General Permit No. CAG280000

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR OIL AND GAS EXPLORATION, DEVELOPMENT, AND PRODUCTION FACILITIES

In compliance with the provisions of the Clean Water Act, 33 U.S.C. 1251 et seq., "the Act", the following discharges are authorized in accordance with this general National Pollutant Discharge Elimination System ("NPDES") permit: Drilling Fluids and Cuttings (001), Produced Water (002), Well Treatment, Completion and Workover Fluids (003), Deck Drainage (004), Domestic and Sanitary Waste (005), Blowout Preventer Fluid (006), Desalination Unit Discharge (007), Fire Control System Water (008), Non-Contact Cooling Water (009), Ballast and Storage Displacement Water (010), Bilge Water (011), Boiler Blowdown (012), Test Fluids (013), Diatomaceous Earth Filter Media (014), Bulk Transfer Material Overflow (015), Uncontaminated water (016), Water Flooding Discharges (017), Laboratory Waste (018), Excess Cement Slurry (019), Muds, Cuttings and Cement at Sea Floor (020); Hydrotest Water (021); and H_2S Gas Processing Waste Water (022) from oil and gas exploration, development and production facilities to federal waters off Southern California as specified below.

These exploration, development and production facilities are classified in the Offshore Subcategory of the Oil and Gas Extraction Point Source Category, as defined in 40 CFR Part 435, Subpart A. Discharges shall be in accordance with effluent limitations, monitoring and reporting requirements, and other conditions set forth in Parts I through V herein. The discharge of pollutants not specifically set forth in this permit is not authorized.

This permit authorizes discharges from all exploratory facilities operating within the permit area and development and production facilities which are not new sources including the following: Platforms A, B, C, Edith, Ellen/Elly, Eureka, Gail, Gilda, Gina, Grace, Habitat, Harmony, Harvest, Henry, Heritage, Hermosa, Hillhouse, Hidalgo, Hogan, Hondo, Houchin, and Irene. All previously issued NPDES permits (see Appendix B) are terminated once this permit becomes effective.

This permit shall become effective on , 2012.

This permit and the authorization to discharge shall expire at midnight, , 2017.

Signed this day of , 2012

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Alexis Strauss
Director, Water Division
U.S. EPA, Region 9

I. REQUIREMENTS FOR NPDES PERMITS AND COVERAGE CONDITIONS

A. Permit Applicability and Coverage Conditions

1. Operations Covered. This permit establishes effluent limitations, prohibitions, reporting requirements, and other conditions on discharges from oil and gas facilities engaged in production, field exploration, developmental drilling, well completion, well treatment operations, well workover, and abandonment operations.

2. Location of Coverage. The permit coverage area consists of the following lease blocks (by OCS lease parcel number as maintained by the Bureau of Ocean Energy Management (BOEM) and described in BOEM's Summary Lease Report):

in waters west and northwest of Point Arguello,

P-0433 P-0437 P-0438 P-0440 P-0441 P-0444 P-0450 P-0451

in waters south and west of Pt. Conception,

P-0315 P-0316 P-0320 P-0322 P-0323A

in the Santa Barbara Channel from Pt. Conception to Goleta Pt.,

P-0180 P-0181 P-0182 P-0183 P-0187 P-0188 P-0189 P-0190
P-0191 P-0192 P-0193 P-0194 P-0195 P-0326 P-0329 P-0460
P-0461 P-0464

in the Santa Barbara Channel from Santa Barbara to Ventura,

P-0166 P-0202 P-0203 P-0204 P-0205 P-0208 P-0209 P-0215
P-0216 P-0217 P-0234 P-0240 P-0241 P-0346

in the San Pedro Channel between San Pedro and Laguna,

P-0296 P-0300 P-0301 P-0306

which are located in Federal waters off the Southern California coast, seaward of the outer boundary of the territorial seas. This permit does not authorize discharges from facilities discharging to or in territorial seas of California or from facilities defined as "coastal", "onshore", or "stripper" (see 40 CFR Part 435, Subparts C, D, and F). Land based facilities operating in support of activities on the covered lease blocks are considered part of the Offshore Subcategory and discharges to Federal waters from these facilities are authorized by this permit.

3. Facilities Covered. This permit covers development and production facilities including Platforms A, B, C, Edith, Ellen/Elly, Eureka, Gail, Gilda, Gina, Grace, Habitat, Harmony, Harvest, Henry, Heritage, Hermosa, Hillhouse, Hidalgo, Hogan, Hondo, Houchin, and Irene. The permit also covers exploration facilities discharging in the permit area. Facility coverage is not effective until Notices of Intent ("NOIs") are received as described below.

4. Modifications and Revocations. This permit may be modified or revoked at any time on the basis of any new data that was not available at the time of permit issuance if the new data would have justified the application of different permit conditions at the time of issuance. This includes any information indicating that cumulative effects on the environment are unacceptable. Such cumulative effects on the environment include unreasonable degradation of the marine environment due to continued discharges, in which case the Director, Water Division, Region 9 may determine that additional conditions are necessary to protect the marine environment or special aquatic sites. Permit modification will be conducted in accordance with 40 CFR Parts 122.62, 122.63 and 124.

5. Prohibitions. During the term of this general permit, operators are authorized to discharge under the general permit the enumerated waste streams subject to the restrictions set forth herein. This permit does not authorize the discharge of any waste streams, including spills and other unintentional or non-routine discharges of pollutants, that are not part of the normal operation of the facility, or any pollutants that are not ordinarily present in such waste streams.

6. Notification Requirements.

a. Coverage Under This Permit. For the development and production, and exploration facilities located on platforms listed above in Part I.A.3, written notification of intent to be covered under this permit shall be submitted by the effective date of this permit. The Notice of Intent to be covered shall include the legal name and address of the operator, the lease block number assigned by the Department of the Interior, and the number and type of facilities located within the lease block.

For development and production facilities other than those listed above in Part I.A.3, the NOI shall include the above information and shall also include information to substantiate that the facility is not a new source, as defined in Part V of this permit. Initiation of discharges may not begin until EPA has reviewed the submitted information and notified the permittee in writing that this general permit is appropriate for the proposed operation, and the permittee has obtained all applicable approvals and certifications by BOEM and the California Coastal Commission (CCC) of the development and production plan.

For exploratory operations conducted by exploration facilities not located on platforms listed above in Part I.A.3, the Notice of Intent shall be submitted at least 30 days prior to initiation of discharges. Initiation of discharges may not begin until EPA has reviewed the proposed operation and notified the permittee in writing that this general permit is appropriate for the proposed operation, and the permittee has obtained all applicable approvals and certifications by BOEM and the CCC of the exploration plan.

b. Termination of Operations. Facility or lease block operators shall notify the Director in writing within 60 days after permanent termination of discharges from their facilities within the lease block.

c. Duty to Provide Notice of Intent for Continued Activity. If the permittee wishes to discharge under the authority of this permit after its expiration date, the permittee must submit a notice of intent to EPA to do so. The Notice of Intent shall be submitted at least 180 days before the expiration date of this permit, and shall include the information specified in Part I.A.6.a above. Timely receipt of a complete Notice of Intent by EPA shall qualify the Permittee for an administrative extension of its authorization to discharge under this permit pursuant to 5 U.S.C. Section 558(c), until a new permit is issued and becomes effective.

d. Submission of Requests to be Covered and Other Reports. Reports and notifications, including discharge monitoring reports and notifications of non-compliance required herein shall be submitted either to the following addresses, or electronically (EPA only) using NetDMR.

US EPA, Region 9
NPDES/DMR, WTR-7
75 Hawthorne Street
San Francisco, California 94105-3901
Phone: (415) 972-3507

Regional Supervisor
Bureau of Safety and Environmental Enforcement (BSEE)
770 Paseo Camarillo
Camarillo, CA 93010

Alison Dettmer, Manager
Energy & Ocean Resources Unit
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105-2219

B. Requiring an Individual Permit

1. The Director may require any Permittee discharging under the authority of this permit to apply for and obtain an individual NPDES permit. The following criteria (40 CFR Part 122.28(b)(3)), as well as other relevant considerations, may be used in making such determinations:

a. Whether the discharger is in compliance with the conditions of this general permit.

b. A change has occurred in the availability of demonstrated technology or practices for the control or abatement of pollutants applicable to the point source.

c. Effluent limitations guidelines are promulgated for point sources covered by the general permit.

d. A Water Quality Management plan containing requirements applicable to the point sources is approved.

e. Circumstances have changed since the time of the request to be covered so that the discharger is no longer appropriately controlled under the general permit, or either a temporary or permanent reduction or elimination of the authorized discharge is necessary.

f. The discharger(s) is a significant contributor of pollutants. In making this determination, the Director may consider the following factors:

(1) The location of the discharge with respect to waters of the United States;
(2) The size of the discharge;
(3) The quantity and nature of the pollutants discharged to waters of the United States; and
(4) Other relevant factors.

2. The Director may require any Permittee authorized by this permit to apply for an individual NPDES permit only if the Permittee has been notified in writing that an individual permit application is required.

3. Any Permittee authorized by this permit may request to be excluded from the coverage of this general permit by applying for an individual permit. The owner or operator shall submit an application together with the reasons supporting the request to the Director.

4. When an individual NPDES permit is issued to a Permittee otherwise subject to this general permit, the applicability of this general permit to that owner or operator is automatically terminated on the effective date of the individual permit.

II. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

A. Drilling Fluids and Cuttings (Discharge 001)

1. Effluent Limitations. The Permittee shall comply with the following effluent limitations and monitoring requirements.

Table 1 - Drilling Fluids and Cuttings[1] Effluent Limitations and Monitoring Requirements

Effluent Characteristic	Discharge Limitation	Measurement Frequency	Sample Type/Methods	Reported Values[5]
Total Discharge Volume	See note 2.	Daily	Estimate	Per well total
Toxicity of Drilling Fluids and Cuttings	MinimumLC50 of the SPP shall be 3% by volume	End-of-well (at least 80% of permitted well footage)[4]	Grab/Drilling Fluids Toxicity Test	96-hr LC50 Part II.A.2.d
Free Oil	No discharge	Weekly[7] & before bulk discharges	Grab/Static Sheen test Part II.A.2.b.	Number of days sheen observed
Oil-based fluids[3]	No discharge	--N/A--	--N/A--	--N/A--
Diesel oil content	No discharge	--N/A--	Part II.A.2.a.	--N/A--
Barite: Cadmium	3 mg/kg[6]	See II.A.2.c	Method 3050B followed by 6010B	mg/kg dry wt.
Barite: Mercury	1 mg/kg	See II.A.2.c	Method 7471A	mg/kg dry wt.
Chemical Inventory	--N/A--	Once per mud system	Part II.A.3.	--N/A--
Non-Aqueous Based Drilling Fluids and Associated Cuttings	No discharge	--N/A--	--N/A--	--N/A--

Notes:

[1] All cuttings limitations except the "no free oil" requirements as determined by the Static Sheen Test are monitored by sampling and analysis of drilling fluid samples. Compliance with the drilling fluids limitation demonstrates compliance with the corresponding cuttings limitation.

