
	Ammonia Nitrogen	19 mg/L	--
	Nitrate+Nitrite Nitrogen	0.68 mg/L	--

¹You must monitor quarterly in the first year of your coverage for each benchmark parameter (see Part 3.2.2.1). For each parameter, no additional benchmark monitoring is required if the average of your 4 monitoring values does not exceed the benchmark (see Part 3.2.2.3). However, for each parameter there are additional requirements if the average of your four monitoring values exceeds the benchmark (see Part 3.2.2.4).

² The benchmark value of lead is determined as a function of hardness (in units of mg/L) in the water column. The value given in Table I-1 (i.e. 0.082 mg/L) corresponds to a hardness of 100 mg/L and should be used if you either did not analyze water hardness, other hardness data are not available, or the water hardness is less than 100 mg/L. If a laboratory analysis indicates that the water hardness is below 100 mg/L, then you should use the benchmark for 100 mg/L. If a laboratory analysis indicates that the water hardness is greater than 100 mg/L, then the following equation may be used to determine the benchmark value for lead:

$$\text{Benchmark} = (e^{[(1.273)(\ln \text{hardness}) - 1.460]})/1000$$

Example: Laboratory analysis of your water sample indicates the hardness is 175 mg/L.

$$\begin{aligned}
 \text{Benchmark} &= (e^{[(1.273)(\ln 175) - 1.460]})/1000 \\
 &= (e^{5.1148})/1000 \\
 &= 166.46/1000 \\
 &= 0.17 \text{ mg/L}
 \end{aligned}$$

The following are example benchmark value for lead:

<u>Hardness (mg/L)</u>	<u>Benchmark value (mg/L)</u>
100	0.082
125	0.11
150	0.14
175	0.17
200	0.20
225	0.23
250	0.26

³ The benchmark value of nickel is determined as a function of hardness (in units of mg/L) in the water column. The value given in Table I-1 (i.e. 0.47 mg/L) corresponds to a hardness of 100 mg/L and should be used if you either did not analyze water hardness, other hardness data are not available, or the water hardness is less than 100 mg/L. If a laboratory analysis indicates that the water hardness is below 100 mg/L, then you should use the benchmark for 100 mg/L. If a laboratory analysis indicates that the water hardness is greater than 100 mg/L, then the following equation may be used to determine the benchmark value for nickel:

$$\text{Benchmark} = (e^{[(0.8460)(\ln \text{hardness}) + 2.255]})/1000$$

Example: Laboratory analysis of your water sample indicates the hardness is 175 mg/L.

$$\begin{aligned}
 \text{Benchmark} &= (e^{[(0.8460)(\ln 175) + 2.255]})/1000 \\
 &= (e^{6.624})/1000 \\
 &= 753.26/1000 \\
 &= 0.75 \text{ mg/L}
 \end{aligned}$$

The following are example benchmark values for nickel:

<u>Hardness (mg/L)</u>	<u>Benchmark value (mg/L)</u>
100	0.47
125	0.57
150	0.66
175	0.75
200	0.84
225	0.93
250	1.02

⁴ The benchmark value of zinc is determined as a function of hardness (in units of mg/L) in the water column. The value given in Table I-1 (i.e. 0.12 mg/L) corresponds to a hardness of 100 mg/L and should be used if you either did not analyze water hardness, other hardness data are not available, or the water hardness is less than 100 mg/L. If a laboratory analysis indicates that the water hardness is below 100 mg/L, then you should use the benchmark for 100 mg/L. If a laboratory analysis indicates that the water hardness is greater than 100 mg/L, then the following equation may be used to determine the benchmark value for zinc:

$$\text{Benchmark} = (e^{[(0.8473)(\ln \text{hardness}) + 0.884]})/1000$$

Example: Laboratory analysis of your water sample indicates the hardness is 175 mg/L.

$$\begin{aligned}\text{Benchmark} &= (e^{[(0.8473)(\ln 175) + 0.884]})/1000 \\ &= (e^{5.26})/1000 \\ &= 192.51/1000 \\ &= 0.19 \text{ mg/L}\end{aligned}$$

The following are example benchmark values for zinc:

<u>Hardness (mg/L)</u>	<u>Benchmark value (mg/L)</u>
100	0.12
125	0.14
150	0.17
175	0.19
200	0.22
225	0.24
250	0.26