[2] The Permittee shall estimate and report the total discharge volume per well for drilling fluids and drill cuttings. The volumes for fluids and cuttings shall be reported separately. The Permittee shall also report the number of days of discharge of each drilling fluid system used.

[3] The discharge of drilling muds which contain waste engine oil, cooling oil, gear oil, or lubricant which has previously been used for purposes other than borehole lubrication is prohibited. The discharge of cuttings generated using drilling fluids which contain mineral oil is prohibited except when the mineral oil is used as a carrier fluid (transporter fluid), lubricity additive, or pill.

[4] Intermediate depth mud systems are also subject to the 30,000 ppm limit by testing or by using generic fluids; see "Use of generic drilling fluids." The "permitted well footage" refers to the well footage permitted by the MMS.

[5] The permittees shall submit the Well DMR on the established DMR schedule (see Part III.C.). The Well DMR shall be submitted at the next scheduled DMR date at least 45 days after the completion of drilling activity. The Well DMR shall report all discharges for each well from a mobile drilling unit or all rig associated discharges listed in this table for platform mounted rigs. Copies of the toxicity test reports, barite certifications, and drilling fluids inventory information shall be included with the Well DMR.

[6] The discharge limitation for cadmium in barite is 2 mg/kg for Platforms Harmony and Heritage.

[7] The sampling frequency for the static sheen test shall be weekly. When drilling into a hydrocarbon bearing zone, sampling frequency shall be daily.

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2. Monitoring Requirements.

a. Diesel Oil. Compliance with the limitation on diesel oil shall be demonstrated through the Drilling Fluids Inventory.

b. Static Sheen Test. The Permittee shall perform the Static Sheen Test on separate samples of drilling fluids and cuttings. The test shall be conducted in accordance with "Approved Methodology; Laboratory Sheen Tests for the Offshore Subcategory, Oil and Gas Extraction Industry, " which is Appendix 1 to Subpart A of 40 CFR Part 435. If the static sheen test indicates

the presence of free oil, discharge of the tested material shall cease; if subsequent tests do not indicate free oil, discharge may continue.

c. Mercury and Cadmium Content of Barite. Compliance shall be demonstrated by analysis of the stock barite or by certification based on supplier documentation. Results for total mercury and total cadmium shall be submitted in the DMR for the well. Analysis for cadmium shall be conducted using method 3050B followed by 6010B (EPA SW 846) and results expressed as mg/kg (dry weight) of barite. Analysis for mercury shall be conducted using method 7471A (EPA SW 846) and expressed as mg/kg (dry weight) of barite.

The Permittee may provide analysis of representative samples of stock barite once prior to drilling each well. If more than one well is drilled using the same stock supply, new analyses are not required for subsequent wells if no new supplies of barite have been received since the previous analyses. In this latter case, the DMR should state that no new barite was received since the last reported analyses.

Alternatively, operators may provide certification, as documented by the supplier(s), that the barite meets the above limits. The concentration of mercury and cadmium in stock barite shall be reported on the well DMR as documented by the supplier.

d. Toxicity Test for Drilling Fluids and Cuttings. The minimum 96 hour LC50 value, using the *Mysidopsis bahia,* for drilling fluids and cuttings discharged in compliance with this permit is 3% of the Suspended Particulate Phase ("SPP") by volume. The Permittee shall demonstrate compliance with this limit for both drilling fluids and cuttings by conducting and reporting the results of a drilling fluids bioassay for each mud system which is used and discharged except as provided in Part II.A.3 below. Drilling fluid samples for the bioassay shall be taken at the time that maximum well footage is reached for each mud system (defined as at least 80% of the actual permitted well footage at the time of discharge within each interval during the drilling of the well for which a separate mud system is used and discharged).

The bioassay procedure to be used is "Drilling Fluids Toxicity Test" (Appendix 2 to Subpart A of 40 CFR Part 435). Bioassay results shall be submitted with the Well DMR (see note 5, Section II.A.1.)

3. Drilling Fluids Systems and Inventories

a. Drilling Fluids Inventory and Reporting Requirements. The Permittee shall maintain a precise inventory of all drilling fluid constituents added downhole for each well. The composition of each mud system used and discharged by the Permittee shall be reported to EPA. Mud composition data shall be submitted to EPA with the Well DMR. The Permittee shall report the following for <u>each</u> mud system: 1) base (generic) drilling fluid type, 2) product name and total amount (volume or weight) of each constituent in discharged drilling fluid; 3) the total volumes of drilling fluids discharged; and 4) the number of days of discharge. The permittee shall also report the estimated maximum concentration of each constituent in the discharged drilling fluid, if no toxicity test is conducted on the drilling fluid system.

b. Use of Generic Drilling Fluids. With the exception of the drilling fluids system discharged when the well reaches its maximum footage, the toxicity requirement shall be met by a toxicity test as described above in Part II.A.2.d or by the demonstration by the Permittee that a discharged drilling fluid complies with the requirements of (1), (2) or (3) below:

(1) The drilling fluid is generic as defined in Part II.A.3.c below.

(2) The drilling fluid is generic (excluding generic mud #1) and all specialty additives included in the fluid satisfy either of the following conditions:

(a) When each additive is included at its maximum concentration in generic fluid #7 (lightly treated lignosulfonate mud), the 96 hour LC50 value of the resulting fluid exceeds 100,000 ppm for the suspended particulate phase; or

(b) Other toxicity data is available for the additive upon which EPA may reasonably conclude that (a) above would be satisfied.

(3) The drilling fluid is generic and contains additives used in quantities such that the resulting whole fluid may, based on toxicity data for similar whole fluids or toxicity data for the additives, be shown to comply with the overall toxicity limit of 30,000 ppm. The Permittee shall be responsible for providing this demonstration of compliance. The method in "Separate and Joint Toxicity to Rainbow Trout of Substances Used in Drilling Fluids for Oil Exploration" (Sprague and Logan, *Environmental Pollution*, Volume 19, No. 4, August, 1979) may be used to estimate joint toxicity.

c. Generic Drilling Fluids. Hematite or other weighting materials may be substituted for barite at the given maximum allowable concentrations.

Table 2 - Generic Drilling Fluids

Generic Mud Number	Maximum Allowable Concentration (pounds/barrel)
1. Seawater/Potassium/Polymer Mud	
KCl	50
Starch	12
Cellulose Polymer	5
XC Polymer	2
Drilled Solids	100
Caustic	3
2. Seawater/Lignosulfonate Mud	
Attapulgite or Bentonite	50
Lignosulfonate	15

Lignite	10
Caustic	4
Barite	450
Drilled Solids	100
Soda Ash/Sodium Bicarbonate	2
Cellulose Polymer	5
Seawater	As Needed
3. Lime Mud	
Lime	20
Bentonite	50
Lignosulfonate	15
Lignite	10
Barite	180
Caustic	5
Drilled Solids	100
Soda Ash/Sodium Bicarbonate	2
Freshwater	As Needed
4. Nondispersed Mud	
Bentonite	15
Acrylic Polymer	2
Barite	180
Drilled Solids	70
Freshwater	As Needed
5. Spud Mud (slugged intermittently with seawater)	
Attapulgite or Bentonite	50
Caustic	3
Cellulose Polymer	2
Drilled Solids	100
Barite	50
Soda Ash/Sodium Bicarbonate	2
Lime	2
Seawater	As Needed
6. Seawater Gel Mud	
Attapulgite or Bentonite	50
Caustic	3
Cellulose Polymer	2
Drilled Solids	100
Barite	50
Soda Ash/Sodium Bicarbonate	2
Lime	2

Seawater	As Needed
7. Lightly Treated Lignosulfonate Freshwater/Seawater Mud	
Bentonite	50
Barite	180
Caustic	3
lignosulfonate	6
Lignite	4
Cellulose Polymer	2
Drilling Solids	100
Soda Ash/Sodium Bicarbonate	2
Lime	2
Seawater to Freshwater Ratio	1:1
8. Lignosulfonate Freshwater Mud	
Bentonite	5
Barite	450
Caustic	5
Lignosulfonate	15
Lignite	10
Drilling Solids	100
Cellulose Polymer	2
Soda Ash/Sodium Bicarbonate	2
Lime	2
Seawater to Freshwater Ratio	As Needed

d. Notice of Final Mud Dump. The Permittee shall provide verbal notice to EPA (or other Federal Agency designated by EPA at a later date) at least 48 hours prior to the final mud dump upon completion of each well. Reports during normal business hours shall be provided to the CWA Compliance Office, Water Division, at telephone number 415-972-3507. Twenty-four hour reporting may be made at 415-947-4400.

e. Restrictions on the Use of Mineral Oils in Drilling Fluids. Mineral oil may be used only as a carrier fluid (transporter fluid), lubricity additive, or pill.

4. Maximum Allowable Annual Discharge Volumes for Drilling Fluids, Cuttings and Excess Cement.

Table 3 - Maximum Discharge Volumes for Drilling Fluids, Cuttings and Excess Cement Slurry

Facility	Maximum Annual Allowable Cuttings	Maximum Annual Allowable Drilling Fluids	Maximum Annual Allowable Excess

	discharged, bbls	discharged, bbls	Cement Slurry Discharged, bbls
A	30,000	105,000	3,000
B	30,000	105,000	3,000
C	30,000	105,000	3,000
Edith	90,000	105,000	6,500
Ellen/Elly	18,150	49,950	1,200
Eureka	13,350	36,650	1,200
Gail	28,700	49,500	2,000
Gilda	30,000	105,000	2,500
Gina	30,000	105,000	2,500
Grace	28,700	49,500	2,000
Habitat	30,000	105,000	2,500
Harmony	40,000	200,000	4,000
Harvest	12,000	53,500	2,000
Henry	30,000	105,000	3,000
Heritage	40,000	200,000	4,000
Hermosa	11,250	41,000	2,000
Hidalgo	6,000	23,000	2,000
Hillhouse	30,000	105,000	3,000
Hogan	34,000	118,000	3,300
Hondo	40,000	200,000	4,000
Houchin	34,000	118,000	3,300
Irene	30,000	105,000	2,500

B. Produced Water (Discharge 002)

1. Platform-Specific Effluent Limits and Monitoring Requirements. Platform-specific effluent limitations and monitoring requirements are set forth in Appendix B.

a. Permittees with platforms not listed in Appendix B, which may discharge produced water during the term of this permit, shall follow the procedures of Appendix D in conducting an analysis of the reasonable potential of the discharges to cause or contribute to exceedances of applicable marine water quality criteria.

b. Monitoring for Constituents of Concern. For all platforms with produced water discharges, the constituents listed in Appendix D (Table D-1) C shall be sampled at least once during the last two years of the term of this permit, and the results shall be submitted on the DMR at least 180 days before this permit expires. For platforms with a platform specific limit in Appendix B, the permittee may substitute the sampling results conducted in accordance with Appendix B for constituents listed in Appendix B.

c. Dilution Ratio Changes. The permittee shall calculate the quarterly dilution value each quarter and submit the results with the DMR. If the quarterly dilution value decreases relative to the value at the time of the permit issuance, this permit may be reopened and modified to include additional effluent limitations and monitoring requirements based on the reasonable potential for the exceedance of a water quality criterion found in Appendix D, Table D-1.

2. Chronic Whole Effluent Toxicity (WET) Requirements

a. Monitoring Frequency. Once each calendar year, at a different time of year from the previous years, the permittee shall split a 24-hour composite effluent sample and concurrently conduct three toxicity tests using a fish, an invertebrate, and an alga species (see below for specific species information).

Chronic toxicity test samples shall be collected for each point of discharge at the designated NPDES sampling station for the effluent (i.e., downstream from the last treatment process and any in-plant return flows where a representative effluent sample can be obtained). During years ***1, 2, 3, 4, and 5*** of the permit, a split of each sample shall be analyzed for all other monitored parameters at the minimum frequency of analysis specified by the effluent monitoring program.

b. Species and EPA WET Test Methods. Species and short-term EPA WET test methods for estimating chronic toxicity are found in "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms," EPA/600/R-95/136, August 1995. The permittee shall conduct the following chronic toxicity tests:

- Red abalone (*Haliotis rufescens*) larval development test
- Giant kelp, *Macrocystis pyrifera,* germination and germ-tube length tests
- Topsmelt, *Atherinops affinis,* larval survival and growth tests

c. Chronic WET Permit Triggers. There are no chronic toxicity effluent limits for this discharge. The chronic WET permit trigger is any one WET test (either biological endpoint of survival or sublethal) where a test result is *Fail* (during the monthly reporting period) at the chronic in-stream waste concentration (IWC). For this discharge, the IWC is the percent effluent subsequent to dilution in the mixing zone as determined in Appendix A of the permit. To calculate either a Pass or Fail of the multiple-effluent concentration chronic toxicity test at the IWC, follow the instructions in Appendix A in the *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA/833-R-10-003). A Pass result indicates no toxicity at the IWC, and a Fail result indicates toxicity at the IWC. The permittee shall report either a Pass or a Fail on the DMR form. If a result is reported as Fail, the permittee shall follow Part 2.7 (Reporting of Chronic Toxicity Monitoring Results) of this permit.

d. Quality Assurance.

1) Quality assurance measures, instructions, and other recommendations and requirements are in the EPA WET test methods method referenced above.

2) This permit is subject to a determination of Pass or Fail from a multiple-effluent concentration chronic toxicity test at the IWC (for statistical flowchart and procedures, see *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document*, Appendix A, Figure A-1).

3) Control and dilution water will be standard laboratory water. If organisms are cultured in-house and the dilution water used is different from culture water, a second control, using culture water shall also be used.

4) If organisms are not cultured in-house, then concurrent testing with a reference toxicant shall be conducted. If organisms are cultured in-house, then monthly reference toxicant testing is sufficient. Reference toxicant tests and effluent toxicity tests shall be conducted using the same test conditions (e.g., same test duration).

5) If either the reference toxicant or effluent toxicity tests do not meet all test acceptability criteria in the EPA WET test methods manual, then the permittee shall resample and retest within 14 days.

6) Following Paragraph 10.2.6.2 of the freshwater EPA WET test methods manual, all chronic toxicity test results from the multi-concentration tests required by this permit shall be reviewed and reported according to EPA guidance on the evaluation of concentration-response relationships in *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)* (EPA/821/B-00-004, 2000).

7) One initial composite sample may be used for all renewals for the chronic seven day topsmelt larval growth and survival test, only if safety or unexpected process shut down does not allow for multiple sample renewals. The Permittee will attempt to collect the three sample renewals.

8) If the discharged effluent is chlorinated, then chlorine shall not be removed from the effluent sample before toxicity testing without written approval by the permitting authority.

e. Initial Investigation TRE Work Plan

Within 90 days of the permit effective date, the permittee shall prepare and submit to the U.S. EPA Director a copy of its Initial Investigation Toxicity Reduction Evaluation (TRE) Work Plan (1–2 pages) for review. This plan shall contain steps the permittee intends to follow if toxicity is measured above a chronic WET permit limit or trigger and should include the following, at minimum:

1) A description of the investigation and evaluation techniques that would be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency.

2) A description of methods for maximizing in-house treatment system efficiency, good housekeeping practices, and a list of all chemicals used in operations at the facility.

3) If a Toxicity Identification Evaluation (TIE) is necessary, an indication of who would conduct the TIEs (i.e., an in-house expert or outside contractor).

f. Accelerated Toxicity Testing and TRE/TIE Process

1) If a chronic WET permit limit or trigger is exceeded and the source of toxicity is known (e.g., a temporary plant upset), then the permittee shall conduct one additional toxicity test using the same species and EPA WET test method. This WET test shall begin within 14 days of receipt of WET test results exceeding a chronic WET permit limit or trigger. If the additional toxicity test does not exceed a chronic WET permit limit or trigger, then the permittee may return to their regular testing frequency.

2) If a chronic WET permit limit or trigger is exceeded and the source of toxicity is not known, then the permittee shall conduct six additional toxicity tests using the same species and EPA WET test method, approximately every two weeks, over a 12 week period. This testing shall begin within 14 days of receipt of WET test results exceeding a chronic WET permit limit or trigger. If none of the additional toxicity tests exceed a chronic WET permit limit or trigger, then the permittee may return to their regular testing frequency.

3) If one of the additional toxicity tests (in paragraphs 6.a or 6.b) exceeds a chronic WET permit limit or trigger, then, within 14 days of receipt of this WET test result, the permittee shall initiate a TRE using as guidance, according to the type of treatment facility, the EPA TRE manual, *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants* (EPA/ 833/B-99/002, 1999) or EPA TRE manual, *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070, 1989). In conjunction, the permittee shall develop and implement a Detailed TRE Work Plan which shall contain the

following: further actions undertaken by the permittee to investigate, identify, and correct the causes of toxicity; actions the permittee will take to mitigate the effects of the discharge and prevent the recurrence of toxicity; and a schedule for such actions.

4) The permittee may initiate a TIE as part of a TRE to identify the causes of toxicity using the same species and EPA WET test method and, as guidance, EPA WET TIE/TRE method manuals: *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I* (EPA/600/6-91/005F, 1992); *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993); *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993).

g. Reporting of Chronic Toxicity Monitoring Results

1). The permittee shall submit a full laboratory report as an attachment to the DMR for all toxicity testing for the month in which the toxicity test was conducted; the laboratory report shall contain the following: the toxicity test results, the dates of sample collection and initiation of each toxicity test; all results for effluent parameters monitored concurrently with the toxicity test(s); and progress reports on TIE/TRE investigations.

2) The permittee shall provide the actual test endpoint responses for the control (i.e., control mean) and IWC concentration (i.e., IWC mean) for each WET test conducted to make it easier for permit writers to find the necessary WET test results when determining WET RP.

3) The permittee shall notify the U.S. EPA Director in writing within 14 days of exceedance of a chronic WET permit limit or trigger. The notification shall describe actions the permittee has taken or will take to investigate, identify, and correct the causes of toxicity; the status of actions required by this permit; and schedule for actions not yet completed; or reason(s) that no action has been taken.

h. Reopener. In accordance with 40 CFR Parts 122 and 124, this permit may be modified to include effluent limitations or permit conditions to address chronic toxicity in the effluent or receiving waterbody, as a result of the discharge; or to implement new, revised, or newly interpreted water quality standards applicable to chronic toxicity.

3. Commingled Waste Streams. If workover, completion, well treatment or test fluids are mixed with produced water, then all of the effluent limitations and monitoring requirements applied to produced water shall apply and supersede limits for the separate waste streams. Likewise, if deck drainage is commingled with produced water, then all of the effluent limitations and requirements applied to produced water shall apply (Part II.B) and supersede limits for the separate discharge of deck drainage. If other authorized discharges are mixed with produced water, then all of the effluent limitations and monitoring requirements applied to produced water shall apply and supersede limits for the separate waste streams. If deck drainage, work over, completion, well treatment or test fluids or other authorized discharges are commingled with

produced water, "commingled" shall be reported on the DMRs for both produced water and the waste stream mixed with it.

4. Table 4 - Maximum Annual Allowable Produced Water Discharges

Facility	Maximum Annual Allowable Produced Water Discharged, bbls
A	13,140,000
B	16,425,000
C	13,140,000
Edith	3,285,000
Ellen/Elly	10,950,000
Eureka	Included with Ellen/Elly
Gail	4,380,000
Gilda/Gina	25,500,000
Grace	2,190,000
Habitat	1,642,500
Harmony, Heritage, Hondo	33,762,500[note I]
Harvest	32,850,000
Henry	6,570,000
Hermosa	40,250,000
Hidalgo	18,250,000
Hillhouse	7,300,000
Hogan	13,900,000
Houchin	13,900,000
Irene	55,845,000

Notes:

1. Any produced water volumes discharged from Hondo and Heritage platforms would reduce the volume discharge at Harmony platform by an equal amount. Currently all produced water from Hondo and Heritage platforms is discharged at Platform Harmony as part of the Santa Ynez Unit operations.

5. Effluent Limitations.

a. Effluent Limitations and Monitoring Requirements. The discharge of produced water shall comply with the following effluent limitations and monitoring requirements.

Table 5 -Produced Water Effluent Limitations and Monitoring Requirements

Effluent Characteristic	Discharge Limitation	Measurement Frequency	Sample Type/Method	Reported Values
Flow rate (BWD)	--N/A-	Daily	Estimate	Monthly average
Oil and Grease	29 mg/l monthly avg. 42 mg/l daily max.	Weekly Weekly	Grab/Composite Grab/Composite	The average of daily values for 30 consecutive days; the maximum for any one day.

b. Test Method for Oil and Grease. The test method for oil and grease is EPA Method 1664.

The term *maximum for any one day* as applied to BPT, BCT and BAT effluent limitations for oil and grease in produced water shall mean the maximum concentration allowed as measured by the average of four grab samples collected over a 24-hour period that are analysed separately. Alternatively, one grab sample may be taken instead of four samples. If only one grab sample is taken for any one week, it must meet the maximum for any one day limit. If four samples are taken for oil and grease over a 24-hour period, the maximum value for reporting purposes under Part III.A.2.a.i. of the permit is the average of the four samples rather than the maximum of the four samples. EPA may reopen and modify this permit to require four samples of oil and grease in produced water taken at equally spaced intervals over a 24-hour period.

6. Monitoring Requirements. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures are specified here or elsewhere in this permit. Samples for monitoring produced water toxicity and specific chemicals other than oil and grease shall be collected after addition of any added substances, including seawater, that are added prior to discharge, and before the flow is split for multiple ports.

7. Flow Rate with Flow Augmentation. When seawater or other flow augmentation is added to the produced water prior to discharge, the total produced water flow, including the added materials, shall be used in determining the dilution.

C. Well Treatment, Completion and Workover Fluids (Discharges 003)

1. Effluent Limitations. The discharge of well treatment, completion and workover fluids shall comply with the following effluent limitations and monitoring requirements.

Table 6 - Effluent Limitations and Monitoring Requirements

Waste Type	Effluent Characteristic	Discharge Limitation	Measurement Frequency	Sample Type/Methods	Reported Values
All	Number of Jobs	--N/A--	Once/job[1]	Count	Type & total number of jobs
	Discharge volume (Bbls)	--N/A--	Once/job	Estimate	Discharge Volume per Job
	Free Oil	No discharge	Once/discharge	Grab/Static Sheen test	Number of times sheen observed
	Oil and grease	42 mg/l max daily 29 mg/l monthly avg.	Once/job	Grab	Max for any one day and the average of daily values for 30 consecutive days

[1] The type of job where discharge occurs (i.e., completion, workover, treatment, or any combination) shall be reported.

2. Commingled Waste streams. If work over, completion, or well treatment fluids are commingled with produced water, then effluent limitations and monitoring requirements for work over, completion, and well treatment fluids do not apply. Effluent limitations and monitoring requirements for produced water apply.

D. Deck Drainage (Discharges 004)

1. Effluent Limitations. The Permittee shall comply with the following effluent limitations and monitoring requirements.

Table 7 - Effluent Limitations and Monitoring Requirements

Effluent Characteristic	Discharge Limitation	Measurement Frequency	Sample Type/Method	Reported Values
Flow rate (bbl/d)	--N/A--	Monthly	Estimate	Monthly Avg.
Free Oil	No Discharge	Daily, during discharge	Visual/Sheen on receiving water	Number of days sheen observed

2. Commingled Waste streams. If deck drainage is commingled with produced water, then effluent limitations and monitoring requirements for deck drainage do not apply. Effluent limitations and monitoring requirements for produced water apply.

E. Domestic and Sanitary Wastes (Discharges 005)

1. Effluent Limitations. The Permittee shall comply with the following effluent limitations and monitoring requirements.

Table 8 - Effluent Limitations and Monitoring Requirements

Waste Type	Effluent Characteristic	Discharge Limitation	Measurement Frequency	Sample Type/Method	Reported Values
Sanitary	Flow Rate (bbl/d)	--N/A--	Monthly	Estimate	Monthly Average
Domestic	Flow Rate (bbl/d)	--N/A--	Monthly	Estimate	Monthly Average
Sanitary[1,2] (Facilities continuously manned by nine (9) or fewer persons or only inter-mittently manned by any number of persons)	Floating Solids[1]	No discharge	Daily	Observation[3]	Number of days solids observed

Sanitary[1,2] (Facilities continuously manned by ten (10) or more persons)	Total Residual Chlorine (TRC)	Minimum of 1 mg/l and main-tain ed as close to this concentra-tion as possible; maximum concentra-tion is 10 mg/l.	Monthly	Grab	Concentration in mg/l
Domestic[4]	Foam or Floating Solids	No Discharge	Daily	Observation[3]	Number of days foam or floating solids observed

1 In cases where sanitary and domestic wastes are mixed prior to discharge, and sampling of the sanitary waste component stream is infeasible, the discharge may be sampled after mixing. In such cases, the discharge limitations for sanitary wastes shall apply to the mixed waste stream.

2 Any facility which properly operates and maintains a marine sanitation device ("MSD") that was certified by the United States Coast Guard ("USCG") under Section 312 of the Act shall be deemed to be in compliance with permit limitations for sanitary wastes and the requirements for total residual chlorine do not apply. The MSD shall be inspected yearly for proper operations, and inspection results maintained with the permit records.

3 Monitoring by visual observation of the surface of the receiving water in the vicinity of the outfall(s) shall be conducted during daylight hours.

4 The discharge of food waste is prohibited within 12 nautical miles from the nearest land. Comminuted food waste able to pass through a 25 mm mesh screen may be discharged more than 12 miles from the nearest land.

F. Miscellaneous Discharges (Discharges 006-022)

1. Effluent Limitations. The discharge of blowout preventer fluid (006); desalination unit discharges (007); fire control system water (008): noncontact cooling water (009); ballast and storage displacement water (010); bilge water (011); boiler blowdown (012); test fluids (013); diatomaceous earth filter media (014); bulk transfer material overflow (015); uncontaminated water (016); water flooding discharges (017); laboratory wastes (018); excess cement slurry (019);

muds, cuttings & cement at sea floor (020); hydrotest water (021); and H_2S gas processing waste water (022) shall comply with the following effluent limitations and monitoring requirements.

Table 9 - Effluent Limitations and Monitoring Requirements

Waste Type	Effluent Characteristic	Discharge Limitation	Measurement Frequency	Sample Type/Method	Reported Values
Noncontact Cooling Water, Ballast and Storage Displacement Water, Bilge Water, Test Fluids, Excess Cement Slurry, Hydrotest Water, H_2S Gas Processing Waste Water	Flow Rate (bbl/d)	--N/A--	Monthly	Estimate	Monthly Average
Blowout Preventer, Excess Cement Slurry, Water flooding, Muds, Cuttings & Cement at Sea floor, Ballast and Storage Displacement Water, Bilge Water, Test Fluids, Diatomaceous Earth Filter media, Laboratory Wastes, Hydrotest Water, H_2S Gas Processing Waste Water	Free Oil	No discharge	Once/discharge for discharges lasting < 24 hours Once/24 hours for discharges lasting >24 hours	Visual sheen on receiving water	Number of days sheen observed

Hydrotest Water, Fire Control System Test Water, Non-contact Cooling Waters, Test Fluids, Water Flooding Discharges	Chemical Inventory	--N/A--	Monthly	See Part II.F.3	–N/A--
Fire Control System Test Water, Noncontact Cooling Water, Hydrotest Water	Chlorine	Monitor only. See II.F.4 below.		Grab	ug/l
Discharges 006-022	Floating Solids and Foam	No Discharge	Once/Day	Visual Observation During Daylight Hours	Number of Days Floating Solids or Foam Observed

2. Ballast and Storage Displacement Water (010) and Bilge Water (011). Ballast and storage displacement water and bilge water shall be processed through an oil-water separator prior to discharge.

3. Chemical Inventory. The Permittee shall maintain an inventory of the quantities and application rates (concentration) of chemicals (other than fresh or seawater) added to listed discharges. The inventory shall be submitted with the DMR.

4. Chlorine Reasonable Potential Monitoring. Permittees not listed in Appendix C which initiate the addition of chlorine to a wastestream shall monitor for chlorine at end-of-pipe and follow the procedures of Appendix D in conducting an analysis of the reasonable potential of the discharges to cause or contribute to exceedances of applicable marine water quality criteria. For reasonable potential determinations, water quality criteria for chlorine in seawater are 7.5 ug/l (criteria continuous concentration) and 13 ug/l (criteria maximum concentration).

G. Other Discharge Conditions and Limitations

1. Surfactants, Dispersants, and Detergents. The discharge of surfactants, dispersants, and detergents shall be minimized except as necessary to comply with the safety requirements of the

Occupational Health and Safety Administration and BSEE. The discharge of dispersants to marine waters in response to oil or other hazardous spills is not authorized by this permit.

2. Other Toxic and Non-conventional Compounds. There shall be no discharge of diesel oil, halogenated phenol compounds, or chrome lignosulfonate.

3. Produced Sands. There shall be no discharge of produced sands.

4. Tracer Materials. Radioactive tracer concentration above the background in the parent, discharged waste stream shall be limited as given in 10 CFR 20 Appendix B, Table II, Column 2, Effluent Concentrations, Water.

5. Reopener Clause.

a. This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the Act, as amended, if the effluent standard, limitation or requirement so issued or approved:

1) Contains different conditions or is otherwise more stringent than any condition in the permit; or

2) Controls any pollutant or disposal method not addressed in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.

6. On Line Oil and Grease Monitors.

For all permittees which may discharge produced water, within one year of the effective date of this permit, the permittee shall install an on-line monitoring device to provide continuous monitoring of oil and grease in produced water dischargers. Records of the monitoring shall be maintained at the platform, and a summary shall be submitted to EPA with each DMR.

7. Garbage

The discharge of garbage (see Part V) is prohibited. Exception: comminuted food waste (able to pass through a 25 mm mesh screen) may be discharged when 12 nautical miles or more from the nearest land.

8. Cooling Water Intake Structure (CWIS) Requirements

Within one year of the effective date of this permit, each permittee operating a production or development facility covered by this permit with a cooling water discharge shall submit a report with the information described below. (Alternatively, permittees may jointly submit the

information; joint submittals shall constitute compliance for those permittees who participate in submitting the information jointly.)

a. description of current CWIS and existing measures to minimize entrainment/impingement

b. assessment of the environmental impacts from entrainment/impingement given current practices, and

c. practicality of additional measures to reduce environmental impacts from entrainment/impingement

This permit may be reopened and modified to include additional effluent limits or monitoring requirements depending on the information in the report described above.

III. MONITORING, RECORDING AND REPORTING REQUIREMENTS

A. Monitoring Procedures (40 CFR Part 122.41(j)(4)). Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in the permit.

1. Additional Monitoring Requirements. For effluent monitoring, the Permittee shall utilize an EPA-approved test procedure with a minimum level ("ML") which is lower than the effluent limitations. The Permittee must utilize a standard calibration where the lowest standard point is equal to or less than the concentration of the minimum level, ("ML"). In accordance with 40 CFR 122.45(c), effluent analyses for metals shall measure "total recoverable metal."

2. Additional Reporting Requirements. The permittee shall report the analytical results on Discharge Monitoring Report (DMR) forms (EPA Form 3320-1).

a. Report for maximum daily effluent limitation (or if no limitation applies but samples are collected during the monthly reporting period):

   i. The maximum value of all analytical results, if the maximum value is greater than the ML; or

   ii. No discharge/no data (not quantifiable) (NODI (Q)) , if the maximum value of all analytical results is greater than or equal to the laboratory's MDL, but less than the ML; or

   iii. NODI (B) (below detection level)) , if the maximum value of all analytical results is less than the laboratory's MDL.

b. Report for average monthly effluent limitation (or if no limitation applies but samples are collected during the monthly reporting period):

i. As directed for maximum daily effluent limitation, if only one sample is collected during the monthly reporting period; or

ii. The average value of all analytical results where 0 (zero) is substituted for NODI (B) and the laboratory's MDL is substituted for NODI (Q), if more than one sample is collected during the monthly reporting period.

c. Report as an attachment to the DMR form for each value reported under paragraphs 2.a and 2.b:

1. The number or title of the approved analytical method, preparation procedure utilized by the laboratory, and MDL or ML of the analytical method for the pollutant available under 40 CFR 136;

2. The laboratory's MDL for the analytical method computed in accordance with Appendix B of 40 CFR 136, the standard deviation (S) from the laboratory's MDL study, and the number of replicate analyses (*n*) used to compute the laboratory's MDL; and

3. The lowest calibration standard (i.e., the ML, or lower value).

B. Representative Sampling (40 CFR Part 122.41(j)(1)). Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

C. Reporting Monitoring Results (40 CFR 122.41). The Permittee shall summarize monitoring results each month on the DMR form (EPA No. 3320-1)(40 CFR Part 122.41(l)(4)). The Permittee shall submit reports quarterly, postmarked by the 28th day of the month following each quarter, as scheduled below. The Permittee shall sign and certify all DMRs and all other reports, in accordance with the requirements of Part IV.(k) of this permit ("Signatory Requirements").

Start of Quarterly DMR Cycle	Facilities
1st month after permit effective date	A, B, C, Harvest, Ellen/Elly, Eureka, Harmony
2nd month after permit effective date	Henry, Hillhouse, Habitat, Irene, Hermosa, Grace, Heritage
3rd month after permit effective date	Edith, Gilda, Gina, Hidalgo, Gail, Hogan, Hondo, Houchin

D. Additional Monitoring by Permittee (40 CFR Part 122.41(l)(4)(ii)). If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR Part 136 or as specified in this permit, the permittee shall include the results of this monitoring in the calculation and reporting of the data submitted in the DMR.

E. Records Contents (40 CFR 122.41(j)(3)). All records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;

2. The individual(s) who performed the sampling or measurements;

3. The date(s) analyses were performed;

4. The individual(s) who performed the analyses;

5. The analytical techniques or methods used; and

6. The results of such analyzes.

F. Retention of Records (40 CFR 122.41(j)(2)) 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 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time. Records retained by the permittee in accordance with this requirement shall be maintained at the offshore facility.

IV. STANDARD CONDITIONS

(a) *Duty to comply (40 CFR Part 122.41(a)).* The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

(1) The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

(2) The Clean Water Act provides that 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 section 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $25,000 per day for each violation. The Clean Water Act provides that 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 of 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 of not more than 2 years, or both. Any person who *knowingly* violates such sections, or such conditions or limitations 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 violations, or imprisonment of not more than 6 years, or both. 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 of 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 or not more than $500,000 or by imprisonment of 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) 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 such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $27,500. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $137,500.

(b) *Duty to reapply (40 CFR Part 122.41(b)).* 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.

(c) *Need to halt or reduce activity not a defense (40 CFR Part 122.41(c)).* It shall not be a defense for the 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.

(d) *Duty to mitigate (40 CFR Part 122.41(d)).* 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.

(e) *Proper operation and maintenance (40 CFR Part 122.41(e)).* 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.

(f) *Permit actions (40 CFR Part 122.41(f)).* 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 modification of planned change or anticipated noncompliance does not stay any permit condition.

(g) *Property rights (40 CFR Part 122.41(g)).* This permit does not convey any property rights of any sort, or any exclusive privilege.

(h) *Duty to provide information (40 CFR Part 122.41(h)).* 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.

(i) *Inspection and entry(40 CFR Part 122.41(i)).* The permittee shall allow the Director, or an 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:

(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) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(4) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

(j) *Monitoring and records (40 CFR Part 122.41(j)).* (See above Section III)

The Clean Water Act provides that any person who falsifies, tampers with, or knowingly 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 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both. (40 CFR Part 122.41(j)(5))

(k) *Signatory requirement (40 CFR Part 122.41(k)).*

(1) All applications, reports, or information submitted to the Director shall be signed and certified. (See 40 CFR § 122.22)

(2) The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other documents submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

(l) Reporting requirements (40 CFR Part 122.41(l)).

(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:

(i) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR Part 122.29(b); or

(ii) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR Part 122.42(a)(1).

(iii) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;

(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.

(3) *Transfers.* This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act. (See 40 CFR part 122.61; in some cases, modification or revocation and reissuance is mandatory.)

(4) *Monitoring reports.* (See Section III above) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit. (40 CFR Part 122.41(l)(4)(iii))

(5) *Compliance schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. (40 CFR Part 122.41(l)(5))

(6) *Twenty-four hour reporting.* (40 CFR Part 122.41(l)(6))

(i) The Permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee became aware of the circumstances. Twenty-four hour reporting may be made at 415-744-2000. A written submission shall be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(ii) The following shall be included as information which must be reported within 24 hours under this paragraph.

(A) Any unanticipated bypass which exceeds any effluent limitation in the permit (See §122.41(g)).

(B) Any upset which exceeds any effluent limitation in the permit.

(C) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24-hours. (See §122.44(g)).

(iii) The Director may waive the written report on a case-by-case basis for reports under paragraphs (l)(6)(ii) of this section if the oral report has been received within 24 hours.

(7) *Other noncompliance.* The permittee shall report all instances of noncompliance, not reported under paragraphs (l)(4), (5), and (6) of this section, at the time monitoring reports are submitted. The report shall contain the information in paragraph (l)(6) of this section.

(8) *Other information.* Where 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 in any report to the Director, it shall promptly submit such facts or information.

(m) *Bypass (40 CFR Part 122.41(m)).*

(1) Definitions.

(i) *Bypass* means the intentional diversion of waste streams from any portion of a treatment facility.

(ii) *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.

(2) *Bypass not exceeding limitations.* The Permittee may allow any bypass to occur that 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 paragraphs (m)(3) and (m)(4) of this section.

(3) *Notice.*

(i) *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.

(ii) *Unanticipated bypass.* The permittee shall submit notice of an unanticipated bypass as required in paragraph (l)(6) of this section (24-hour notice).

(4) *Prohibition of bypass.*

(i) Bypass is prohibited, and the Director may take enforcement action against the permittee for a bypass, unless:

(A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(B) 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 judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

(C) The Permittee submitted notices as required under paragraph (m)(3) of this section.

(ii) 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 paragraph (m)(4)(i) of this section.

(n) *Upset (40 CFR Part 122.41(n)).*

(1) *Definition.* *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.

(2) *Effect of an upset.* An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph (n)(3) of this section 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.

(3) *Conditions necessary for demonstration of an 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:

(i) An upset occurred and that the Permittee can identify the cause(s) of the upset;

(ii) The permitted facility was at the time being properly operated; and

(iii) The permittee submitted notice of the upset as required in paragraph (l)(6)(ii)(B) of this section (24-hour notice).

(iv) The permittee complied with any remedial measures required under paragraph (d) of this section.

(4) *Burden of proof.* In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

V. DEFINITIONS

"Acute-to-chronic ratio" (ACR) is the ratio of the acute toxicity of an effluent or a toxicant to its chronic toxicity. It is used as a factor for estimating chronic toxicity on the basis of acute toxicity data, or for estimating acute toxicity on the basis of chronic toxicity data.

"Acute toxic unit (TU_a)" is a measure of acute toxicity. The number of acute toxic units in the effluent is calculated as 100/LC50, where the LC50 is measured in percent effluent.

"Average of daily values for 30 consecutive days" shall be the average of the daily values obtained during any 30 consecutive day period. (40 CFR Part 435.11)

"Average monthly discharge limitation" means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

"Average quarterly flow" means the average of the "monthly average" wastewater flows as reported on the previous quarter's DMR, based only on those months in which discharges occurred.

"Bbl/d" means barrels per day. One barrel equals 42 United States gallons at 60 degrees Fahrenheit.

"Chronic toxic unit" (TU_c) is the reciprocal of the effluent concentration that causes no observable effect on the test organisms by the end of the chronic exposure period (e.g., 100/NOEC).

"Chronic toxicity" is defined as a long-term test in which sublethal effects (e.g., reduced growth or reproduction) are usually measured in addition to lethality. Chronic toxicity is defined as TUc = 100/NOEC or TUc = 100/EC or IC. The IC and EC value should be the approximate equivalent of the NOEC calculated by hypothesis testing for each test method.

"Coefficient of variation" (CV) is a standard statistical measure of the relative variation of a distribution of set of data, defined as the standard deviation divided by the mean.

"Composite sample" means a collection of individual samples obtained at regular intervals, usually based upon time or flow volume. (Permit Writers Guide) The compositing period should be appropriate to ensure representative sampling of the discharge.

"Cooling water intake structure" means the total physical structure and any associated constructed waterways used to withdraw cooling water from waters of the United States. The cooling water intake structure extends from the point at which water is withdrawn from the surface water source up to, and including, but not limited to, the intake pumps.

"Daily discharge" means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

"Daily values" as applied to produced water effluent limitations shall refer to the daily measurements used to assess compliance with the maximum for any one day. (40 CFR Part 435.11)

"Deck drainage" shall refer to any waste resulting from deck washings, spillage, rainwater, and runoff from gutters and drains including drip pans and work areas within facilities subject to this subpart. Within the definition of deck drainage for the purpose of this subpart, the term rainwater for those facilities located on land is limited to that precipitation runoff that reasonably has the potential to come into contact with process wastewater. Runoff not included in the deck drainage definition would be subject to control as storm water under 40 CFR Part 122.26. For structures located over water, all runoff is included in the deck drainage definition. (40 CFR Part 435.11)

"Development facility" shall mean any fixed or mobile structure subject to this subpart that is engaged in the drilling of productive wells. (40 CFR Part 435.11)

"Diesel oil" shall refer to the grade of distillate fuel, as specified in the American Society for Testing and Materials Standard Specifications D975-81, that is typically used as the continuous phase in conventional oil-based drilling fluids. (40 CFR Part 435.11)

"Dilution ratio, D_m" is the value calculated in accordance with Appendix A - dilution expressed in parts seawater per part wastewater.

"Director" means the Director, Water Division of EPA, Region 9.

"Domestic wastes" shall refer to materials discharged from, sinks, showers, laundries, safety showers, eye-wash stations, hand-wash stations, fish-cleaning stations, and galleys located within facilities subject to this subpart. (40 CFR Part 435.11)

"Drill cuttings" shall refer to the particles generated by drilling into subsurface geologic formations and carried to the surface with the drilling fluid. (40 CFR 435.11)

"Drilling fluid" means the circulating fluid (mud) used in the rotary drilling of wells to clean and condition the hole and to counterbalance formation pressure. A water-based drilling fluid is the conventional drilling mud in which water is the continuous phase and the suspended medium for solids, whether or not oil is present. An oil based drilling fluid has diesel oil, mineral oil, or some other oil as its continuous phase with water as the dispersed phase.

"Effect concentration" (EC) is a point estimate of the toxicant concentration that would cause an observable adverse effect (such as death, immobilization, or serious incapacitation) in a given percentage of the test organisms.

"Entrainment" means the incorporation of all life stages of fish and shellfish with intake water flow entering and passing through a cooling water intake structure and into a cooling water system.

"Excess Cement Slurry" means excess mixed cement, including additives and wastes from equipment washdown after a cementing operation.

"Exploratory facility" shall mean any fixed or mobile structure subject to this subpart that is engaged in the drilling of wells to determine the nature of potential hydrocarbon reservoirs. (40 CFR Part 435.11)

"Garbage" means all kinds of food wastes, wastes generated in living areas on the facility, and operational waste, excluding fresh fish and parts thereof, generated during the normal operation of the facility and liable to be disposed of continuously or periodically, except dishwater, graywater, and those substances that are defined or listed in other Annexes to MARPOL 73/78.

"Grab" sample is a single sample collected at a particular time and place that represents the composition of the wastestream only at that time and place.

"Graywater" means drainage from dishwater, shower, laundry, bath, and washbasin drains and does not include drainage from toilets, urinals, hospitals, and cargo spaces.

"Impingement" means the entrapment of all life stages of fish and shellfish on the outer part of an intake structure or against a screening device during periods of intake water withdrawal.

"Inhibition concentration" (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a non-quantal biological measurement (e.g., reproduction or growth) calculated from a continuous model (e.g., USEPA Interpolation Method).

"LC_{50}" means the concentration of effluent that is acutely toxic to 50 percent of the test organisms exposed.

"Lowest observed effect concentration" (LOEC) is the lowest concentration of toxicant to which organisms are exposed in a test, which causes adverse effects on the test organisms (i.e., where the values for the observed endpoints are statistically significant different from the control).

"Maintenance waste" means materials collected while maintaining and operating the facility, including, but not limited to, soot, machinery deposits, scraped painted, deck sweepings, wiping wastes, and rags.

"Maximum" as applied to BAT effluent limitations for drilling fluids and drill cuttings means the maximum concentration allowed as measured in any single sample of the barite for determination of cadmium and mercury content (40 CFR 435.11).

"Maximum daily discharge limitation" means the highest allowable "daily discharge."

"Method detection limit (MDL)" means the minimum concentration of an analyte that can be detected with 99% confidence that the analyte concentration is greater than zero as determined by a specific laboratory method listed in 40 CFR Part 136. The procedure for determination of a laboratory MDL is in 40 CFR Part 136, Appendix B.

"Minimum" as applied to BAT effluent limitations for drilling fluids and drill cuttings shall mean the minimum 96-hour LC50 value allowed as measured in any single sample of the discharged waste stream. The term minimum as applied to BPT and BCT effluent limitations and NSPS for sanitary wastes shall mean the minimum concentration value allowed as measured in any single sample of the discharged waste stream. (40 CFR 435.11)

"Minimum dilution limit" means the lowest dilution ratio for the wastestream to avoid reasonable potential to exceed water quality criteria set forth in Appendix D of this permit.

"Minimum level" (ML) is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all of the method-specified sample weights, volumes, and processing steps have been followed (as defined in EPA's draft National Guidance for the Permitting, Monitoring, and Enforcement of Water Quality-Based Effluent Limitations Set Below Analytical Detection/Quantitative Levels, March 22, 1994). Promulgated method-specified MLs are contained in 40 CFR Part 136, Appendix A and must be utilized if available. If a promulgated method-specific ML is not available, then an interim ML shall be calculated. The interim ML is equal to 3.18 times the promulgated method-specific MDL rounded to the nearest multiple of 1, 2, 5, 10, 50 etc.

"Minimum significant difference" (MSD) is the magnitude of difference from control where the null hypothesis is rejected in a statistical test comparing a treatment with a control. MSD is based on the number of replicates, control performance and power of the test.

"Mixing zone" means the zone extending from the sea's surface to seabed and extending laterally to a distance of 100 meters in all directions from the discharge point or to the boundary of the zone of initial dilution as calculated by a plume model or other method approved by the Regional Administrator, whichever is larger (40 CFR 125.121(c)).

"mg/kg" means milligrams per kilogram.

"mg/l" means milligrams per liter.

"Monthly average" means the average of "daily discharges" over a monitoring month calculated as the sum of all "daily discharges" measured divided by the number of "daily discharges" measured during that month.

"M9IM" shall mean those offshore facilities continuously manned by nine (9) or fewer persons or only intermittently manned by any number of persons. (40 CFR 435.11)

"M10" shall mean those offshore facilities continuously manned by ten (10) or more persons. (40 CFR 435.11)

"New source" means any facility or activity of this subcategory that meets the definition of "new source" under 40 CFR Part 122.2 and meets the criteria for determination of new sources under 40 CFR 122.29(b) applied consistently with all of the following definitions:

(1) The term *water area* as used in the term "site" in 40 CFR 122.29 and 122.2 shall mean the water area and ocean floor beneath any exploratory, development, or production facility where such facility is conducting its exploratory, development or production activities.
(2) The term *significant site preparation work* as used in 40 CFR 122.29 shall mean the process of surveying, clearing or preparing an area of the ocean floor for the purpose of constructing or placing a development or production facility on or over the site. "New Source" does *not* include facilities covered by an existing NPDES permit immediately prior to the effective date of these guidelines pending EPA issuance of a new source NPDES permit. (40 CFR Part 435.11)

"No discharge of free oil" shall mean that waste streams may not be discharged when they would cause a film or sheen upon or a discoloration of the surface of the receiving water or fail the static sheen test defined in Appendix 1 to 40 CFR 435, Subpart A. (40 CFR 435.11)

"Non-aqueous based drilling fluid" is one in which the continuous phase is a water immiscible fluid such as an oleaginous material (e.g., mineral oil, enhanced mineral oil, paraffinic oil, or synthetic material such as olefins and vegetable esters).

"No observed effect concentration" (NOEC) is the highest concentration of toxicant to which organisms are exposed in a full life-cycle or partial life-cycle (short-term) tests, that causes no observable adverse effect on the test organisms (i.e., the highest concentration of toxicant at which the values for the observed responses are not statistically significant different from the controls). NOECs calculated by hypothesis testing are dependent upon the concentrations selected.

"Operational waste" means all cargo associated waste, maintenance waste, cargo residues, and ashes and clinkers from incinerators and coal burning boilers.

"Produced sands" shall refer to slurried particles used in hydraulic fracturing, the accumulated formation sands and scales particles generated during production. Produced sand also includes desander discharge from the produced water waste stream, and blowdown of the water phase from the production water treating system. (40 CFR Part 435.11)

"Produced water" shall refer to the water (brine) brought up from the hydrocarbon-bearing strata during the extraction of oil and gas, and can include formation water, injection water, and any chemicals added downhole or during the oil/water separation process. (40 CFR 435.11)

"Production facility" shall means any fixed or mobile structure subject to this subpart that is either engaged in well completion or used for active recovery of hydrocarbons from producing formations. (40 CFR 435.11)

"Quarterly dilution value" means the dilution ratio using the "average quarterly flow."

"Reference toxicant test" indicates the sensitivity of the organisms being used and the suitability of the test methodology. Reference toxicant data are part of routine QA/QC program to evaluate the performance of laboratory personnel and test organisms.

"Sanitary wastes" shall refer to human body waste discharged from toilets and urinals located within the facilities subject to this subpart. (40 CFR 435.11)

"Significant difference" is defined as statistically significant difference (e.g., 95% confidence level) in the means of two distributions of sampling results.

"Static sheen test" shall refer to the standard test procedures that has been developed for this industrial subcategory for the purpose of demonstrating compliance with the requirement of no discharge of free oil The methodology for performing the static sheen test is presented in Appendix 1 to 40 CFR 435, subpart A. (40 CFR 435.11)

"Test acceptability criteria" (TAC) For toxicity tests results to be acceptable for compliance, the effluent and the concurrent reference toxicant must meet specific criteria as defined in the test method (e.g., *Ceriodaphnia dubia* survival and reproduction test, the criteria are: the test must achieve at least 80% survival and average 15 young/female in the controls, and achieve a MSD of 20%).

"Toxicity" as applied to BAT effluent limitations for drilling fluids and drill cuttings shall refer to the bioassay test procedure presented in Appendix 2 of 40 CFR Part 435, subpart A. (40 CFR Part 435.11)

"Toxicity identification evaluation" (TIE) is a set of procedures to identify the specific chemical(s) responsible for effluent toxicity. TIEs are a subset of the TRE.

"Toxicity reduction evaluation" (TRE) is a site-specific study conducted in a stepwise process designed to identify the causative agents of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity.

"Toxicity tests" are laboratory experiments which employ the use of standardized test organisms to measure the adverse effect (e.g., growth, survival or reproduction) of effluent or ambient waters.

"Well completion fluids" shall refer to salt solutions, weighted brines, polymers, and various additives used to prevent damage to the well bore during operations which prepare the drilled well for hydrocarbon production. (40 CFR Part 435.11)

"Well treatment fluids" shall refer to any fluid used to restore or improve productivity by chemically or physically altering hydrocarbon-bearing strata after a well has been drilled. (40 CFR Part 435.11)

"Whole effluent toxicity" (WET) is the total toxic effect of an effluent or receiving water measured directly with a toxicity test.

"Workover fluids" shall refer to salt solutions, weighted brines, polymers, or other specialty additives used in a producing well to allow for maintenance, repair or abandonment procedures. (40 CFR Part 435.11)

"96-hour LC50" shall refer to the concentration (parts per million) or percent of the suspended particulate phase (SPP) from a sample that is lethal to 50 percent of the test organism exposed to that concentration of the SPP after 96 hours of constant exposure. (40 CFR Part 435.11)

"µg/l" means micrograms per liter.

Appendix A-Dilution

A. Calculation of Effluent Concentration at the Point of Compliance

Effluent limitations for parameters identified in Appendices B and C shall be determined through the use of the following equation: $C_o = (C_e + D_m C_s)/(D_m + 1)$

where C_o = Concentration at the edge of the mixing zone,
C_e = the end-of-pipe effluent concentration,

C_s = the background seawater concentration (see Table 1), and
D_m = the dilution ratio expressed in parts seawater per part wastewater.

On the DMR required in Part III.C, the Permittee shall report post-dilution results (C_o) so as to be directly comparable to the limits specified in Appendices B and C. The end-of-pipe sampling results (C_e) and dilution ratio (D_m) shall be submitted as a supplement to the DMR.

Table 1. Seawater Background Concentrations (Cs)

Constituent	Cs (ug/l)
Arsenic	3
Copper	2
Mercury	0.0005
Silver	0.16
Zinc	8

For waste constituents not listed in Table 1, the seawater background concentration (C_s) is assumed to be 0 mg/l.

B. Calculation of Dilution

The dilution ratio at the point of compliance shall be determined by permittees using the model PLUMES (3rd Edition or later editions when available) with specific input conditions. Specific instructions follow below.

Permittees wishing to increase mixing may do so by using a diffuser or diffusers, adding sea water to the effluent, or installing multiple discharge ports.

Hydraulic considerations may indicate that flow rates from equal sized ports connected to a common vertical down-pipe will vary with depth. Permittees may adjust flows from individual ports by varying the port diameters. In this case, a "discharge volume" weighted average port diameter may be used in Parts 4 through 6, below, when determining the dilution ratio as long as the maximum and minimum port diameters are within 50 percent of each other. On the other hand, if ports of equal size are used, the average flow rate through a port may be used when determining the dilution ratio as long as the maximum and minimum port flow rates are within 20 percent of each other. Port sizes or port flow rates outside the range of these conditions shall have the dilution ratio calculated separately for each port and the lowest dilution ratio that is obtained shall be used to demonstrate compliance with the effluent limitations identified in Part II.B and II.F.

1. Determination of the Dilution Ratio Using PLUMES. The permittee shall use site specific values for the following discharge and ambient conditions:

a. Discharge Conditions. Effluent temperature at the port and salinity (which determine effluent density), discharge rate, decay coefficient, port diameter (for single port discharges or multiple port discharges that do not merge), diffuser configuration (port diameter and spacing, number of ports), and port orientation (dip angle and azimuth).

b. Ambient Conditions. Current speed (median value is acceptable), ambient density at the port, ambient density gradient

c. Typical Conditions. In lieu of using site specific ambient conditions, a permittee may utilize the following typical Southern California OCS ambient conditions in the model: current speed = 0.115 m/s, ambient density at discharge port = 1025.6 kg/m3, ambient density gradient = 0.01 kg/m3/m.

d. When sea water is added to produced water prior to discharge, the total produced water flow, including the added sea water, shall be used in determining the dilution ratio.

e. The permittee shall retain calculation sheets showing how the dilution ratio was determined.

2. Use of the PLUMES Model. The permittee shall use the "UM" module of the PLUMES model. Printed output listings (direct output to "prn") from PLUMES which are used to determine the critical dilution ratio shall be retained as part of the permittee's NPDES records. The dilution ratio is the value in the second column at the end of the output listing when the "far dis" field (see below) is set to the point of compliance. This is the dilution ratio determined according to the 4/3 power law. Settings of individual fields of the PLUMES input screen are discussed in the following paragraphs.

a. Configuration String. The permittee shall ensure that the configuration string shown near the bottom of the PLUMES input screen is set appropriately for the conditions being modeled. For example, if conditions are such that the plume direction will reverse near the discharge port, it is appropriate to set the configuration screen to read "ATNM2". If there is no such reversal, it is appropriate to retain the default configuration string "ATNO0".

b. "Linear" vs. "non-linear" mode. PLUMES may be run in linear mode (i.e., specifying ambient densities and effluent densities only) according to the results of the following test using Figure 1 of this Appendix. In Figure 1, compute (A) the absolute value of the difference (in practical salinity units) between the effluent salinity and the salinity at the effluent temperature for which the density is the same as the ambient density; compute (B) the absolute value of the effluent temperature minus the ambient temperature in degrees C. Linear mode can only be used when the ratio of A over B is greater than 0.5.

c. Far-field distance ("far dis" field). This should be set to 100 meters (i.e., the outer edge of the mixing zone).

d. Far-field increment ("far inc" field). This should be set so that an integer multiple equals 100. The value 20 is suggested.

e. Print frequency ("print frq" field). Normally the default value should be used here. In certain instances, the initial dilution ratio calculation may extend beyond 100 meters (this will be necessary to calculate dilution at the seaward boundary of the territorial seas of the State of California). In such cases the initial dilution ratio calculation will have to be interpolated to determine the critical dilution ratio at 100 meters. Setting "print frq" to a smaller value (say 10) will provide the necessary resolution.

f. Vertical angle ("ver angle" field). A port pointing straight down will have a vertical angle of -90. A port pointing straight up will have a vertical angle of 90. A horizontal port will have a vertical angle of zero.

g. Contraction Coefficient ("cont coef" field). For discharges from a straight pipe, the contraction coefficient shall be set to 1.0. For discharges from a port that is a sharp edged orifice for which the exit velocity based on the area of the orifice is greater than 0.5 m/s, the contraction coefficient shall be set to 0.61.

h. Far-field dissipation parameter ("far dif" field). This input variable should be set to 0.000462 [m^(2/3)]/s, a value appropriate for the California OCS.

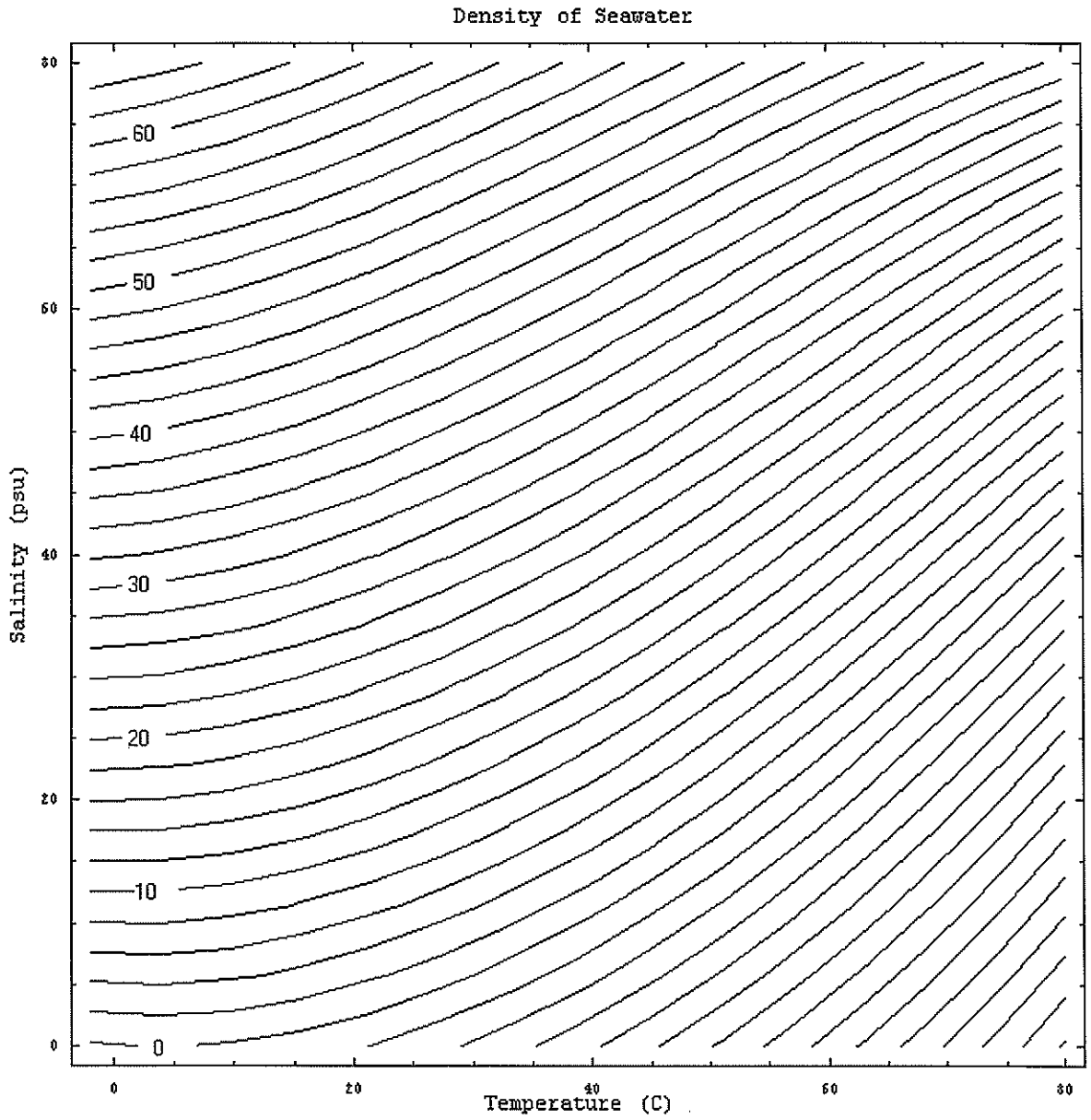
i. Far-field velocity ("far vel" field). This variable shall be set to the same value as used in the current profile ("current" fields in the lower left quadrant of the input screen).

j. Ambient density ("density" in the lower left quadrant of the input screen). In linear mode, these values should be set to provide the required linear density gradient and the required ambient density at the discharge port. In non-linear mode, these values will be calculated by PLUMES.

k. Ambient salinity and temperature ("salinity" and "temp" fields). In non-linear mode, these values are specified such that the required linear density gradient and the required ambient density at the discharge point are obtained.

For the analysis of horizontal diffusers with multiple ports or multiple discharge points spaced horizontally, the "#_ports" and "spacing" fields must be set appropriately. In case of parallel currents, where the velocity vector lies less than 20 degrees off the diffuser axis, a minimum value of 20 degrees should be specified. For example, a cross-current is specified by a horizontal angle of 90 degrees. A current flowing obliquely across the diffuser at 45 degrees would have a horizontal angle value of 45 degrees. This angle should be between 45 and 135 degrees.

Figure 1. Density (sigma-t) Contours



Appendix B - Platform Specific Requirements for Produced Water

The effluent limitations in the following tables are applicable following initial dilution in the mixing zone defined in Part V of the general permit. Compliance with the limits shall be calculated in accordance with Appendix A of the general permit.

Table B-1 - Requirements for Platform A

No requirements

Table B-2 - Requirements for Platform B

No requirements

Table B-3 - Requirements for Platform Edith

No requirements

Table B-4 - Requirements for Platform Elly

No requirements

Table B-5 - Requirements for Platform Gail

Constituent	Maximum Daily Limit	Average Monthly Limit	Measurement Frequency	Sample Type	Reported Values
Undissociated Sulfide	0.00579 mg/l	0.001669 mg/l	Once/quarter	Grab	Daily Max and Monthly Ave

Table B-6 - Requirements for Platform Gilda

Constituent	Maximum Daily Limit	Average Monthly Limit	Measurement Frequency	Sample Type	Reported Values
Undissociated Sulfide	0.00579 mg/l	0.001523 mg/l	Once/quarter	Grab	Daily Max and Monthly Ave

Table B-7 - Requirements for Platform Gina

No requirements

Table B-8 - Requirements for Platform Habitat

No requirements

Table B-9 - Requirements for Platform Harmony

No requirements

Table B-10 - Requirements for Platform Harvest

Constituent	Maximum Daily Limit	Average Monthly Limit	Measurement Frequency	Sample Type	Reported Values
Copper	0.002694 mg/l	0.002273 mg/l	Once/quarter	Grab	Daily Max and Monthly Ave
Benzene	0.026 mg/l	0.0059 mg/l	Once/quarter	Grab	Daily Max and Monthly Ave
Undissociated Sulfide	0.00579 mg/l	0.00368 mg/l	Once/quarter	Grab	Daily Max and Monthly Ave

Table B-11 - Requirements for Platform Hermosa

Constituent	Maximum Daily Limit	Average Monthly Limit	Measurement Frequency	Sample Type	Reported Values
Undissociated Sulfide	0.00562 mg/l	0.00495 mg/l	Once/quarter	Grab	Daily Max and Monthly Ave

Table B-12 - Requirements for Platform Hidalgo

Constituent	Maximum Daily Limit	Average Monthly Limit	Measurement Frequency	Sample Type	Reported Values
Undissociated Sulfide	0.00535 mg/l	0.00505 mg/l	Once/quarter	Grab	Daily Max and Monthly Ave

Table B-13 - Requirements for Platform Hillhouse

No requirements

Table B-14 - Requirements for Platform Hogan

Constituent	Maximum Daily Limit	Average Monthly Limit	Measurement Frequency	Sample Type	Reported Values
Benzene	0.0174 mg/l	0.0059 mg/l	Once/quarter	Grab	Daily Max and Monthly Ave

Appendix C - Platform Specific Requirements for Chlorine in Cooling Water and Fire Control System Test Water Discharges

The effluent limitations for chlorine in the following tables are applicable following initial dilution in the mixing zone defined in Part V of the general permit. Compliance with the limits shall be determined through the use of the following equation:

$$C_o = C_e/(1 + D_m)$$

Where C_o = the concentration at the edge of the mixing zone,
C_e = the end-of-pipe concentration prior to dilution, and
D_m = the dilution ratio expressed in parts seawater per part wastewater.

On the Discharge Monitoring Report (DMR) required by Part III.C of the general permit, the permittee shall report post-dilution results (C_o) so as to be directly comparable to the effluent limits in the tables. The end-of-pipe sampling result (C_e) and D_m shall be submitted as a supplement to the DMR.

Table C-1 – Effluent Limitations and Monitoring Requirements for Cooling Water

Platform	Maximum Daily Limit	Average Monthly Limit	Measurement Frequency	Sample Type	Reported Values
Gail	0.00959 mg/l	0.00594 mg/l	Once/quarter	Grab	Daily Max and Monthly Ave
Grace	0.0107 mg/l	0.00579 mg/l	Once/quarter	Grab	Daily Max and Monthly Ave
Harvest	0.0108 mg/l	0.00577 mg/l	Once/quarter	Grab	Daily Max and Monthly Ave
Hermosa	0.00774 mg/l	0.00628 mg/l	Once/quarter	Grab	Daily Max and Monthly Ave
Hidalgo	0.0107 mg/l	0.00579 mg/l	Once/quarter	Grab	Daily Max and Monthly Ave
Irene	0.00939 mg/l	0.00597 mg/l	Once/quarter	Grab	Daily Max and Monthly Ave

Table C-2 – Effluent Limitations and Monitoring Requirements for Fire Control System Test Water

Platform	Maximum Daily Limit	Average Monthly Limit	Measurement Frequency	Sample Type	Reported Values
Harvest	0.0126 mg/l	0.00556 mg/l	Once/quarter	Grab	Daily Max and Monthly Ave
Hermosa	0.00856 mg/l	0.00611 mg/l	Once/quarter	Grab	Daily Max and Monthly Ave
Hidalgo	0.0125 mg/l	0.00557 mg/l	Once/quarter	Grab	Daily Max and Monthly Ave

Appendix D – Reasonable Potential Procedures for Platforms Not Included in Appendix B or C

The following procedures are applicable to platforms (other than those platforms listed in Appendix B) which discharge produced water, and to platforms (other than those listed in Appendix C) which add chlorine to any discharges (e.g., cooling water or fire control system test water). For produced water discharges, the Permittee shall sample (as described below) for the constituents listed in Table D-1 to determine whether the discharge causes or has the reasonable potential to cause, or contribute to an excursion above the applicable marine water quality criteria. When chlorine is added to a discharge, the Permittee shall sample chlorine in the discharge (as described below) and conduct the same reasonable potential analysis as in the case of produced water; for chlorine, the marine water quality criteria to be met (post-dilution at the edge of the mixing zone) are 7.5 ug/l (criteria continuous concentration) and 13 ug/l (criteria maximum concentration).

Table D-1 - Water Quality Criteria (in ug/l) for Produced Water Reasonable Potential Determination

Constituent	Water Quality Criteria (ug/l)[1,2]
Ammonia	1300[3]/600
Arsenic	36/8
Cadmium	8.8/1
Copper	3.1/3
Cyanide	1/1
Lead	8.1/2
Manganese	100
Mercury	0.051/0.04
Nickel	8.2/5
Selenium	71/15
Silver	1.9/0.7
Zinc	81/20
Benzene	5.9
Benzo (a) Anthracene	0.018
Benzo (a) Pyrene	0.018
Chrysene	0.018
Benzo (k) Fluoranthene	0.018
Benzo (b) Fluoranthene	0.018

Dibenzo (a,h) Anthracene	0.018
Hexavalent Chromium[4]	50/2
Phenol	1,700,000
Toluene	15,000
Ethylbenzene	2,100
Naphthalene	not available
2,4-Dimethylphenol	850
Undissociated Sulfides[5]	5.79

[1] Where two numbers are given, the first number is the Federal criterion (EPA-822-R-02-047, November, 2002, or 68 Fed. Reg. 75507 (December 31, 2003)) and the second is the objective from the California Ocean Plan. For each such parameter, the applicable criterion is the one which proves to be more stringent based on the analysis required by Part II.B.1.c.1 of this permit. Where one number is given, it is the applicable criterion.

[2] Applicable after dilution at the edge of the 100 meter mixing zone (See Appendix A). A permittee may submit a request for a recalculated criterion based on site-specific studies and analyses that consider ambient factors and the nature of the discharge.

[3] Assumes an ambient ocean temperature of 15 °C, salinity of 30 g/kg and pH of 8.1. Effluent limitations developed for a specific platform may be based on an alternate criterion which considers platform-specific ocean conditions.

[4] Total chromium may be sampled as an alternative to hexavalent chromium in the reasonable potential analysis.

[5] Use EPA Method 376.1 (or equivalent method published in Standard Methods) to analyze for total (or dissolved) sulfide. Use procedure in method to calculate undissociated sulfide fraction. Report undissociated sulfide fraction based on the pH, temperature and salinity of both the end-of-pipe sample and ambient ocean conditions at the platform. Ambient ocean pH of 8.1 and salinity of 30 g/kg may be used. A permittee may request that this permit be modified to include a decay factor in making compliance determinations for undissociated sulfide at the edge of the mixing zone. Such a request shall be accompanied by the results of a study of the decay of undissociated sulfide in produced water discharged in southern California Federal waters. Upon receipt of the study by Region 9, this permit may be reopened and modified to include a decay factor in making compliance determinations for undissociated sulfide at the edge of the mixing zone.

a. The Permittee shall sample while discharge is occurring until 12 samples are taken. For continuous discharges in place on the effective date of the permit, the sampling frequency shall be once per month during the first year of the term of the permit. For intermittent dischargers, sampling shall be once/discharge until 12 samples are collected. For discharges initiated during the term of the permit, monthly sampling shall commence in the first quarter that the discharges begin. The samples will be taken as grab samples.

b. The reasonable potential analytical laboratory results and the quarterly dilution value shall be submitted with the DMR along with the information required in Part III.A.2 of this permit.

c. Reasonable Potential Analysis Submittal

1) The results of the produced water reasonable potential sampling for chemical constituents shall be analyzed using the procedures in the document entitled "Procedures for Reasonable Potential Evaluation in NPDES Permit No. CAG280000" and submitted to EPA in electronic spreadsheet format. The completed spread sheet for each discharge will be sent to EPA no later than one year and three months after the permit becomes effective; for platforms with intermittent discharges the spread sheet shall be submitted as soon as the necessary data have been collected. The submittal shall include a determination of the minimum dilution limit required for each discharge location to maintain no reasonable potential to exceed the Water Quality Criteria for any constituent listed in Table D-1 and for chlorine. For parameters with two criteria specified in Table D-1, the submittal shall be based on the more stringent of either: a) the Federal criterion, or b) the California Ocean Plan objective. In conducting the analysis for the metals in Table D-1 (As, Cd, Cu, Pb, Hg, Ni, Se, Ag, Zn and Cr^6), and for ammonia and cyanide, the California Ocean Plan 6-month medians shall be converted to 4-day averages using the procedure in the document entitled "Procedure for Comparing California Ocean Plan 6-Month Median and a 4-Day Average for NPDES Permit No. CAG280000", dated August 16, 2001.

2) Dilution ratios will be determined using the methods in Appendix A of the permit. The dilution calculation will be based on the produced water average quarterly flow.

d. Previously Collected Data. If results for the above listed constituents were previously collected and meet appropriate methods and detection limits, the previously collected data may be used to satisfy the reasonable potential sampling requirements (including metals sampled as composites).

e. Establishing Reasonable Potential

1) Evaluation. After EPA receives the reasonable potential sampling results (spreadsheets) from an operator, the information will be evaluated for the potential for the exceedance of a water quality criterion. Data for all criteria listed in Table D-1 shall be submitted at one time for the discharging platform.

2) Limitations After the Establishment of Reasonable Potential. The Permittee will be notified of the results of EPA's review of the reasonable potential spreadsheets submitted by the permittees. Platform specific limitations become effective the first quarter subsequent to permit modification to include such limitations. Any permit modifications will be conducted in accordance with procedures set forth at 40 CFR Part 124. Monitoring will continue on a quarterly basis for the remainder of the permit for those constituents with limits.

3) Dilution Ratio Changes Subsequent to the Data Gathering Phase. The permittee shall calculate the quarterly dilution value each quarter subsequent to the data gathering phase. If the quarterly dilution value is less than the minimum dilution limit, this permit may be reopened and modified to include additional effluent limitations and monitoring requirements based on the reasonable potential for the exceedance of a water quality criterion.

f. Interim Produced Water Limits for Platform Irene. During the reasonable potential data gathering and evaluation phase of this permit, the numeric water quality limitations and monitoring requirements in Table D-2 below from the previous individual NPDES permit for Platform Irene (CA0110648) will be in effect for compliance and enforcement purposes. These effluent limitations are applicable following initial dilution in the mixing zone defined in Part V of the general permit. Compliance with the limits shall be calculated in accordance with Appendix A of the general permit.

Table D-2 - Produced Water Enforceable Limits During Reasonable Potential Sampling for Platform Irene

Constituent	Daily Max (mg/l)	Monitoring Frequency	Sample Type
Arsenic	0.032	Once/3 months	Composite
Cadmium	0.004	"	"
Total Chromium	0.008	"	"
Copper	0.012	"	"
Lead	0.008	"	"
Mercury	0.00016	"	"
Nickel	0.020	"	"
Selenium	0.060	"	"
Silver	0.0028	"	"
Zinc	0.080	"	"
Ammonia (expressed as N)	2.4	"	Discrete
Cyanides	0.004	"	"
Phenol	0.12	"	"
Naphthalene	0.0235	"	"
2,4 Demethylphenol	-	"	"
Benzene	0.0059	"	"
Toluene	0.05	"	"
Ethylbenzene	0.0043	"	"
Benzo(a) pyrene	0.003	"	"
Bis (2-ethylhexyl) phthalate	0.0035	"	"